



DOWNTOWN STUDY AREA



REPORT

COMPREHENSIVE
PARKING
STUDY

City of Durham, North Carolina



DURHAM CENTRE
PARKING GARAGE
LEVEL P2



CITY OF DURHAM COMPREHENSIVE PARKING STUDY

Prepared for: City of Durham, North Carolina



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KHA Project #: 011494075

October 2013



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1 | Executive Summary

The City of Durham has performed a comprehensive examination of the existing parking system to be in a position to provide an improved experience to those that work, visit, and live in Durham. This document outlines the process and results of the City of Durham Comprehensive Parking Study, with emphasis placed on the Downtown study area. The study was performed by documenting existing parking conditions and operational strategies, as well as projecting future parking demand based on a collaboration with City of Durham staff, Durham County staff, Downtown Durham, Inc., Downtown business owners and stakeholders, as well as the general public.

A Parking Study Team (PST) was developed to act as a sounding board for recommendations being considered as a result of the study. The PST was also an integral part of the process throughout the study ensuring that appropriate items of interest were incorporated. The PST was composed of City staff from the Department of Transportation, Durham City-County Planning Department, Office of Economic and Workforce Development, as well as representatives from Durham County, Downtown Durham, Inc., and Blackwell Management Company. The PST helped to develop a list of business owners and community stakeholders that should be a part of the parking study process and were included in the outreach efforts with individual interviews. In addition, an online survey was developed to provide a means for a larger audience to provide input on the parking system. The online survey was structured such that it was applicable to business owners, visitors, downtown employees, and residents and was circulated by the City and Downtown Durham, Inc. through email distribution lists. Key survey findings include:

- ~70% of employee respondents park for 6-10 hours; ~48% of which park on-street
- Peak business activity during lunch hours
- Top three parking items of interest/concern:
 - Ability to find parking
 - Cost of parking
 - Distance from space to destination
- Business owners want better wayfinding, technology, and inventory

Parking demand associated with future development projects as well as the impacts from recommendations resulting from this study was estimated for the Downtown study area utilizing a parking demand model (Park+). On the surface, parking demands are met with the existing parking inventory within the study area as a whole, but the location of the supply does not align with that of the demand. Given the close proximity of projected development to existing adjacent development, as well as reasonable walking tolerances for those parking in Downtown and available parcels, it is difficult to pinpoint exact locations for parking infrastructure to meet the parking demands and limitations. As a result, it is recommended that the City work with private developments to incorporate a component of public parking into their projects and enter into a public/private partnership to deliver that component of the project. This approach will centralize parking inventory around the developments that are drawing demand and will likely allow the City to deliver this infrastructure at a lower cost than stand-alone City built parking garage projects.

A review of existing parking operations and management was performed that focused on the many types of users of both on- and off-street spaces and the associated strategies of each. It was found that when compared to other communities of equal size, the City operates with fewer staff and resources to manage their parking system. Further, it was determined that other areas of the parking system, including facility security and wayfinding, are lacking in quality and quantity. Sections in this report titled “Management Organizational

Options”, “Wayfinding and Parking Guidance”, and “Peer City Outreach” provide examples of strategies implemented in other cities that have been successfully implemented. Within the Management Organizational Options section is a description of parking monetization, goals and key issues associated with such a process, and the legal authority within the North Carolina General Statutes to do so.

One of the main recommendations of the study is implementation of a paid on-street parking system to encourage turnover. As a result, a review of on-street payment technology was performed. Several options were considered keeping in mind the Guiding Principles developed for the study, specifically providing exceptional client service, several payment options, and ease of use. Another goal of the PST specific to on-street payment technology was to provide an option that was technologically advanced, such that it could have a relatively long service life, rather than being outdated in the near future. Several technology options were considered, including single space credit card meters, pay stations, including pay-by-space and pay-and-display, pay-by-license plate, and pay-by-cell. In addition, the flexibility that each of these options have on smart phone applications and other miscellaneous parking technology was considered. In the end, pay-by-cell technology supplemented with pay-by-space pay stations located on each block face with paid on-street parking was selected as the recommended approach for on-street payment technology. The combination of these two technologies was selected to provide an easy to use and convenient program.

Currently, the City does not operate with a single fund associated with all things related to parking. Rather, revenues and expenses associated with typical operations and maintenance reside in the Department of Transportation, while facility maintenance and repair is funded through General Services. Further, current debt service related to the construction of the North Deck and renovations of the Durham Centre and Corcoran Street garages are assigned to the General Fund. In an effort to combine all parking related services into a single Parking Enterprise Fund, a 3-, 5-, and 10-year financial analysis was performed that utilized revenue and expense data provided by the City as well projected revenues and expenses related to recommendations that were made as a part of this study. The result of the financial analysis, including the recommendations as outlined in this document, projects that the City Parking Enterprise Fund could be self-funded (revenues equal to or greater than expenses) by 2022/2023 (10-year projection).

Finally, the following recommendations were developed to address identified parking inadequacies associated with on-street parking, off-street parking, and the overall parking system.

On-Street Parking Recommendations

Paid On-Street Parking

Begin to implement paid on-street parking for the approximately 750 spaces identified in Figure 12.1 within the Downtown study area in 2013/2014, with the intent to be operational approximately January 2015. These areas generally include the area within and on the Downtown Loop, the area surrounding the American Tobacco Campus and the Durham Performing Arts Center, West Village, and the southern portion of the Brightleaf District. The recommended hourly rate for these spaces is \$1.25.

Time Restricted Parking

Some areas of current time restrictions for on-street parking should be revised to complement the paid on-street parking system as a whole and surrounding land uses. It is important that any time limit that is in effect be actively and consistently enforced to ensure desired levels of turnover. Refer to Figure 12.2 for the recommended time restrictions for on-street parking in the Downtown study area.

On-Street Parking Payment Technology

On-street payment should be collected by a combination of two technologies in an effort to relate to a larger percentage of population. Payment should be collected via pay-by-cell technology allowing the user to pay for and supplement payment via cell phone. In addition, pay stations with pay-by-space technology should be installed on each block face with paid parking as an alternative to pay-by-cell. Pay station locations should be coordinated with stakeholders and meet ADA requirements.

Further discussion among the PST and City leaders will likely be required to determine the strategy of implementation and number of pay stations installed in the study area.

On-Street Hours of Operation

Maintain the hours of operation of on-street spaces, including when the paid on-street system is implemented, from 8:00 AM to 6:00 PM.

North Carolina General Statute Update

The City should seek partnership with the North Carolina League of Municipalities to update the North Carolina General Statute, specifically Section 160A-301 Parking, to reflect current parking industry practices related to payment and remove ambiguity.

Curb-Lane Management

The City should perform a curb-lane management study to ensure that curb lanes and block faces within Durham are allocated, operating, and managed effectively, specifically related to areas assigned to hourly parking, commercial or vehicle loading zones, valet stands, taxi lanes, bus stops, and residential parking.

Construction Activity On-Street Parking Loss

The City should require contractors and others that block on-street spaces to pay what is equivalent to the maximum daily amount for a full day of hourly parking. This would equate to the recommended hourly rate of \$1.25 per hour over a 9 hour period, or \$11.25 per day. It is recommended that the City implement this fee immediately.

Off-Street Parking Recommendations

City-Owned Vehicle Parking

Relocate the City owned vehicles to a less utilized parking facility (potentially the Durham Centre garage).

Chapel Hill Street Parking Lot

The surface lot located immediately south of the Chapel Hill Street garage should be restricted to hourly users only to encourage higher turnover. Those with monthly permits for the Chapel Hill Street garage should not be allowed to park within this surface lot and should be required to park within the garage.

Lot 8 Hourly Rate

Currently, Lot 8 is an hourly only surface lot with a rate of \$2.00 for the first hour, then \$1.00 for each additional hour up to a daily maximum of \$10.00. Considering the drastic decrease in hourly revenue generated from Lot 8 as result of the relocated Durham County Courthouse, it is recommended that the City revise the rates in Lot 8 to be similar to hourly rates in other city-owned facilities – \$1.00 per hour with a daily maximum of \$8.00.

In addition, Lot 8 should be considered to be used for monthly permit parking as well, similar to Lot 14. The City should monitor its hourly parking demand and implement monthly parking if hourly use is down as a result of the County Courthouse relocation.

Monthly Permit Rate Increase

To better align monthly permit rates with regional and peer cities, monthly permit rates for all off-street facilities, including surface lots and garages, should be increased by \$10 per month beginning in 2013/2014. The resulting increase in revenue is approximately \$212,000 in 2013/2014. Given current contractual obligations with American Tobacco, monthly rate increases at the North Deck are capped. The monthly rate for users of the North Deck should reflect the maximums outlined in the current agreements with these entities.

Regional peer cities monthly permit rates range from \$60.00 – 130.00 for parking garages and \$40.00 – 60.00 for surface lots.

Special Event Rate Increase

To better align special event rates with other cities, the rate charged per vehicle for special events should be raised by \$1.00. The result will be a charge of \$3.00 per vehicle at all City-owned garages with the exception of the North Deck where the rate will increase to \$5.00. The revenue increase is estimated to be approximately \$60,000 in 2013/2014.

Develop and advertise a new optional permit for those that prefer a reserved parking space. This new permit option should provide 24/7 access to a reserved parking space in a facility closest to the permit holder’s place of residence. It is recommended that the rate for a reserved 24/7 residential permit be \$90 per month.

In addition, the existing residential permit rate of \$10 per month that allows access outside of normal operating hours should remain available and be increased to rate of \$20 per month.

Residential Permit

For residents that desire to have parking access during the day, as well as nights and weekends, but do not require a reserved space, they have the option to purchase a typical off-street permit at a current rate of \$55 per month for surface lots and \$65 per month for garages, which allows access during normal operating hours.

There is currently no charge for parking in City-owned facilities during nights and weekends, thereby resulting in 24/7 access, albeit not reserved parking, for the cost of a typical monthly permit.

Long Term Lease

Considering the current operating deficit of the Parking Fund, any long term lease for parking should be carefully reviewed. At a minimum, any long-term lease should include provisions that allow the City to increase lease rates at regular intervals. Monthly leases, in general, should be offered on a month-to-month basis, with no bulk or duration discount.

Parking Facility Assessments

A base-line condition assessment of all City-owned garages is currently underway to determine long-term maintenance needs. In addition to assessing City-owned garages, the City should assess surface lots as well. The results from these assessments will outline a 10 year budget plan for on-going maintenance and future repairs for all City-owned facilities such that the City can better financially prepare.

Future Garages

To meet future demand in the Downtown study area, the City should begin to plan for potential need for future City-owned parking garages. Two sites for potential garages were identified within the Downtown Loop along West Morgan Street to meet the demand in the City Center (see Appendix B for conceptual layouts). In addition, conceptual plans have previously been prepared by others for Lot 8 as a potential parking development site. Another location is recommended in the Central Park District to support growth in the northern portion of the study area.

Should the City move forward with redevelopment of the existing Chapel Hill Street garage and surface lot site, the existing parking supply is recommended to be replaced by another garage within the Downtown Loop prior to demolition of the existing parking facilities.

Priority should be placed on public/private partnerships rather than standalone City-owned structures (see next recommendation).

Public/Private Partnerships

While the need for the City to plan for and build standalone parking may be required, the City should put priority on building parking infrastructure within the study area through public/private partnerships. This approach maximizes land use within Downtown and minimizes City staffing requirements to plan, facilitate, and construct standalone parking facilities. It also better aligns parking inventory with demand, as additional City supply would be incorporated within the development. Two models for ownership are possible, where either the City owns the parking facility and leases spaces to the private entity or the private entity owns the parking facility and shares a portion of the revenue generated with the City.

Potential project locations for public/private partnerships include the Woolworth Site and a potential future garage in the Central Park District.

Parking Access and Revenue Control Equipment

The City should continually monitor, maintain, and upgrade equipment as necessary to provide a positive user experience. This applies to equipment in garages and surface lots. When replacing equipment, emphasis should be placed on multiple payment options, as well as the ability to maintain space counts for use in parking management decisions and parking guidance signage. The City could also consider leveraging pay-in-lane technology which would allow users to pay upon exiting a facility without the need for an attendant.

In addition, the City should continue to implement a 24/7 gates down operation, where users are required to pull a ticket no matter the time of day they enter a facility; however, they will only be charged for the length of time they used the facility during normal operating hours.

First Hour Free

Following the implementation of paid on-street parking, the City should review on- and off-street user patterns and consider implementing a first hour free program in the off-street facilities, particularly garages.

Armory Surface Lot

It is recommended that the County surface lot adjacent and to the south of the Armory and across the street from the main entrance into the Convention Center be operated as a fee based lot with a pay station. No gates would be required, but a single pay station would be installed where users of the lot would be required to pay for their stay. This would require coordination between, and approval of, Durham County and the City of Durham.

Surface Lots within Paid On-Street Extents

It is recommended that the City install pay stations in the surface lots that are located within the extents of the recommended paid on-street locations, requiring users to pay for time in which they occupy space within these public lots. Similar to the Armory surface lot recommendation, gates would not be required, rather a single pay station per lot would be installed that would provide a location for users to pay for their stay.

Overall Parking System Recommendations

Improved Parking Management

A Parking Manager should be appointed or hired to oversee all parking related issues from policy, planning and design, construction, maintenance, and management.

Parking Enterprise Fund

Implement a Parking Enterprise Fund ensuring all net revenues collected from the parking system would be used to pay for public improvements in the area in which the revenues were collected. Cities with Parking Enterprise Funds typically also use parking revenues to fund debt service and maintenance associated with new and existing parking facilities, which is recommended for the City of Durham.

Improve Security

To help improve security, lighting should be upgraded in and around City-owned parking facilities, including along main paths of travel between parking facilities and Downtown business and entertainment destinations. In addition, CCTV surveillance capabilities should be considered for installation at all garages.

In addition, the number and frequency of security guard patrols of city-owned facilities should be increased such that there is at least a patrol presence 24 hours per day. Currently, security guards patrol the City-owned parking garages from 5:00 PM – 12:00 PM, seven days per week. The Durham Centre and Chapel Hill Street garages each have a dedicated security guard during this time and the Corcoran Street and Church Street garages share one security guard that patrols both facilities. Between the hours of 12:00 PM and 8:00 AM there are no security guards on duty.

Parking Wayfinding

Implement a signage system focused on vehicular movements throughout the study area utilizing larger signage, font, and graphics, as well as similar color coding and district delineation as used in the pedestrian signage. In addition, a parking guidance system to communicate available parking spaces by garage to drivers on dynamic signage placed throughout the City should be studied in more detail.

Parking Brand

Develop a brand for public parking in Durham, similar to that of Raleigh, NC, Eugene, OR, and San Francisco, CA. Once a brand is developed the associated logo and name should be consistently used on all City-owned facility identifying signage, as well as the City parking website. Consistent marketing and advertisement should improve the perception of parking in Downtown Durham.

Parking Ambassador Model

Implement a parking ambassador model to parking enforcement in Durham that focuses on educating the public about the parking system, rather than focusing on revenue generation through parking citations. Currently, Lanier Parking Solutions equips their enforcement officers with maps of Downtown such that they can assist the public; however, this program should be upgraded and expanded.

This recommendation in no way suggests that citations should not be issued to those not obeying parking and traffic restrictions.

Electric Vehicle Charging Stations

Implement electric vehicle charging stations per the Durham City-County Electric Vehicle and Charging Station Plan, however, base installations on demand. Provide a means on the City website for the public to communicate their desires for electric vehicle charging stations and implement installations as appropriate. Policy related to use of these spaces and charging stations should take into account the following:

- Users of an electrical vehicle charging station space should be required to pay for the use of the space in a manner that is consistent with the facility in which it is located.
- Electric vehicle charging station spaces should be reserved for electric vehicle use only. Use of this space by non-electric vehicles should be cited.
- Use of an electric vehicle charging station space should be time restricted, to minimize the situation of one vehicle occupying the space for an entire day. The time limit should be determined on a case by case basis and be based on the charging duration requirements of the equipment being installed.

Periodic Parking Rate Increases

Increase hourly, monthly permit, and special event parking rates by 20% in 2017/2018 with an additional 20% increase in 2022/2023 to maintain consistency with inflation and the growth of the parking system and parking operation. These increases assume parking rates would be increased at approximately five year intervals; however, the exact increase and timing of implementation would need to be based on actual financial conditions and reflect then current conditions. On-street parking should be maintained at a higher rate than off-street to encourage long-term visitors to use the off-street facilities.

This rate increase is in addition to the recommended \$10 increase to monthly permit rates in 2013/2014. This rate increase also does not apply to the North Deck due to existing agreements with American Tobacco ownership and Triangle Transit.

Motorcycle Parking

It is recommended that the City consider locating motorcycle parking in on- and off-street facilities in a manner that minimizes the impact to the existing parking supply (e.g., using areas that are not accessible by typical vehicles).

2 | Introduction

The City of Durham, with the assistance of Kimley-Horn and Associates, Inc. (KHA) has developed a Comprehensive Parking Study intended to address existing and future parking issues in its downtown core and Ninth Street district. This study will review the items below with a focus on the Downtown Study Area:

- Public perception of parking discussed during public involvement sessions,
- Existing parking trends determined during a thorough field review,
- Parking demand projections determined through the use of an innovative parking model designed specifically for the City,
- Operational strategies and organizational structure,
- Financial projections determined through a review of provided financial data,
- Review of monetization of a parking system.

Finally, this report will present recommendations intended to improve these issues and help the City prepare for projected growth and expansion.

Historical Context¹

The land that would become Durham is thought to have been the site of an ancient Native American village named Adshusheer, which was settled by the Eno and Occaneechi tribes. These Native Americans helped to mold the area that is now Durham by establishing settlement sites, transportation routes, and environmentally-friendly patterns of natural resource use along the Great Indian Trading Path, which traced through the settlement. In 1701 European explorer John Lawson chronicled the area that is now Durham as “the flower of the Carolinas”. Later, during the mid-1700’s, colonists settled, built



View of Bennett Place
(courtesy NC Division of Archives & History)



American Tobacco Company, circa 1900
(courtesy NC Division of Archives & History)

gristmills, and worked the land.

The area remained an active settlement through the Revolutionary War and Civil Wars. In fact, Union General Sherman and Confederate General Johnston negotiated the largest surrender at the end of the Civil War at Bennett Place, located approximately 5 miles northwest of present day Downtown Durham. After the ceasefire, troops from both sides celebrated together and discovered Brightleaf tobacco. From this celebration, the tobacco industry in present day Durham was born. Shortly thereafter in 1869, the City of Durham was

incorporated. The tobacco industry in the area ultimately led to

¹ This section based on text found at www.durham-nc.com/about/overview-facts-history/history_glance.php.



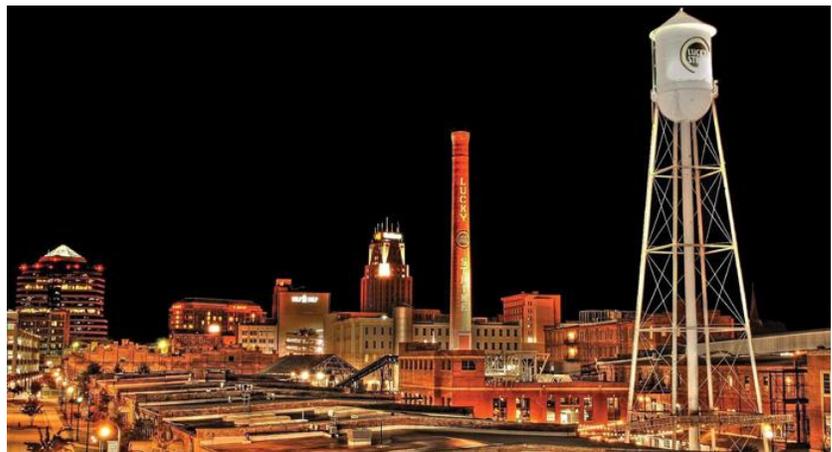
Americans was founded by D. James E. Shepard in 1910 – North Carolina Central University.

NC Mutual Life Insurance Co., circa 1906
(courtesy NC Division of Archives & History)

Following the Civil War, and concurrent with the rise of the tobacco and education industry in Durham, the City became a hub for African American enterprise. In 1898, John Merrick founded North Carolina Mutual Life Insurance Company. In addition, Mechanics and Farmers Bank (M&F Bank) was founded in 1907 within the limits of Durham. Following the lead of these two African American successes, other businesses followed suit, growing Durham's Parrish Street neighborhood, famously known throughout the country as "Black Wall Street".

In the 1950's and 1960's, the Research Triangle Park was developed in Durham pinelands and has grown to what is now the world's largest university-related research park. At its inception, the Research Triangle Park consisted of 4,400 acres. The park grew to over 7,000 acres and is considered home to more than 170 major research and development companies, employing more than 39,000 full-time equivalent employees.

As times have changed, Durham has proven to be a community that can successfully accommodate development. Today, Durham is flourishing as development and redevelopment occurs throughout the downtown area. The 2012 population is estimated to be more than 235,000, with many more visitors each year. Businesses, live music, conventions, sporting events, arts, shopping, and restaurants attract employees, residents, and tourists throughout the year. These same employees, residents, and visitors have impacted the way people move around the Downtown area. As the City continues to grow, it is important to consider how these changes affect daily life for all that work, reside, and visit downtown. This study represents one way the City of Durham is showing its commitment to plan for its future while maintaining the charm that attracts new employees, residents, and visitors.



Downtown Durham Skyline
(courtesy durham-nc.gov)

As the City continues to grow, it is important to consider how these changes affect daily life for all that work, reside, and visit downtown. This study represents one way the City of Durham is showing its commitment to plan for its future while maintaining the charm that attracts new employees, residents, and visitors.

Previous Planning Efforts

Numerous planning efforts specifically related to parking planning within the downtown study area have been undertaken by the City of Durham. Understanding the previous studies/reviews and how the parking program evolved provides useful insight into assessing parking in the City today. The scopes and recommendations of five studies/reviews are summarized as follows.

Discount Parking Rate Study (August 1998)

The purpose of this study, performed by Carl Walker, Inc., was to evaluate the parking related goals documented in the Downtown Durham Revitalization Plan. The Downtown Durham Revitalization Plan was developed in 1989. The assessment documented in the August 1998 study reflected the goals established nearly 10 years prior. The following recommendations resulted:

- The City-owned parking garages were deteriorated and in need of reinvestment for rehabilitation, including the then newer Durham Centre garage.
- Monthly and hourly parking rates in Durham were the lowest in the state for cities of equal or greater population and should be adjusted. Rates documented in the study were \$25.00 – 60.00 per month for monthly leases and \$0.50 for the first two hours and \$0.60 for each additional hour up to a daily maximum of \$5.80 for hourly use.
- Monthly parking availability in the Durham Centre garage was likely to become sparse after construction of the second Durham Centre tower was completed.
- Based on a survey of current conditions, monthly spaces could be oversold in the City-owned garages by 10% with no adverse effects.
- Implement a multi-space discount program was not warranted at the time.
- Replace the existing parking revenue control equipment to take advantage of technology advances.
- The physical condition of City-owned garages should be assessed on a continuous basis as part of an on-going maintenance program to address cracking, rusting, spalling, etc.
- A cooperative relationship between the City and Downtown Durham, Inc. was encouraged.

Downtown Durham Parking Survey (October 1999)

The purpose of this study, performed by John D. Edwards, P.E., was to provide basic information on the number of spaces and peak use of parking on a block-by-block basis. The study provided recommendations for a more efficient use of existing parking, pinpointed blocks of parking surplus and deficit, evaluated the Parking Management Organization, and recommended redesigned and new parking areas. This study focused on the existing parking system and its operation and did not address future parking needs. The following recommendations resulted:

- Implement an improved record keeping system for citation issuance that consider hand held computers coupled with a PC based software program.
- Several off-street surface lots should be redesigned to provide additional parking supply. Schematic diagrams were provided on the redesign of three lots to provide an additional 100 parking spaces combined. The redesigned lots are referred to as Block 6 (bounded by Main Street and Morgan Street, immediately west of the railroad tracks and the Downtown Loop), Blocks 18 and 44 (bounded by Vivian Street, Blackwell Street, Pettigrew Street, and Mangum Street), and Block 64

(bounded by Morris Street and Roney Street, immediately adjacent and to the north of Durham Centre).

- Approximately 400 total on-street spaces should be added along Main Street, Morgan Street, Ramseur Street, and Mangum Street.
- Addition of parking supply should be coupled with increased enforcement.
- Downtown Durham, Inc. should initiate a parking promotions program including newspaper articles, parking maps, a “parking bank,” and a signing system for off-street parking.
- Establish a parking unit within the City organizational structure managed by a professional parking manager.

Parking Management Study for Downtown Durham, NC (May 2004)

The purpose of this study, performed by Central Parking System, was to provide inventory and type of parking in the study area. For this project, the study area consisted of each off-street facility that was part of Central Parking Systems management contract and 338 on-street spaces within the 25 block area in the Downtown Loop. In addition to inventory, both off-street and on-street utilization was determined.

A rate study and financial analysis was also performed for 596 on-street parking spaces within the Central Business District. This analysis included the potential revenue generated from implementing paid on-street parking.

The results of the study were:

- Off-street peak occupancy was approximately 65% within the study area (59% occupancy in 2012).
- On-street peak occupancy was approximately 79% within the study area (72% occupancy in 2012).
- Off-street hourly parking rates, if increased to \$1/hour and \$6 daily maximum could generate an additional \$174,000/year.
- Implementing a paid on-street program could generate \$322,000/year based on a \$0.25/hour rate, \$470,000/year based on a \$0.50/hour rate, and \$765,000/year based on a \$1/hour rate.

Downtown Durham Master Plan – 7-year Review & Updated Workplan (January 2008)

The purpose of this Master Plan was to provide update and further direction from the original Downtown Durham Master Plan adopted by the City Council and County Commission in 2000. Specific focus was placed on public policy issues and development projects that should guide downtown’s revitalization efforts for the following 2 – 7 years. The following five overarching themes were outlined in this Master Plan Update:

- **The City Center as a Focal Point:** Continue to develop the City Center inside the Downtown Loop as the focus of development in Durham. Eight development opportunity sites were identified in the City Center including South Bank Site, Ramseur Street Parking Lots, Green Space, Woolworth Site, 212 Corcoran Street, Triangle Parking Lot adjacent to Chapel Hill Street Garage, Morgan Street Parking Lots, and Civic Center Plaza.
- **Connectivity:** Easy movement between Downtown districts, as well as with surrounding neighborhoods, needs to be a focus to promote activity in Downtown Durham. This includes converting primary downtown streets to two-way traffic, minimizing the impact of the railroad tracks separating City Center and American Tobacco Districts, and activating street-level experience for visitors.

- **Residential In-Fill Development:** Continue to promote residential life within Downtown Durham with a goal of reaching enough units required to attract and support a grocery store.
- **Continue Public Sector Investment:** Continue the momentum gained by successful public/private partnership projects, which should continue to be an integral component to successful build-out of Downtown Durham.
- **Enhance the Capacity of Downtown Organizations:** Considering City staff have responsibilities beyond the limits of Downtown Durham, the Downtown community should organize around an enhanced Downtown entity (i.e., enhanced Downtown Durham, Inc., Business Improvement District, Downtown Development Authority) to facilitate improvements, development, and other vital activities related to Downtown.

In addition, the Master Plan Update identified four items that the community should plan to accomplish in the future:

- Residential units exceeding 10,000 units (including market-rate and workforce housing)
- Hotel rooms in excess of 1,000
- Growing office space by an additional 1,000,000 square feet
- Implementation of open/recreational space within the Downtown fabric

Comprehensive Review of the Parking Program (October 2008)

In 2008, Lanier Parking Solutions performed a review and recommendation for improvement of several City parking policies, including hourly and monthly permit rates, construction permits, hours of operation, and Downtown resident parking. Lanier drew on their parking management and operations experience. Below is a brief description of each item reviewed and the resulting recommendation.

- **Hourly Parking Rates:** City parking rates had not been adjusted in many years and based on other markets in North Carolina are well below standard. An hourly rate structure was recommended that would increase garage hourly parking to \$1.00 per hour up to a daily maximum of \$8.00 and surface lot hourly parking in Lot 8 to \$2.00 for the first hour then \$1.00 per hour for each additional up to a daily maximum of \$10.00. The hourly rates for the City of Durham in 2008 were \$0.60 per hour up to a daily maximum of \$5.80.
- **Monthly Permit Rates:** In 2008, City monthly permit rates had not been raised in over 10 years. Similar to hourly rates, monthly permit rates are below that of comparable markets in North Carolina. Monthly permit rates were recommended to be increased to \$55.00 - \$75.00 for garages and \$45.00 for surface lots. The monthly permit rates for the City of Durham in 2008 were \$30.00 - \$55.00 for garages and \$35.00 for surface lots.
- **Construction Permits:** In 2008, there were no standards as to how construction permits were issued. Lanier recommended the following options for construction permit issuance:
 - Contractors would be required to obtain parking permits through the City department with which they are working.
 - Contractors would be allotted a limited number of permits per company.
 - Contractors would be required to purchase parking at the typical hourly and monthly permit rates of \$10.00 per day maximum or \$55.00 per month.

- **Hours of Operation:** Hours of operation were not consistent between all City-owned off-street facilities in 2008. Lanier recommended setting the hours of operation to be 8:00 AM and 7:00 PM for all City-owned off-street facilities.
- **Downtown Resident Parking:** In 2008 the municipal code allowed a \$10.00 per month rate for residents of Downtown Durham to park in City-owned facilities, rather than the typical monthly permit rate. In 2008, there were 48 of these permits issued. Lanier recommended restricting City-owned facility access to these users to between the hours of 6:00 PM to 8:00 AM Monday through Friday and all day Saturday and Sunday. In addition, it was recommended that the rate of \$10.00 per month be increased to \$20.00 per month. If an individual required access beyond the times mentioned, they would be required to purchase a monthly permit.

Study Area

The Downtown Parking study area covers many districts within the City of Durham, each of which is unique and draws different types of users based on its businesses and venues. As a whole, the Downtown Durham study area is vibrant, with varying activity in many districts, including American Tobacco, Central Park, Brightleaf, West Village, Government Services, and the City Center within the Downtown Loop (see Figure 2.1). This official study area is shown in Figure 2.2 and represents the core of Downtown Durham, containing a multitude of land uses, including, residential, commercial, office, restaurant, retail, entertainment, cultural, and sports venues. The Bull City Connector bus transit extends from the Golden Belt district to Duke University with many stops along Main Street within the study area. The fare-free bus route serves the Downtown study area, as well as Ninth Street and Duke University, providing an alternative means of travel around Durham, other than personal vehicle.

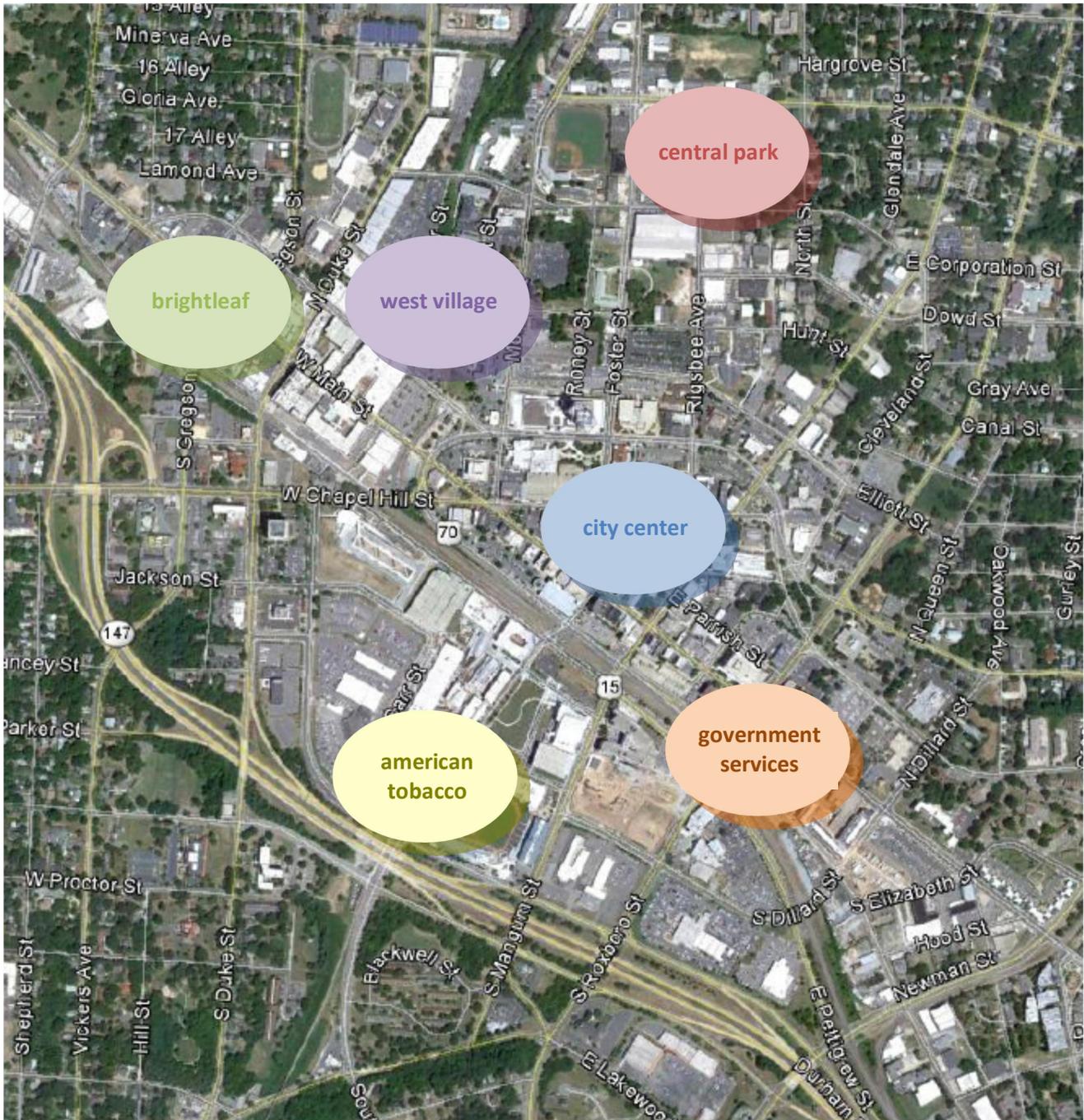


Figure 2.1 – Downtown Districts

Guiding Principles

To understand the ultimate goals of the City and the overall goal of the parking system, it was important to identify Guiding Principles for the study. These principles provided a framework, ensuring that decisions are consistent with the overall goals of the City, the parking system, and the users of the system. As recommendations were researched, analyzed, developed, and refined, the Guiding Principles were used as an evaluation tool for the Parking Study Team. Each potential recommendation was evaluated with respect to the Guiding Principles to determine if it should be further considered for implementation within the City. Recommendations presented in this document not only embrace a comprehensive approach to parking, but also emphasize the Guiding Principles shown in Table 2.1.

Table 2.1 – Parking Study Guiding Principles

Guiding Principle #1	Leverage parking infrastructure investment and enhance parking management as a key element of downtown economic development.
Guiding Principle #2	Integrate planning for future parking facilities into the larger downtown development strategy.
Guiding Principle #3	Manage off-street and on-street parking assets as a unified system to support overall parking principles.
Guiding Principle #4	Sustain parking system investments by parking revenues without subsidy from the General Fund.
Guiding Principle #5	Orient enforcement strategies towards customer service to improve public perception of parking enforcement and enhance the experience of downtown visitors.
Guiding Principle #6	Leverage technology advancement to provide exceptional customer service and additional payment options.
Guiding Principle #7	Integrate good urban design principles relative to parking facility design to better integrate parking infrastructure into the urban fabric including street level activation, mixed-use development, LEED® certification, etc.

Existing Parking Inventory

Based on field observations and data provided by the City, it was determined that there are approximately 15,581 spaces within the Downtown study area. In order to quantify the existing parking supply in its entirety, the following parking types were noted.

- On-street
- Public off-street (surface)
- Public off-street (structured)
- Private off-street (surface)
- Private off-street (structured)

Table 3.1 – Downtown Existing Parking Inventory

Parking Type	# of Spaces	% of Inventory
On-street	1,505	10%
Public off-street (surface)	859	6%
Public off-street (structured)	5,209	33%
Private off-street (surface)	6,612	42%
Private off-street (structured)	1,396	9%
Total	15,581	100%

The parking inventory identified characteristics of the parking supply for each parking type. For on-street unmarked spaces, the total number of

available parking spaces was documented, along with time restrictions. For on-street marked and off-street spaces, the total number of parking spaces was documented, along with the type of parking space (handicapped, restricted, or public), the orientation of the parking space (perpendicular, parallel, or angled) and time restrictions. Table 3.1 summarizes the total number of parking spaces by parking type within the Downtown study area. While there are over 15,000 parking spaces in the study area, approximately 51% are privately owned and offer limited public parking. The sections following the table further define the parking types.

On-Street

On-street parking represents available public parking along streets in neighborhoods and commercial areas (all parking of this type is parallel). For the Downtown study area, this category included unmarked and marked spaces. Although unmarked areas do not have a defined parking space count, they were included in the inventory because they do contribute to the Downtown study area parking supply. On-street unmarked spaces were estimated by measuring the length of unobstructed curb parking per block and dividing that length by an average parking space length of 25 feet. This calculation excludes areas adjacent to driveways, intersections, and other obstructions, such as fire hydrants. On-street parking, with 1,505 spaces, represents 10% of the total parking supply.

Public Off-Street

Public off-street spaces consist of those found in surface lots or parking structures that are owned by the City or County. Public off-street surface facilities include those lots listed in Table 3.2. Lot 37 and Lot 38 are owned by the City, but dedicated to employee parking. Public off-street structured facilities include those listed in Table 3.3. The North and South garages located in the American Tobacco District are City/County contracted facilities. The Roxboro garage is owned by the County and used for County employee parking. Public surface lot parking, with 859 spaces, represents 14% of the public off-street parking supply and 6% of the total parking supply. Public parking garages account for 5,209 spaces, representing 86% of the public off-street parking supply and 33% of the total parking supply. Overall, public off-street parking represents 39% of the total parking supply in the Downtown study area.

Table 3.2 – Downtown Public Surface Parking Inventory

Surface Lot	# of Spaces
Lot 4	24
Lot 5 – City Hall Annex	67
Lot 8	91
Marriott Lot	88
Lot 12 – Blackwell St/NC 147	62
Lot 14	102
Lot 20	76
Manning Place	21
Lot 29	48
Lot 32	10
Lot 37 ¹	54
Lot 38 ¹	164
Lot 40	52
Total	859

¹ City employee parking

Table 3.3 – Downtown Public Structured Parking Inventory

Garage	# of Spaces
Corcoran Street	554
Church Street	409
Chapel Hill Street	360
Durham Centre	719
County Courthouse	879
Roxboro ²	89
North ³	1,320
South ³	879
Total	5,209

² County employee parking

³ City/County contracted parking

Private Off-Street

Private off-street spaces, serving a variety of uses and not owned by the City, make up the remainder of the parking supply within the study area. Private off-street surface lots are scattered throughout the study area and total 6,612 spaces, representing 83% of the private off-street parking supply and 42% of the total supply. Private structured parking includes the NC Mutual Life garage, BB&T garage, West Village garage, 201 N Corcoran Deck, and the East garage accounting for 1,396 spaces and 17% of the private off-street parking supply and 9% of the total parking supply. Refer to Table 3.4 for a summary of private off-street structured parking inventory. Overall, private off-street parking represents 51% of the parking supply in the Downtown study area and provide limited public parking.

Table 3.4 – Downtown Private Structured Parking Inventory

Garage	# of Spaces
NC Mutual Life	107
BB&T	28
West Village	399
201 N Corcoran Deck	238
East	624
Total	1,396

Data Collection

When analyzing existing parking conditions, it is important to understand the nature of the actual parking demands within the study area. Parking occupancy data can help determine peak usage periods, trends for usage, and hot spots that are utilized more than others. Parking duration and turnover data can help determine

the actual effectiveness and usage of the parking supply, as well as the effectiveness of time restrictions. The following sections describe the data collection efforts for this study and specifically focus on the following:

- Occupancy: The number or percentage of vehicles occupying parking spaces in a particular facility (on- and off-street) at a particular point in time.
- Duration: The length of time a given vehicle remains in the same parking space.
- Turnover: The number of different vehicles that park in the same parking space during a specified period of time.

Parking occupancy and duration data was collected throughout the study area to capture a typical weekday and weekend evening condition, in addition to an event condition. The typical weekday data was collected hourly between 9:00 AM and 9:00 PM on Wednesday, August 15, 2012 and Thursday, August 30, 2012. Special Event data was collected hourly between 5:00 PM and 10:00 PM on Friday, August 3, 2012 and Tuesday, August 21, 2012. While occupancy data was collected for all on- and off-street spaces within the study area, duration data was collected for select areas within the study area. Duration data was collected on Tuesday, October 23, 2012.

A comprehensive database was created with the data collected as a means to map and analyze the utilization assessment. The following sections describe and illustrate existing conditions inclusive of occupancy, duration, and turnover.

Data Collection Results

Occupancy

Occupancy was evaluated for a typical weekday and typical weekend day to provide an understanding of the occupancy rates and their relationship within the study area. The occupancy data presented in this section is expressed in a range of percent occupied and color coded. The occupancy ranges used, associated color, and definition of each range is shown below.

0 – 50%	→	Facility operating under capacity
50 – 75%	→	Facility well utilized
75 – 90%	→	Facility approaching perceived capacity
90% +	→	Facility is perceived to be over capacity

Typically, a parking system is considered at capacity when occupancy approaches 85 - 90% of capacity. The 10 – 15% excess supply keeps the time required to find a parking space within reason and promotes a perception of adequate parking. When parking occupancy exceeds these levels, there may be delays and frustration in finding a space and patrons may be forced to use a space that is too far from their destination or does not offer a comfortable walking environment. This margin also allows for: 1) the activity of vehicles moving in and out of parking stalls during busy periods, 2) surges in short-term parking activity, and 3) the temporary loss of spaces due to improperly parked vehicles, weather conditions, construction activity, etc.

Weekday Occupancy

Figure 3.2 shows the study area occupancy for a weekday afternoon (2:00 – 3:00 PM). This time period represents the peak occupancy for the Downtown study area. Although this time period does not necessarily correspond to the peak occupancy for each individual facility, it does provide an illustration of the relationship between all of the facilities during the peak period.

Figure 3.3 shows occupancy for a weekday late afternoon (4:00 – 5:00 PM). In this timeframe, the majority of public parking in the study area is still operating close to capacity, with the exception of a few off-street lots scattered through the study area. The on-street parking within the Downtown study area remains fairly well utilized, as during this timeframe visitors are starting to come to the study area for after work activities.

Figure 3.4 shows the study area occupancy for a weekday evening (7:00 – 8:00 PM). The majority of parking is underutilized, with the exception of on-street parking. In general, the off-street lots that are experiencing higher occupancy levels are serving commercial (primarily restaurant) uses.

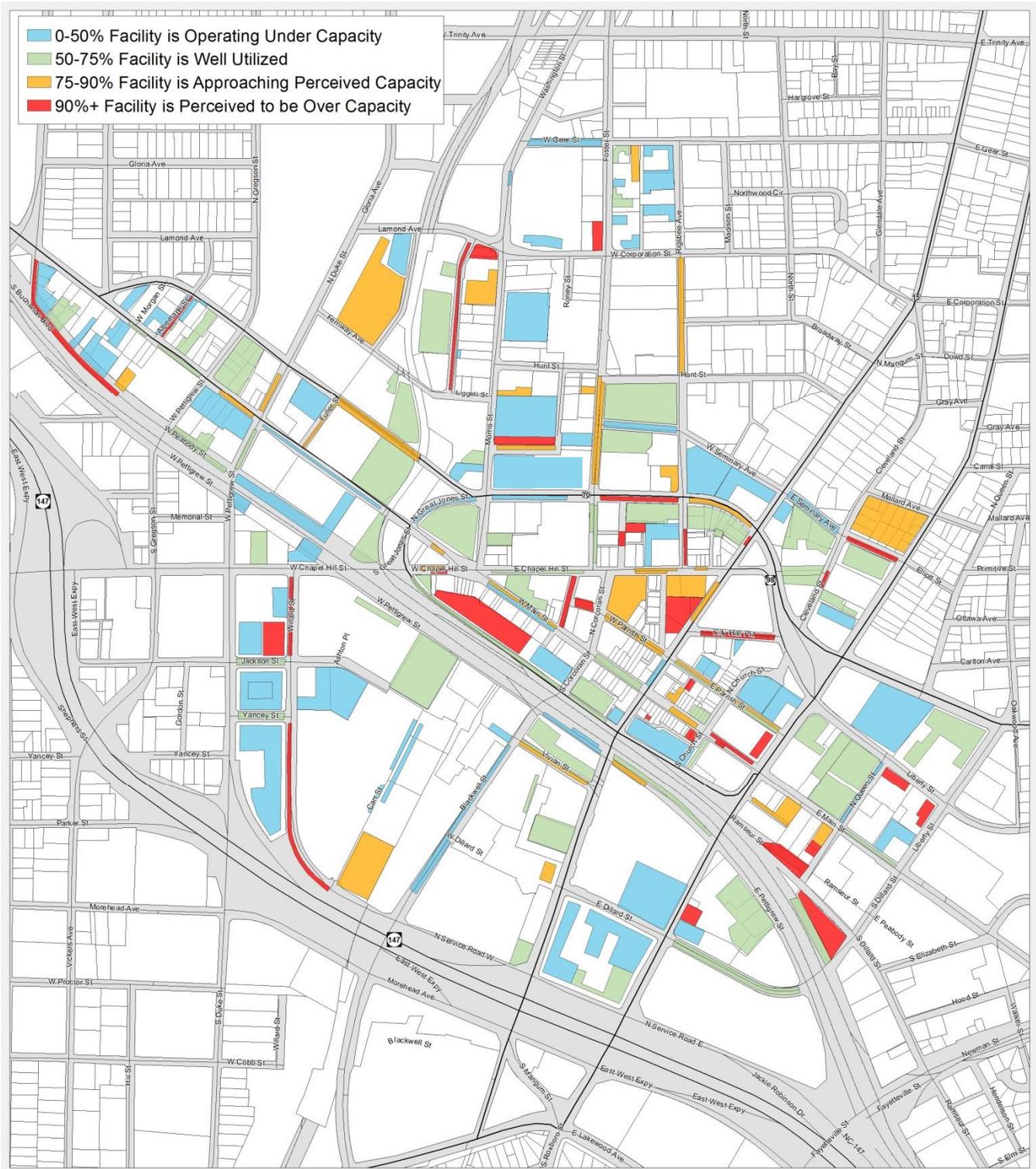


Figure 3.2 – Weekday Peak Occupancy (2:00 PM – 3:00 PM)

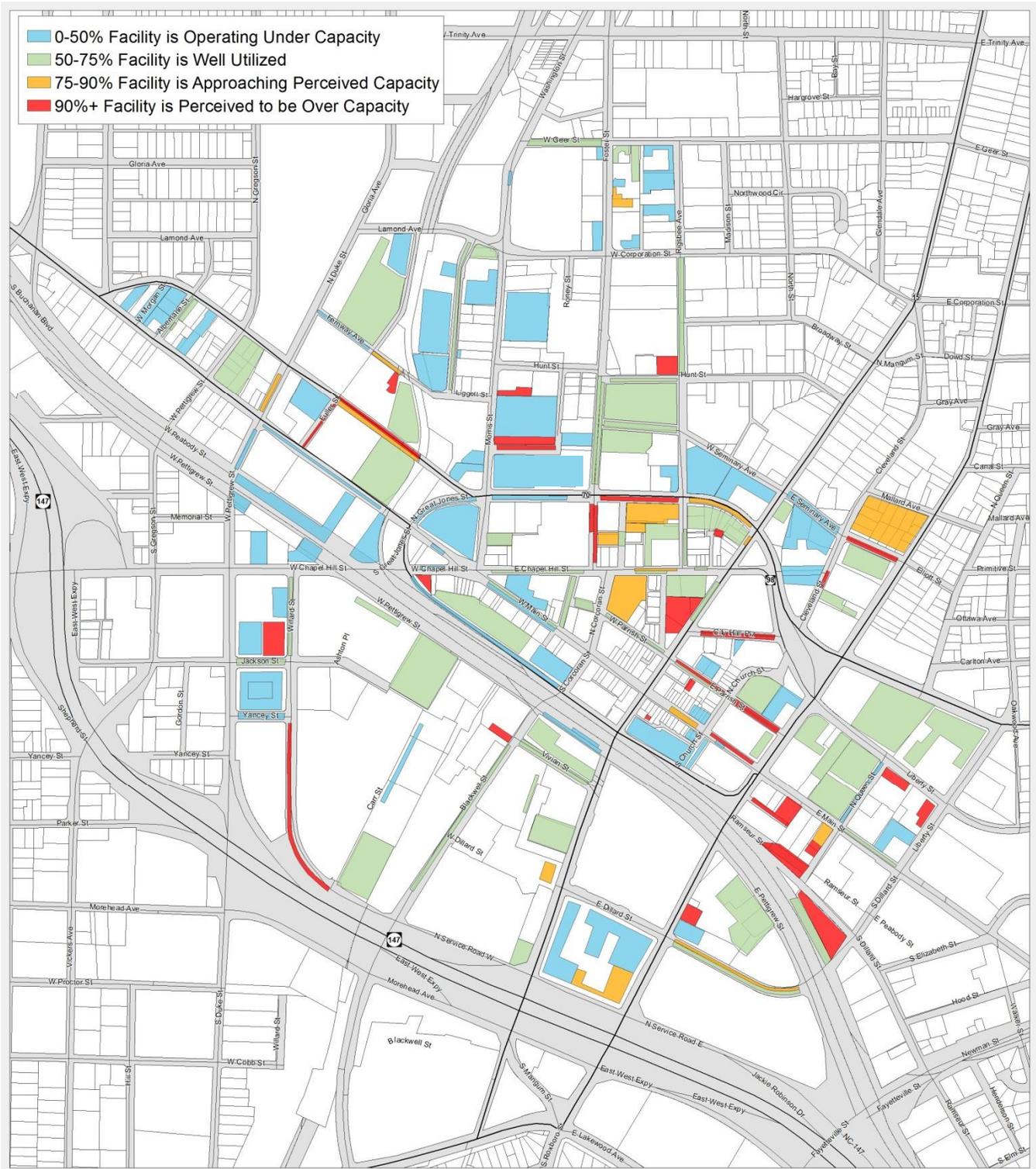


Figure 3.3 – Weekday Late Afternoon Occupancy (4:00 PM – 5:00 PM)

Weekend Event Occupancy

Figure 3.5 shows the study area occupancy for a weekend evening (8:00 – 9:00 PM) during a special event. This data was collected Friday, August 3, 2012. The Durham Bulls baseball team had a home game that evening that was concurrent with an event at the Durham Performing Arts Center (DPAC). As would be expected, the garages surrounding the Durham Bulls Athletic Park (DBAP) and DPAC were at capacity. The on-street parking in the area also was heavily utilized. The off-street lots and garages on the periphery of this area were underutilized.

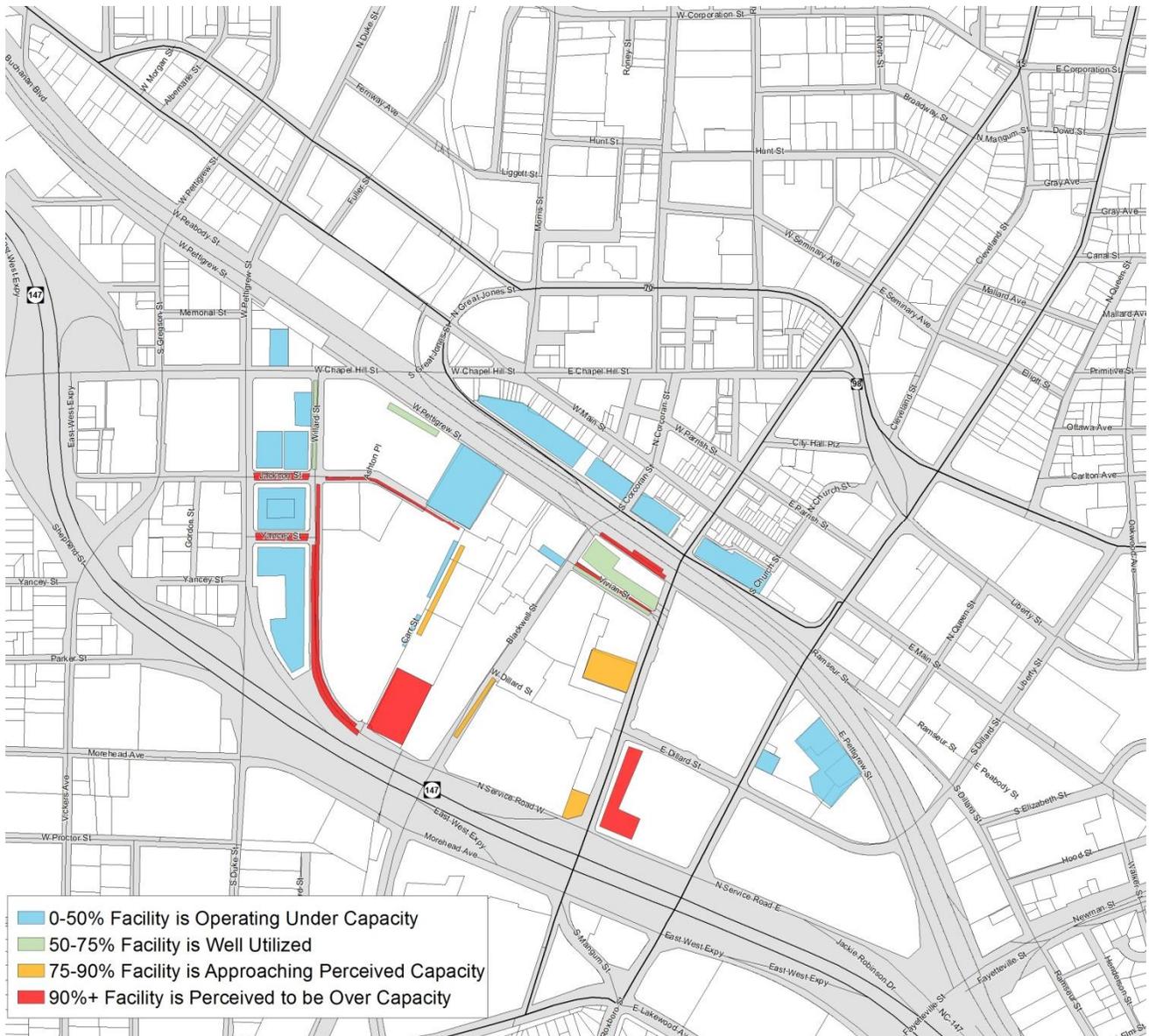


Figure 3.5 – Weekend Evening (Special Event) Occupancy (8:00 PM – 9:00 PM)

The occupancy figures yield the following general observations for the study area.

- Typically, the highest occupancy levels were identified in the on- and off-street facilities within the core of the Downtown study area, with the exception of the weekday evening condition where data collection was focused in the American Tobacco District.
- On-street parking in the Downtown study area experiences consistent use throughout the day with the highest utilization during the evenings.
- The majority of the public and private off-street parking supply operates below capacity during non-event evenings.

Duration

Duration data was collected for 46 on-street spaces along West Main Street and for 29 on-street spaces along Chapel Hill Street. These areas were selected, as they are within the core of the study area. Duration data was collected on a Tuesday, between the hours of 10:00 AM and 4:00 PM to capture a typical weekday condition.

As outlined in Table 3.5, there were 237 duration observations for the 75 on-street spaces. The overwhelming majority of vehicles (77%) were parked for one hour or less, while approximately 23% of vehicles parked for more than one hour. While the data suggests that a majority of visitors obey the posted time limits (30 minutes and 1hr), there are a fair percentage of users that occupy parking spaces for longer than posted time restrictions. It is likely that a portion of users that exceed the posted time limit could be attributed to those requiring accessible parking, thus skewing the results of the data collected. In North Carolina, those that park in designated spaces with an appropriate placard are not required to obey posted time limits. However, with the introduction of paid parking, those that park in designated spaces with an appropriate placard are not required to obey posted time limits, but are required to pay for the space for their entire duration. It is likely that this would reduce the average duration and increase turnover in the areas in which paid parking is implemented.

Table 3.5 – Downtown Duration

Facility	0-1 hour	1-2 hours	2-3 hours	3-4 hours	4-5 hours	5-6 hours	Total
West Main Street	113	26	6	0	1	5	151
Chapel Hill Street	70	13	2	0	0	1	86
Total Observations	183	39	8	0	1	6	237
Percent	77%	16%	3%	0%	1%	3%	100%

Turnover

Turnover data was collected for the same on-street spaces as described in the previous section. Turnover — defined as the total number of vehicles per space over a given time period — should be reviewed in conjunction with duration and occupancy to obtain a more complete and comprehensive understanding of the observed parking situation. Depending on the use, high or low turnover rates can be observed as good or bad. For example, in an employee parking area, one would expect low turnover rates, as vehicles are usually parked for long periods of time. Conversely, convenient customer parking spaces, such as those spaces observed in the Downtown study area, typically experience high turnover rates. In general, turnover rates can be influenced by many factors, including time restrictions, price, enforcement, land use, and location.

The average turnover is calculated by dividing the total number of vehicles observed within the data collection window of 10:00 AM – 4:00 PM divided by the average peak hourly occupancy for each hour time frame within the data collection window. Average on-street turnover is outlined in Table 3.6.

Table 3.6 – Downtown Average Turnover (10:00 PM – 4:00 PM)

Facility	Total Spaces Observed	Average Peak Occupancy	Total Vehicles Parked	Average Turnover ² (vehicle/space)
West Main Street	46	37	148	4.05
Chapel Hill Street	29	18	85	4.72
Total	75	55	233	4.24

Analyzing the data slightly differently, one can determine the number of vehicles that turnover each hour within the area that was observed. Table 3.7 does this by outlining the number of vehicles that vacated their parking space between the given hour time period and the preceding hour time period. The 10:00 AM – 11:00 AM time frame is left blank, because data collection started within the 10-o'clock hour; therefore, data from the preceding time period is unavailable.

Table 3.7 – Downtown Hourly Turnover

Facility	10 – 11 AM	11 AM – 12 PM	12 – 1 PM	1 – 2 PM	2 - 3 PM	3 – 4 PM
West Main Street	-	16	20	26	34	23
Chapel Hill Street	-	8	14	13	21	12
Total	-	24	34	39	55	35

As shown in the table, at least 32% of on-street spaces (24 spaces) turnover each hour out of the 75 that were observed, with turnover increasing to over 70% of on-street spaces (55 spaces) towards the end of the observation period.

Finally, turnover data can be used to determine the average length of stay for those that visit the area observed. Average length of stay can be calculated by dividing the average turnover into the length of time in which data was collected (six hours). This is presented in Table 3.8.

² Average turnover over the 6 hour data collection period.

Table 3.8 – Downtown Average Length of Stay

Facility	Average Turnover (vehicle/space)	Duration of Data Collection (hours)	Average Length of Stay (hours)
West Main Street	4.05	6	1.48
Chapel Hill Street	4.72	6	1.27
Total	4.24	6	1.42

As previously noted, the time restriction limits for the on-street spaces where turnover data was collected is either 30 minutes or one hour. Comparing these restrictions to the average length of stay in the previous table suggests that the maximum time restriction for the on-street spaces is exceeded by approximately 25 minutes (0.42 hours). Similarly to duration, the average length of stay could be skewed as a result of those occupying accessible parking stalls for times that exceed the posted limits. Introduction of paid parking could result in a decrease in average length of stay, as those that occupy an accessible space for longer than the posted time limit would be required to pay for the time in which they occupy the space. This could prove to be cost prohibitive for those that take advantage of the current system.

It is evident from the duration, turnover, and length of stay data that posted time limits are violated by many that park Downtown. It is important that the City be consistent and intentional with enforcement of parking restrictions to encourage a Downtown environment that is vibrant. Furthermore, should paid on-street parking be implemented, the inability to enforce parking restrictions and encourage high turnover and reasonable lengths of stay, will result in a loss of revenue directly related to fees charged for parking.

4 | Public Involvement

Many times parking recommendations rely solely on occupancy, duration, and turnover data that is collected, as well as parking demand that is projected into the future. This strict quantitative approach is beneficial for developing recommendations to improve parking in a study area. However, what is missing from this approach is the qualitative input from actual users of the system. In an effort to gather this qualitative input, a multi-tiered approach for the Downtown study area was implemented that included development of a Parking Study Team, reaching out to and seeking input from stakeholders within the study area, and conducting an online survey to gather responses from a larger population, including visitors, employees, business owners, and residents. The following sections describe each.

Parking Study Team

Working closely with the KHA team, the Parking Study Team (PST) was appointed by the City Project Manager, Harmon Crutchfield, and was intended to include a variety of City interests, as well as County and community development representatives. The intent of the PST is to be involved at several steps throughout the parking study process to ensure that appropriate items of interest are accounted for and addressed in the study. The PST also serves as a sounding board for recommendations that are being considered by the KHA team throughout the study. Lastly, the PST provides input on the list of stakeholders within the study area that should be included in the project outreach efforts. The PST for this project included the following:

- Harmon Crutchfield – City of Durham Department of Transportation, PST Chair
- Mark Ahrendsen – City of Durham Department of Transportation
- Aaron Cain – Durham City-County Planning Department
- Sara Young – Durham City-County Planning Department
- Joy Mickle-Walker – Office of Economic and Workforce Development
- Glen Whisler – Durham County Engineer
- Richard Polley – Blackwell Street Management Company, LLC (American Tobacco Campus)
- Bill Kalkhof – Downtown Durham, Inc.

Throughout the project, four PST meetings were held to ensure that the project was progressing effectively and in a manner in which the needs of the City were met. A brief description of each meeting is provided below.

- Parking Study Team Meeting #1
 - This meeting was held after data collection efforts and was used to present initial findings and critical issues within the Ninth Street study area, with minor discussion on data collected within the Downtown study area. Initial recommendations for the Ninth Street study area also were discussed.
- Parking Study Team Meeting #2
 - This meeting was held a couple weeks following PST Meeting #1 and was used to present initial findings and critical issues within the Downtown Study area. Initial recommendations for the Downtown study area also were discussed.

- Parking Study Team Meeting #3
 - This meeting was held several weeks after PST Meeting #2 and was used to present a draft version of the parking study report for the Ninth Street study area, along with the associated recommendations for parking improvements. In addition, a more detailed discussion was held regarding recommendations for the Downtown study area.
- Parking Study Team Meeting #4
 - This meeting was held several weeks after PST Meeting #3 and was used to present a finalized parking study report for the Ninth Street study area, as well as a draft version of the parking study report for the Downtown study area, along with the associated recommendations for parking improvements.

Stakeholder Outreach

A series of stakeholder input sessions were held in September 2012. The stakeholders included in the sessions were a result of recommendations from the PST and were comprised of different stakeholders for both the Ninth Street and Downtown study areas. Downtown study area stakeholders included restaurant owners, retail owners, service providers, large tenants, property owners, and residents. Many questions were asked of each stakeholder, including the following:

- What is your role in the study area?
- During peak hours, how many employees work at your business and where do they park (if applicable)?
- During peak hours, how many customers do you estimate frequent your business and where do you believe they park (if applicable)?
- What do you like about current parking management practices? What could be improved?
- If you were in charge, what would you do about parking in downtown?
- How is the current parking program perceived by the community?
- What do you believe the City of Durham could learn from parking strategies seen in other locations?
- What do you consider to be a reasonable fee for parking on- and off-street?
- Do you have other parking related comments that you would like to communicate?

The responses to the above questions are compiled and shown in Table 4.1.

Table 4.1 – Downtown Stakeholder Input Summary Matrix

Role	Where do employees park?	Where do Customers Park?	Estimate of Peak Customers	What could current system do better?	What could be learned from other areas?	Other Comments	What do you consider a reasonable fee for parking?
Business Owner	N/A	N/A	N/A	Add parking capacity	Portland, OR. Free parking to increase visitor demand.	Parking is functional now, but may be problems in future. Build parking deck with retail on first floor, apartments above or wrapped around garage. Potential public/private partnership with City.	\$1.00/hour
Restaurant Owner	Encourage employees to walk, bike or take transit. 34 employees in 2 shifts	Encourage them to park in Chapel Hill Street Deck	400 - 500 on a Friday night	Add off street capacity. Increase security in decks.	Pay stations; pay by cell. No meters.	Free parking at 6:00 PM instead of 7:00 PM. City vehicles parked in prime spots in deck, should be on upper level. Need better wayfinding. Encourage off-street parking over on-street parking	\$0.75/hour off-street \$1.00/hour on-street
Business Owner	13 employees - no enforcement on Foster Street	On-street	6/day	Add capacity	Burlington, NC. Lots of off-street capacity.	Less aggressive enforcement within downtown loop. If there is a fee for parking, provide first 10 minutes free. Something needs to be done. Present situation is a deterrent to people coming downtown.	\$0.50 - 1.00/hour Policy should encourage off-street parking.
Entertainment Venue	7 - 8 employees, no issues with parking	On-site. They have an 80 space lot. There are 600 spaces in the Central Park neighborhood	500 people	Consistent signing for visitors. People don't know where to park.	Carrboro, NC - terrible. Raleigh, NC - no problems	Designate parking spaces on Rigsbee Street. Extend Bull City Connector to this area. Parking should be free. They charge \$3 for parking, but then provide \$3 credit. The businesses in the area have identified 600 parking spaces in the area.	\$2.00 - 3.00/hour
Retail business owner	No off-street parking 7 employees	On-street	400 people on Saturday morning	Add more capacity	N/A	Current system is frustrating. Starting to impact business. Fee for on-street parking will not fly. Add decks. They need on-street spaces to load customer purchases.	\$1.00 - 2.00/hour
Restaurant Owner	5 employees - park anywhere they can	On-street. After 6 pm park in Social Services lot and Sheriff's lot and hope they don't get towed	60	More parking capacity. Make a safe environment for parking downtown.	Greensboro, NC - off-street lots with pay stations	Could County deck on Roxboro Street be open to public? People are afraid of getting a parking ticket. Supports a fee for parking if it accepts credit cards. Single biggest complaint of customers is parking. Could Bull City Connector run on 10 minute headways during lunch?	\$1.00/hour, maybe more for on-street.
Entertainment Venue	50 employees + 30 volunteers; 1,000 seat concert hall, 350 seat theatre seating	Center City Deck; off-street	N/A	Improve egress from deck. Improve wayfinding to deck, parking guidance system	Improved parking guidance system	Charge \$2.00 per event. Do not want to increase fees. Only one entrance to Center City deck is open. Street closures needed for bus parking for special events	N/A
Farmer's Market	55 vendors	Durham Center Lot, Measurements, Inc. lot, On-street, "Parking is a free for all."	3,000 visitors per week; 300 - 500 on site at peak	Better signing to utilize existing deck. More parking decks	Parking meters, pay stations	Need more handicapped parking on-street. Inadequate parking supply. People complain. Better signing. The Farmers Market would like to expand and increase the number of vendors.	\$0.25 - 0.50/hour
Downtown Business owner and resident	4 employees - park in Corcoran Street Lot	On-street, or Corcoran Street lot	1 - 2 visitors	Better wayfinding to existing parking. Consistent hours and operations at all decks	Greenville, SC - one large downtown deck. Free parking after 6:00 PM.	There are a lot of options for parking downtown. Problem is people don't know the options. Nice that on-street parking is free. Need better wayfinding.	\$1.00/hour

Table 4.1 – Downtown Stakeholder Input Summary Matrix (continued)

Role	Where do employees park?	Where do Customers Park?	Estimate of Peak Customers	What could current system do better?	What could be learned from other areas?	Other Comments	What do you consider a reasonable fee for parking?
Business Owner	7 employees. No issues with parking. Parking is available on site	In their lot or on street. They lease space to a yoga studio.	50 for yoga	Mark spaces on-street for parallel parking. Establish parking requirements for restaurants in the overlay district	American Tobacco. Lots of free parking.	Explore the idea of angled parking along Foster Street for Farmer's Market. Sidewalk improvements are needed. "All over" the idea of pay-by-cell technology.	Not the amount, it's the length of time.
Convention Center	50 employees. Everyone is on their own. Part-time and hourly staff park on street.	Majority park in the Centre Deck; some park on street.	3,300	Additional staff at parking deck to help during ingress and egress. Two hour instead of one hour limits near Convention Center.	Maintain equipment. Add the ability to pay with credit cards.	Like the existing management company. Current system is managed well. More parking is needed. The convention center has no dedicated parking. More spaces needed downtown for visitors. If the convention center has more than 50 cars, a \$2.00 parking fee goes into effect.	\$0.50/hour on-street \$1.50/hour for off-street
Restaurant Owner	30 employees. Employees park in Church Street deck. On days with special events, they cannot find parking.	On-street or valet. Have had problems with the City ticketing cars in the designated on-street valet space. Spending \$1,500 per month on valet.	300 on a weekend night	Enforcement is inconsistent. Need more centrally located capacity.	N/A	Event parking is the biggest detractor to business. At times, Main Street is blocked off for staging on other streets and there is no activity on Main Street and customers can't get to my business. Revenue down 50% last weekend because of an event. Time limits are reasonable, but enforcement is militant. In favor of a fee based parking system. Existing system is not set up for night time activities. It is set up for day time.	\$0.25 - 0.50/hour
Business Owner	No problems with employee parking	On-street or at off-street paid lot across street. Visitors pay \$3.00 to park and we provide \$3.00 credit.	200	No public parking resources. Parking policies are not aligned with area goals.	Pay stations work well in Chapel Hill and Raleigh. May not work in Central Park.	Parking in area is safe. Problems are going to get worse. Parking solutions take time to implement. Existing "No Parking" restrictions seem erratic. Why is there parking restricted on Madison Avenue? Current parking condition restricts ability to grow. It is a pain to park in Chapel Hill. Parking should not be punitive.	\$0.50 – 1.00/hour
Arts Council	Full-time employees park in Durham Centre Deck.	Evening parking in Durham Centre Deck or South Bank Lot	500 - 750 at peak	There is not enough parking. What is Greenfire going to do with South Bank Lot? Expand parking limits to 2 hours.	N/A	Consider going to a fee for parking. Free is good, but there is probably a lot of abuse. Observe a lot of abuse of handicapped parking. New developments should be required to provide their own parking, not parking in existing structures. There is enough existing demand. Do not charge too much for special events. \$2.00 rate is good. \$5.00 is too much.	N/A
Business Owner	Employees park on site. Though they are losing this parking due to expansion.	On-street, parking decks, South Bank Lot	100	Implement a fee for parking.	All growing cities deal with parking.	Difficult to find parking. The old bus station lot is unused. Could this lot be used for a small fee? Can the Southbank parking lot be used after hours?	\$1.00/hour

While a lot of good feedback was provided and documented in the stakeholder input table, the following items summarize some of the comment responses/themes that were communicated, specific to the Downtown study area:

- The majority of employers do not feel that employee parking is a concern or do not know where their employees park, while some shared that a portion of their employees park on-street.
- Employers shared that their customers split parking between on-street and off-street facilities, with no real dedicated parking for their business.
- The majority of stakeholders believe that there is a lack of parking supply within the study area to meet their needs.
- Several stakeholders believe that an insufficient sense of security within the study area is an issue.
- Wayfinding was an area of concern for many stakeholders that feel current signage does not adequately guide visitors to available parking.
- The majority of stakeholders would support an on-street paid parking program within the more developed areas within the study area. Paid on-street parking within Central Park was identified as an area of concern to several stakeholders.
- The average reasonable price for parking was thought to be around \$1.00/hour.

Online Survey

Along with the Parking Study Team and the Stakeholder Outreach sessions, an additional outreach component of this study was to solicit public opinions on current and future parking management decisions. Two surveys were created to identify the decision-making factors that determine why and where people park and how parking management can influence parking behaviors and decisions. The survey objectives were to:

- Understand the relationship between business owner perceptions and experiences about the role of parking in customer decisions, versus customer perceptions and behavior
- Identify key factors associated with customer parking decisions
- Understand existing customer parking experience
- Identify what customers and businesses would like to improve about the parking experience in the downtown Durham study area

Business Owner Survey

The business owner survey included general questions about the type and location of business and peak hours of operation. These questions were generated to establish parameters necessary for comparing responses and determining location and business specific needs. The remainder of the survey focused on parking needs that are perceived as required for business operation. These questions asked business owners to consider aspects of customer parking needs and whether the relationship between these needs and parking has impacted their business. The questions in the survey aimed to gather the following information from the respondents:

- Type of business
- Typical and peak hours of operation
- Customer trip and parking information

- Employee trip and parking information
- Preference for parking provided (e.g., convenience versus availability versus cost)
- Perception of current downtown parking rates
- Perception of common parking issues
- Opinion on types of potential parking improvements

Visitor/Employee/Resident Survey

The other survey was focused towards visitors of the study area, as well as those that work and/or live within downtown Durham. The survey included general questions about the frequency and mode (personal vehicle, transit, bike, etc) of downtown trips. Additional questions addressed the parking decision-making process, with emphasis on current parking operations, as well as theoretical scenarios of implementation of a paid on-street parking program. The questions were designed to get participants to think about what characteristic of parking is more important to them – price versus location. The questions in the survey aimed to gather the following information from the respondents:

- Reason for visiting downtown Durham and familiarity with City
- Mode of transportation for getting downtown (personal vehicle, transit, bike, walk)
- Parking characteristics (e.g., day of week, time of day, duration, cost)
- Preference for parking provided (e.g., convenience versus availability versus cost)
- Perception of current parking programs
- Opinion on types of potential parking improvements

Both surveys were administered using SurveyMonkey, an online survey tool that enables fluid design, administration, and analysis. The survey link was distributed through email lists by both Downtown Durham, Inc. and the City-County Planning Department. In addition, dual-sided business cards were printed with a QR code that could be scanned by smartphones, directing the participant to the survey website. Also included on the business cards was contact information to a member on the consultant team so questions or troubleshooting could be addressed, providing a means to maximize participation. These business cards were provided to the City and were distributed to PST members and parking enforcement officers for further distribution to patrons of downtown Durham.

DURHAM P SURVEY

DURHAM
1869
CITY OF MEDICINE

Help us improve **PARKING** in the City of Durham by taking a few minutes to complete the survey.

DURHAM PARKING STUDY

714.705.1320
chris.iser@kimley-horn.com

QUESTIONS? Contact Chris Iser

Using your **Smartphone**, scan the barcode on the left to retrieve the survey.

or Visit us at <https://www.surveymonkey.com/s/DowntownDurhamParkingStudy>

<http://durhamnc.gov>

Kimley-Horn and Associates, Inc.

Online Survey Results

A total of 839 responses to the survey were collected, of which ~5% represented business owners, with the remainder categorized as visitor/employee/resident. The responses provided from these groups were analyzed and used to help guide recommendations that were developed. Summarized key findings are listed below.

- ~67% of business owner respondents believe customers need to park for less than 2 hours
- ~87% of business owner respondents believe lunchtime represents the peak hours of operation
- On-street parking is heavily relied upon by business owners for both employees and customers
 - ~48% of employee respondents park on-street
 - ~70% of employee respondents require parking for 6-10 hours
 - Result is a significant use of on-street resources for employee use
- Business owner respondents and visitor respondents are most interested in the following items in order:
 - Ability to find available parking
 - Cost of parking
 - Distance from parking to destination
- Business owner respondents want to see better wayfinding, use of technology, and more parking
 - Better wayfinding + technology = increase in perceived parking supply
- Most visitor/employee/resident respondents are familiar with downtown, being drawn by entertainment, dining, and special events
- ~77% of visitor/employee/resident respondents find parking within a 2 block radius of their destination
- On-street parking is preferred and utilized more by visitor/employee/resident respondents
- Visitor/employee/residents typically require parking in the evening hours
- ~66% of visitor/employee/resident respondents require parking for less than 3 hours, generally without moving their car

5 | Parking Demand

As part of the City of Durham Downtown Parking Study, Kimley-Horn and Associates developed a unique parking analysis tool, Park+, which is intended to allow the City to measure how changes in land use, parking, trip distribution, parking price, and management strategies affect the demands of parking. The following section describes the Park+ modeling application for the Downtown Durham area.

Introduction

The Park+ Model is largely modeled after traditional supply and demand evaluations, which includes a multi-step process for evaluating parking demand conditions for a development, community, or campus. The multi-step process typically includes gathering data, defining assumptions or characteristics, selecting generation rates, applying reduction factors, creating scenarios, and evaluating results.

The Park+ Model allows the user to consolidate gathered data, define assumptions and characteristics through a user friendly interface, develop unique generation factors through the Park+ Proximity Parking Approach, apply reduction factors related to multi-modal and demand management assumptions, create and run scenarios using the model's predictive gravity modeling algorithm, and evaluate the results on multiple levels using Park+ selection sets that can drill down from the study area level to a specific block, node, or intersection.

The Park+ Model is built on the principle of proximity parking, which assumes that parking demands are generally handled within a specific walking radius (as defined by the individual user) of a demand generator. This methodology is founded on the relationship between walking distance, price, attractiveness of facility, and general user decision making. The result of this methodology is localized parking generation rates that are predictive of actual demand conditions, which are representative of realistic parking generation characteristics for individual land uses throughout the specified study area.

This principle of proximity parking is used in both the initial calibration process as well as the predictive allocation process, which defines how many people need to park and where they want park. While the general methodology of the Park+ Model follows traditional shared use parking generation concepts, it differs from how generation rates are calculated.

The Park+ Model includes a predictive gravity demand modeling algorithm that allocates projected parking demand to adjacent parking facilities based on walking distance, price, and general attractiveness of each facility. The gravity modeling algorithm used in this model was developed specifically for the applications found in Park+. The algorithm uses the range of walking distances, price, and facility types in the model to define localized scores related to each facility and land use pair. These scores are then used to define the percentage of parking demand allocated to each parking facility, up to a user specified maximum occupancy percentage, which is defined as one of the user inputs to reflect the perceived effective capacity conditions within each Park+ community or campus.

The outputs of the Park+ Model include parking demand, parking supply, general surplus or deficit, met demand, latent (unmet) demand, and traditional parking demand required. The parking demand metric is a summary of the demand generated for the entire study area (or for the selection area). The parking supply metric is a summary of the parking capacity for the entire study area (or the selection area). The surplus or deficit metric is simply the difference between the demand and supply metrics for the given area. The met demand metric describes the amount of parking demand that is actually allocated using the proximity parking methodology, within the study area or for a given selection area. The latent demand represents the amount of demand that is not met within each localized walking radius defined within the model. While the overall supply and demand may be met within a given scenario, there may still be localized deficiencies within specific areas of the model – latent demand captures and identifies these areas.

The outputs from Park+ can be evaluated for the entire study area or for a smaller subset, which can define localized demands at the zone, block, node, or intersection level. The benefit of this analysis tool is that it allows the Park+ Model to be free from zonal boundaries, allowing the user to define analysis areas as various development plans or master planned scenarios are evaluated.

Study Area

The study area for the Downtown Durham Park+ modeling efforts is shown below. The model includes the core downtown areas, including the Downtown Loop and City Center, American Tobacco, Brightleaf Square, Central Park, as well as fringe and surrounding areas. The study area includes³:

- 1,018 apartment units
- 760,000 square feet of retail space
- 3,260,000 square feet of office space (general, government, and medical)
- 15,581 parking spaces, including 1,505 on-street and 14,076 off-street spaces (approximately 51% are privately owned and offer limited public use)

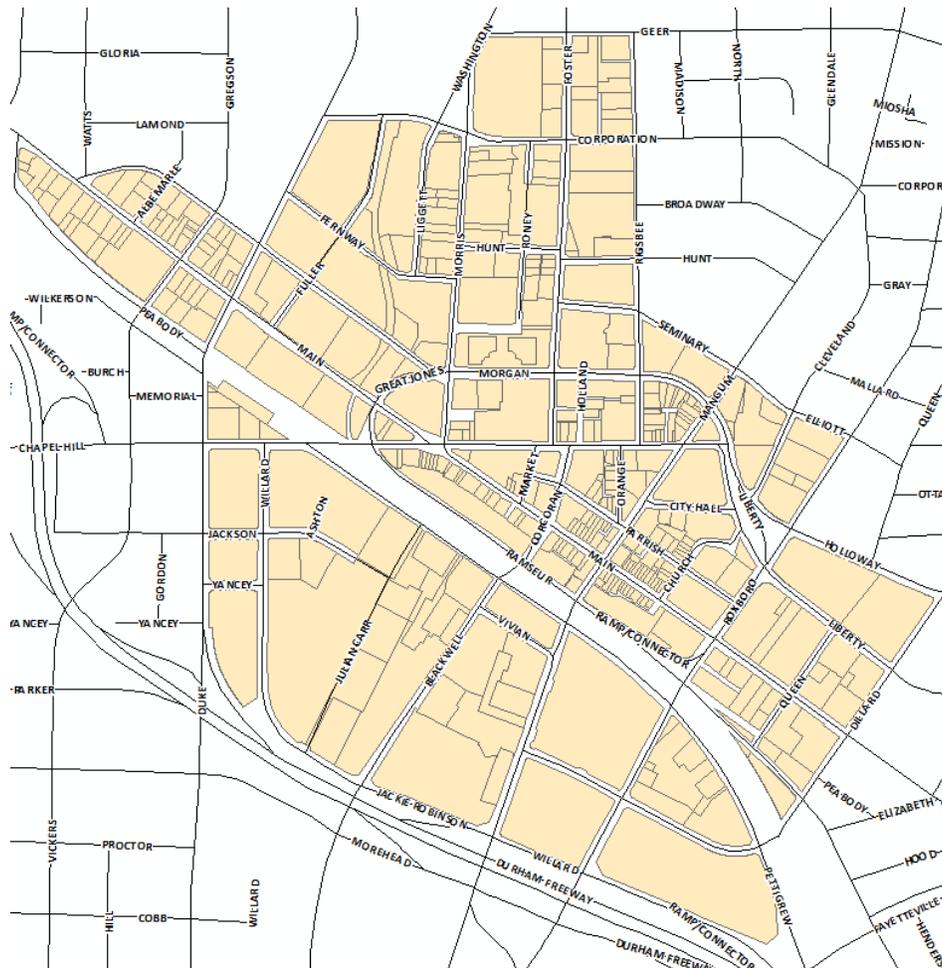


Figure 5.1 – Park+ Demand Analysis Study Area

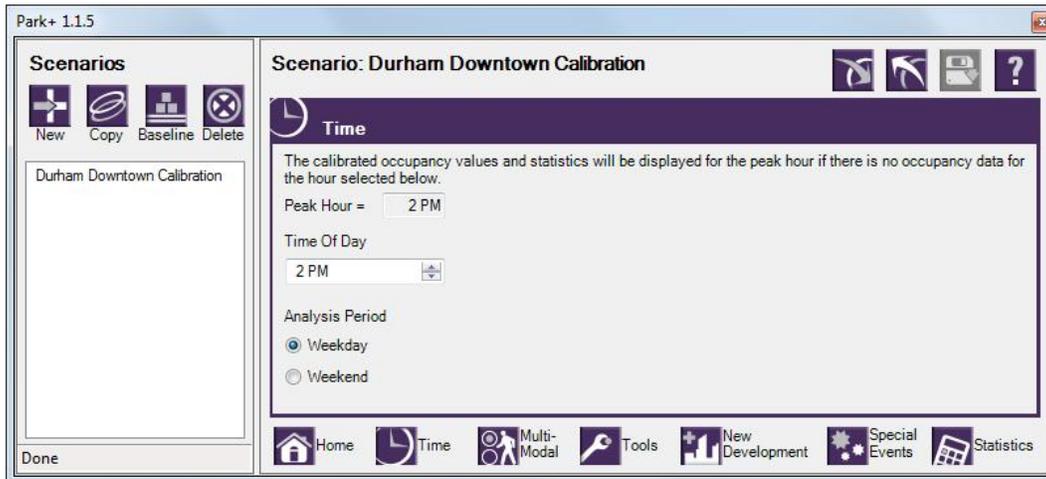
³ Land use information was derived from City of Durham parcel information, provided by the City. The parcel information includes land use category, square footage, dwelling units, and other descriptive information. Vacant buildings and parcels are indicated in the ArcGIS data and help to define actual vacancy and utilization patterns within the study area. The only modifications made to the existing parcel shapefile were the inclusion of the Diamond View III office and mixed use complex and verification of total apartment dwelling units. Parking inventory was based on field collected data.

Calibration Settings

The Park+ Calibration process utilizes existing parking demands (collected by the project team) to calibrate parking generation rates for each individual land use within the study area. The result is a more accurate depiction of parking generation characteristics for the study area, rather than depending on city/county code or outdated national parking generation rates reported by the Institute of Transportation Engineers (ITE) or the Urban Land Institute (ULI). The Calibration process uses the previously described parking occupancy data, land use characteristics, multi-modal characteristics, public-private parking relationships, and area specific walking tolerances to define the adjusted generation rates. The Downtown Durham specific inputs are as follows:

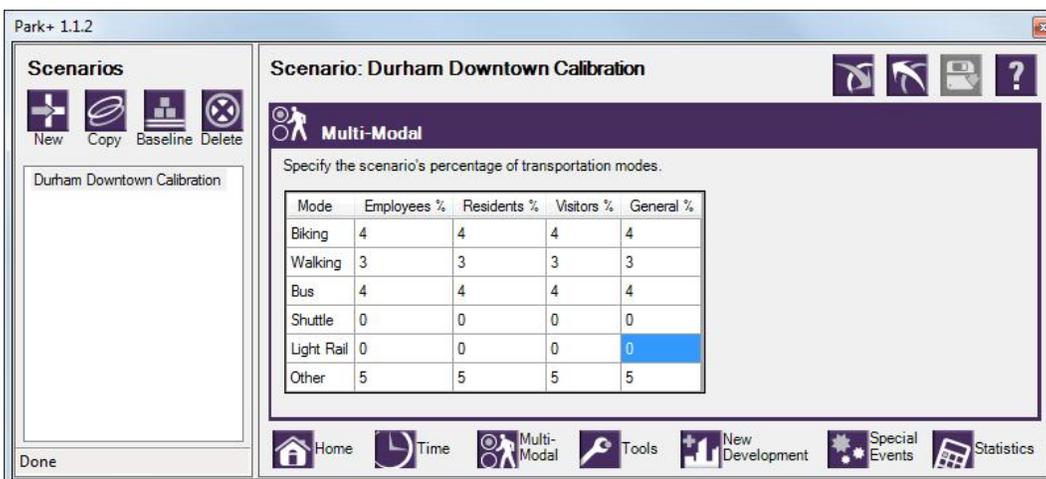
Peak Time Inputs

The following graphic provides the time-of-day specific multi-modal inputs, which were taken directly from the data collected in the field as part of the larger study. Based on the data collected, the peak hour for parking demands in the Downtown study area is 2:00 PM, which is consistent with a downtown setting with a high density of office space.



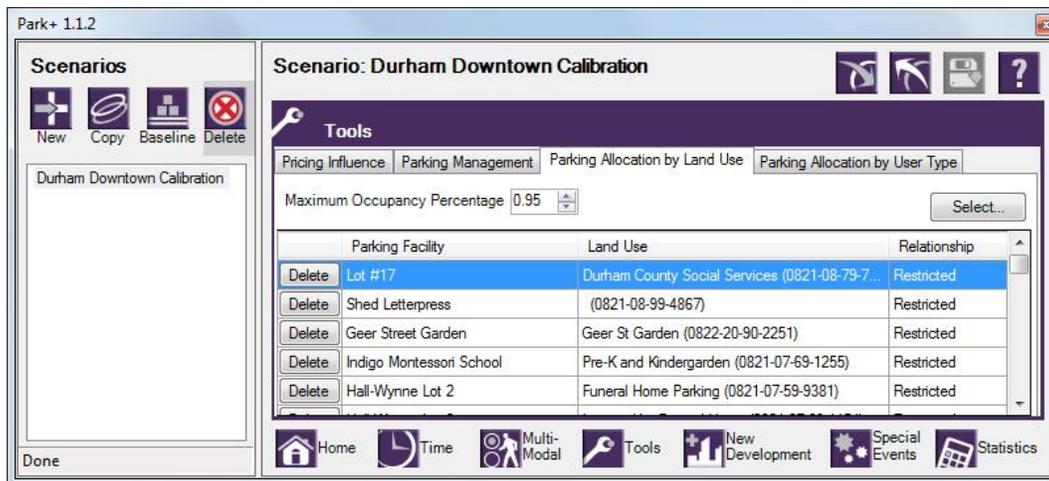
Multi-Modal Inputs

The following graphic provides the model specific multi-modal inputs, which were pulled from 2010 U.S. Census data. In the absence of more specific information, the census data was applied to all user types within the study area.



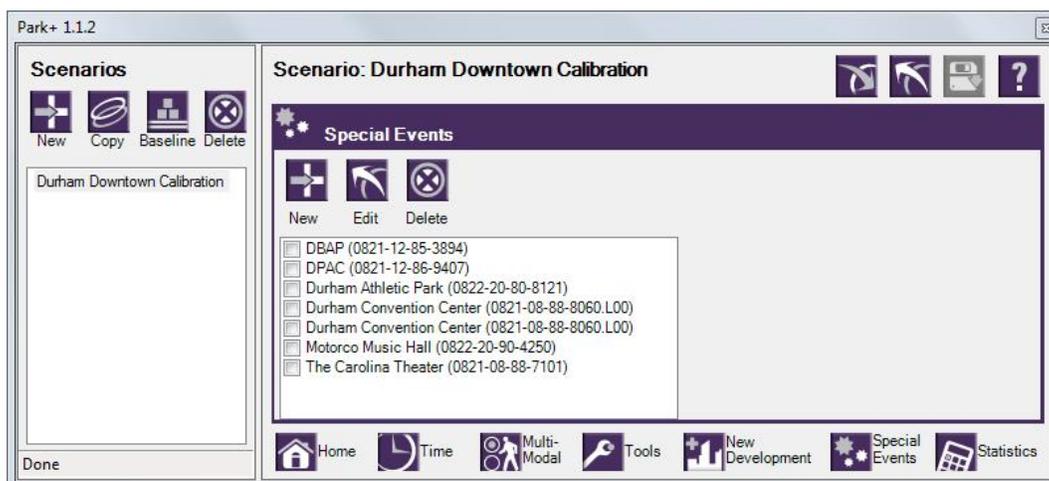
Public-Private Relationships

The following graphic provides a representation of some of the public-private parking relationships implemented in the model calibration process. These relationships represent parking that is provided solely for the benefit of a singular or small set of land uses. These specific relationships restrict the use of the parking spaces in the selected facilities to the associated land uses and their predicted demand. By setting these relationships, the model can accurately relate observed parking demands to specific uses in the study area, creating more realistic parking generation calculations during the calibration process.



Special Events

The following graphic provides a representation of the special event scenarios present in the Downtown Durham model. The special events represent existing large demand generators that occur only during special event periods. The Park+ user also has the ability to define new special events, such as parades or street festivals. The Park+ user can also evaluate combinations of events by selecting one or more of the event types below. While these events don't specifically affect the calibration process, they can be used to evaluate alternative scenarios or demand patterns.



Walking Tolerances

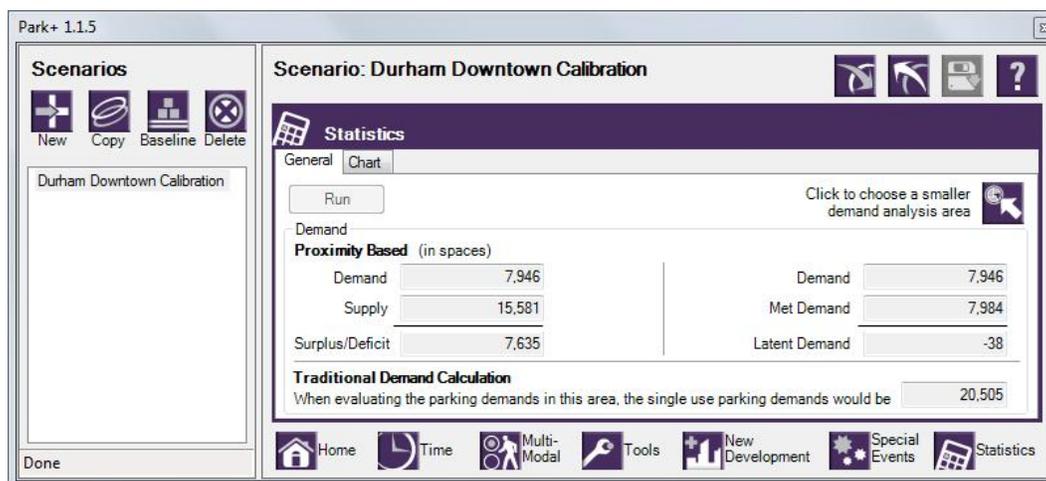
The walking tolerances within the model represent how far a parker is willing to walk from their parking space to their destination. The Park+ model defines walking tolerances for several user types, including residents, employees, visitors, and general users. The graphic to the right provides the Downtown Durham specific walking tolerances, which are based on discussions of the area with project stakeholders and a general understanding of the area user characteristics.

User Type	Walking Tolerance (ft)	Walking Tolerance (min)
Residents	1200	5
Employees	800	3.33
Visitors	500	2.08
General	600	2.5

Calibrate Cancel

Calibration Results

Based on the inputs described in the previous section, the following results were developed for the Park+ calibration process:



These results indicate that there is a 7,946 space demand for parking versus a 15,581 space supply within the study area, indicating that the study area is operating at approximately 51 percent of total supply. Additionally, the output indicates that the latent demand is -38 spaces, meaning that the study area isn't able to meet all of the demand for parking within the walking tolerances selected by the user of the model (*this is a result of combined allocations between facilities and the observed demand in the peak hour and is common for a model of this size*). Finally, the model indicates that the demand for parking when using traditional demand metrics is 20,505 spaces, meaning that the actual demand is approximately 60 percent less than demand predicted by traditional measures (in this case ITE or ULI).

Figure 5.2 shows the actual occupancy of each of the parking facilities within the study area at the approximate peak hour at 2:00 PM. This should closely resemble the data collection results because that data was used as the baseline for calibration.

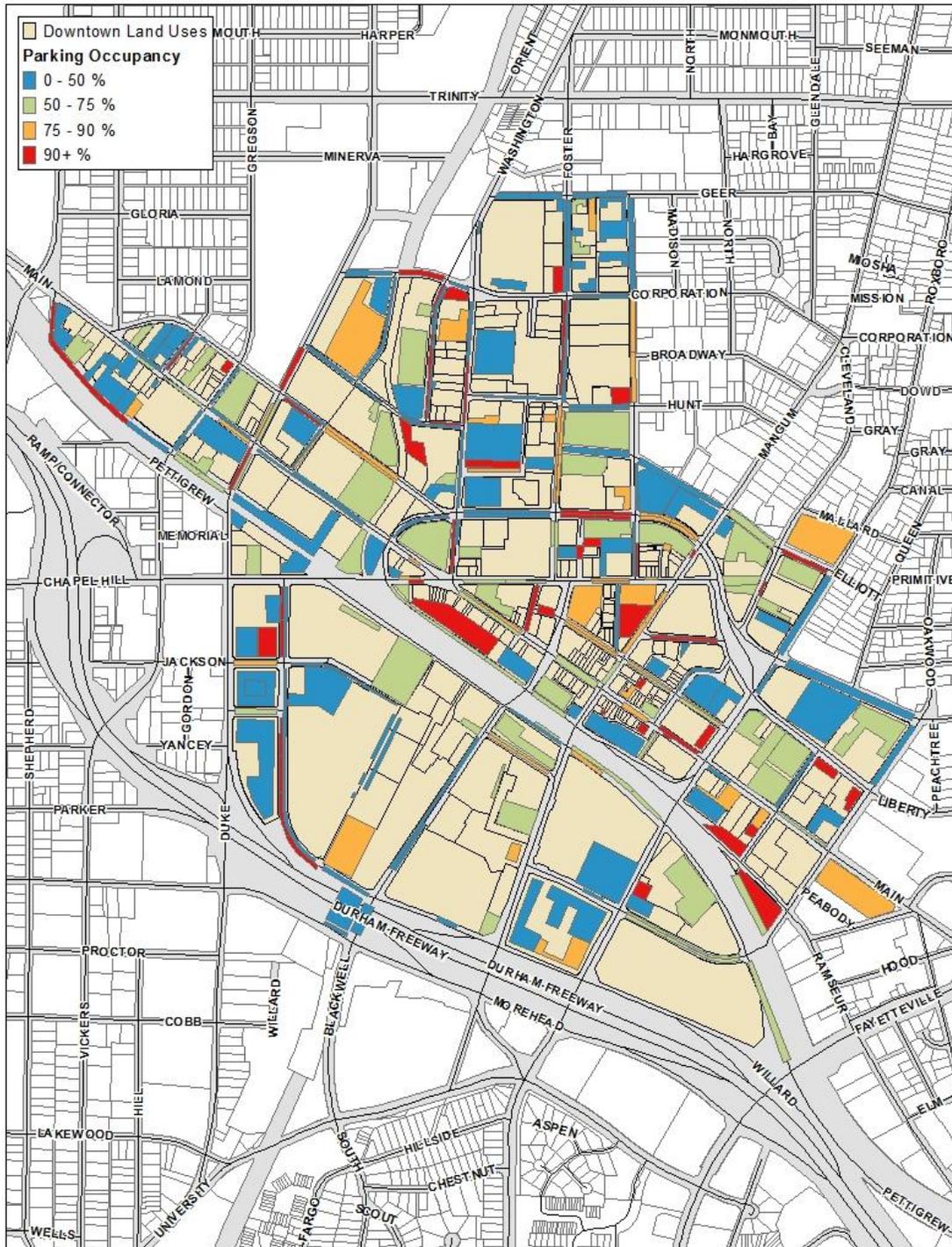


Figure 5.2 – Park+ Calibrated Parking & Land Use Dataset
(2:00 PM, approximate peak hour)

Calibrated Parking Generation Rates

One of the key outputs of the calibration process is the development of location specific parking generation rates for each land use (and consolidated land use category). Table 5.1 provides a summation of the initial weekday parking generation rates for the Downtown Durham area⁴.

Table 5.1 – Downtown Calibrated Parking Generation Rates

Land Use Category	Minimum Generation Rate	Units	Maximum Generation Rate	Average Generation Rate	Traditional Generation Rate ⁵
Apartments	0.37	spaces/unit	1.41	0.81	1.61
Auto Service	1.01	spaces/1,000 SF	6.70	2.58	4.17
Bank	0.71	spaces/1,000 SF	3.96	1.56	2.64
Church	0.28	spaces/1,000 SF	4.52	1.75	1.17
Government Office	0.25	spaces/1,000 SF	10.29	2.75	4.20
Lounge	1.77	spaces/1,000 SF	15.71	4.78	16.50
Medical Office	2.21	spaces/1,000 SF	4.38	3.01	4.50
Office	0.18	spaces/1,000 SF	14.58	1.77	3.50
Restaurant	1.53	spaces/1,000 SF	14.00	6.83	18.00
Retail	0.10	spaces/1,000 SF	9.41	0.98	2.13
Warehouse	0.15	spaces/1,000 SF	1.00	0.51	0.81

Projection Characteristics and Results

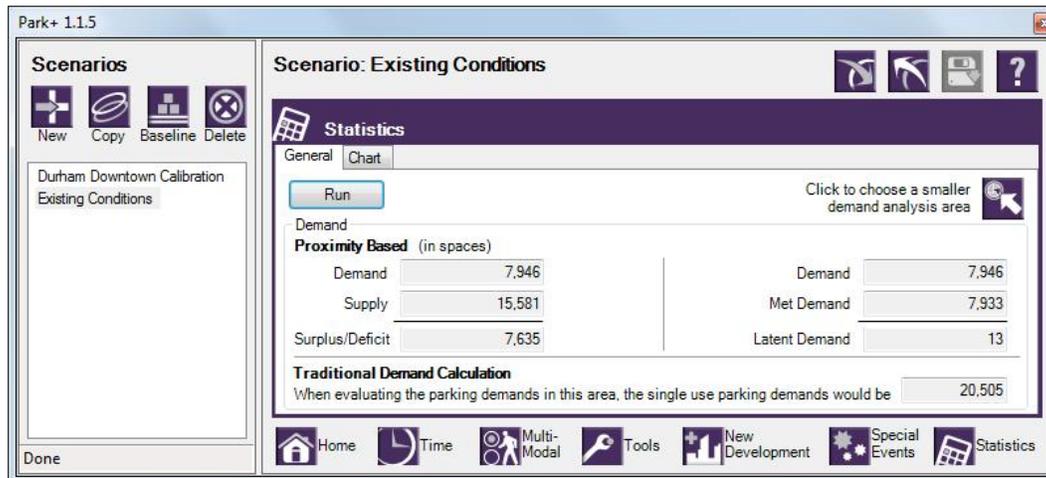
In addition to the calibration settings, the Park+ model is able to run projected conditions for the existing scenario, as well as additional scenarios. The projected conditions differ from calibration because they predict where parkers would prefer to park if given the choice – based on the relationship between walking distance, price, and attractiveness of parking.

Projection Results – Existing Conditions

The output below provides the initial existing conditions projection from the model. The results do not differ from the calibration process, because none of the inputs were changed.

⁴ The initial parking generation rates are based on the parking data collected as part of this study. The City should assimilate several iterations of data for a statistically significant sample size prior to incorporating these design characteristics into ordinance or governing documents.

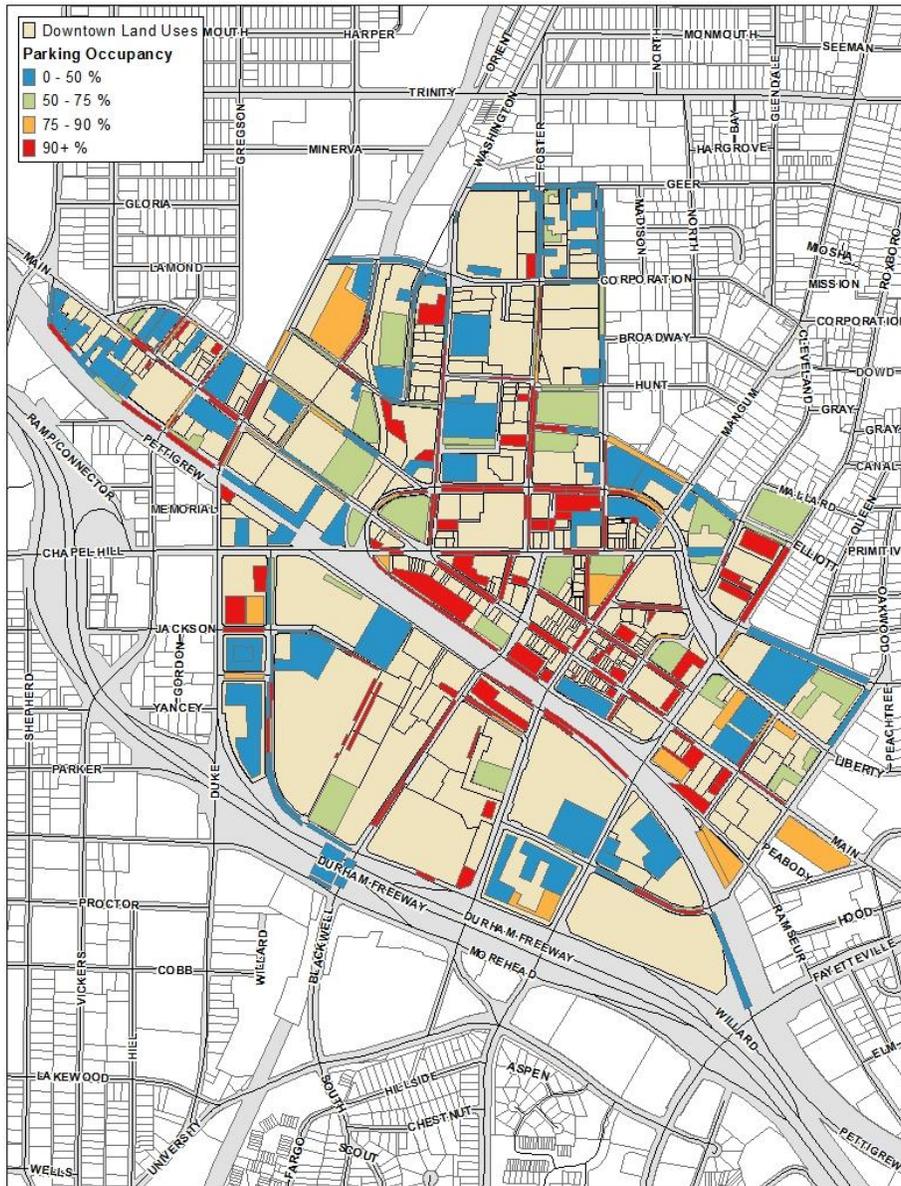
⁵ Traditional generation rate is based on either ITE Parking Generation Manual, 4th Edition, or ULI Shared Parking Manual



Just as in the calibration condition, the results indicate that there is a 7,946 space demand for parking versus a 15,581 space supply within the study area. However, unlike the calibration setting which is based on observed demands, projected parking demands were allocated based on the Park+ principles of proximity parking, using price, distance, and attractiveness to determine the overall allocation of parking. This change in operation results in a different geographic distribution of parking (within the parameters of the public-private relationships we originally set up) and the creation of a new category of latent demand.

For this scenario, the output indicates that the latent demand is 13 spaces, meaning that there are a handful of spaces of parking demand that are not able to be allocated. In this instance, the value is likely due to incremental demand that is generated by land uses and then rounded for presentation purposes in the interface above. As shown in Figure 5.3, there are no specific land uses with latent demand attributed to them.

Finally, the model indicates that the demand for parking when using traditional demand metrics is 20,505 spaces, meaning that the actual demand is approximately 60 percent less than demand predicted by traditional measures (in this case ITE or ULI).

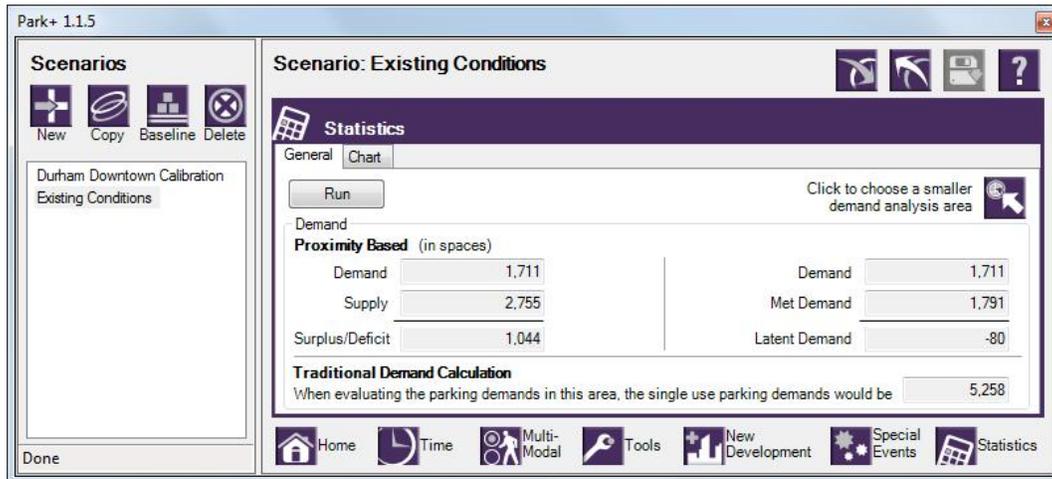


**Figure 5.3 – Park+ Existing Scenario Demand Projections
(2:00 PM, approximate peak hour)**

The parking demands projected in the previous scenario are for the full downtown study area. The Park+ model also has the capability to drill down to specific subsets within the study area, allowing the user to better understand parking demands on a localized level. The following two sections look at existing parking conditions within two of the more prominent areas in Durham, the Downtown Loop and American Tobacco.

Projected Conditions – Downtown Loop

The output below shows the specific selection area for the Downtown Loop subset. This selection area includes everything inside Morgan Street/Ramseur Street/Roxboro Street loop.



In general, the area has a 1,044 space surplus, with a total demand of 1,711 spaces versus a supply of 2,755 spaces. The 1,711 space demand represents the demand generated by the land uses within the selection boundary shown in the accompanying graphic (representing the Downtown Loop boundary). The 2,755 spaces of supply represents the physical supply of parking found within the Downtown Loop boundary.

Additionally, the latent demand results indicate that 1,791 spaces of the demand in the area is met by parking facilities within the selection area. This met demand represents the actual occupied spaces within the Downtown Loop parking facilities (the 2,755 spaces defined in the selection set). The met demand is greater than the actual demand because a number of people are utilizing the Downtown Loop parking facilities to access land uses outside of the Downtown Loop, within the user specified walking distances. The resulting value is the selection area's specific latent demand (-80 spaces), which in this case is negative because it represents parking demand that is generated outside of the selection area, within the acceptable user walking tolerances.

The results of this subset selection are shown in Figure 5.4.

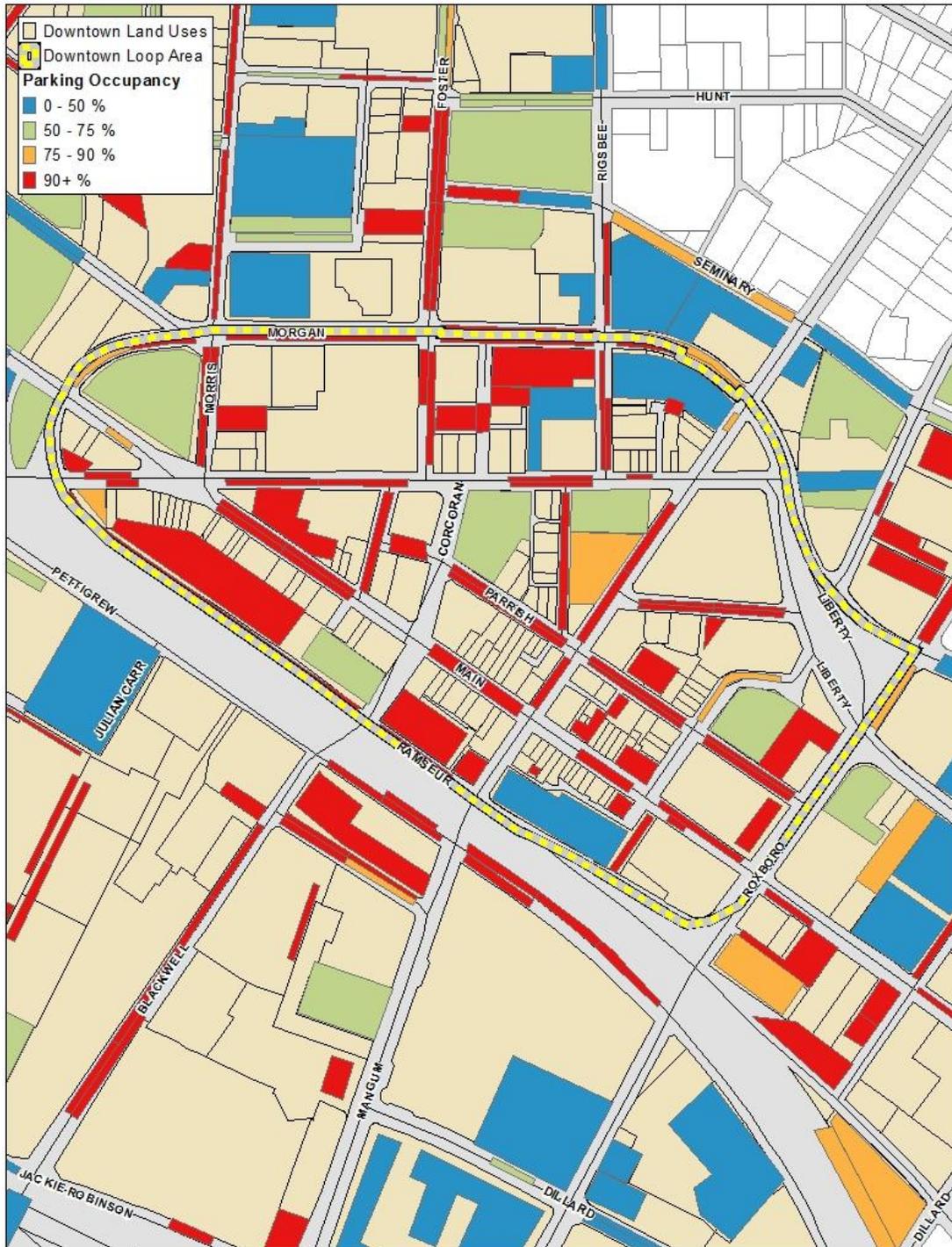
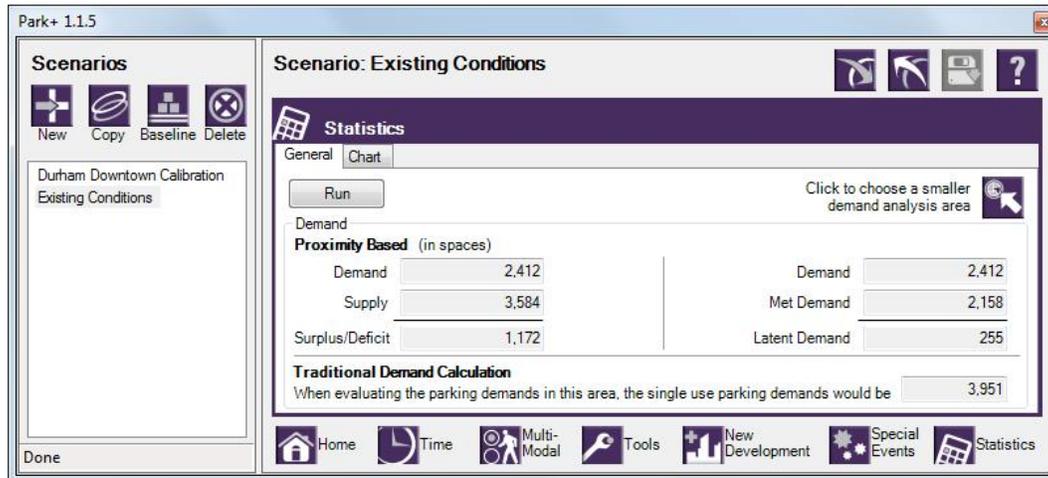


Figure 5.4 – Park+ Existing Scenario Demand Projections – Downtown Loop
(2:00 PM, approximate peak hour)

Projected Conditions – American Tobacco

The output below shows the specific selection area for the American Tobacco subset. This selection area includes everything between Willard Street, Pettigrew Street, Mangum Street, and Jackie Robinson Drive.



In general, the area has a 1,172 space surplus, with a total demand of 2,412 spaces versus a supply of 3,584 spaces. The 2,412 space demand represents the demand generated by the land uses within the selection boundary shown in the accompanying graphic (representing the American Tobacco boundary). The 3,584 spaces of supply represents the physical supply of parking found within the American Tobacco selection boundary.

Additionally, the latent demand results indicate that 2,158 spaces of the demand in the area is met by parking facilities within the selection area. This met demand represents the actual occupied spaces within the American Tobacco parking facilities (the 3,584 spaces defined in the selection set). The met demand is less than the actual demand because a number of people that wish to park in various American Tobacco parking facilities are not able to based on defined parking restrictions and the user specified walking distances. The remaining spaces within the selection area are either reserved or are not within an acceptable walking tolerance for the demand generators. The resulting value is the selection area’s specific latent demand (255 spaces), which is either met outside of the selection area, within the acceptable user walking tolerances, or not met at all.

The results of this subset selection are shown in Figure 5.5.

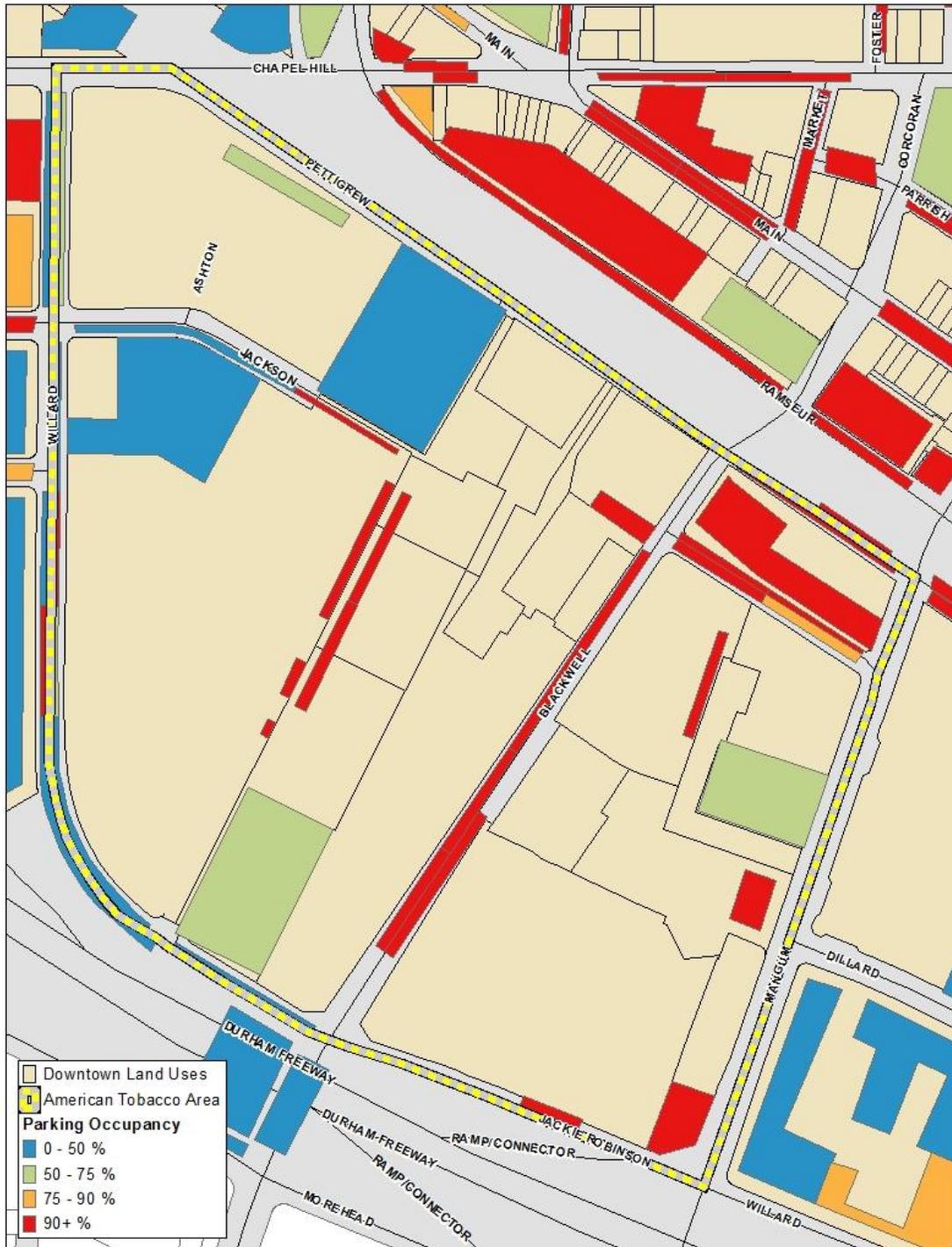


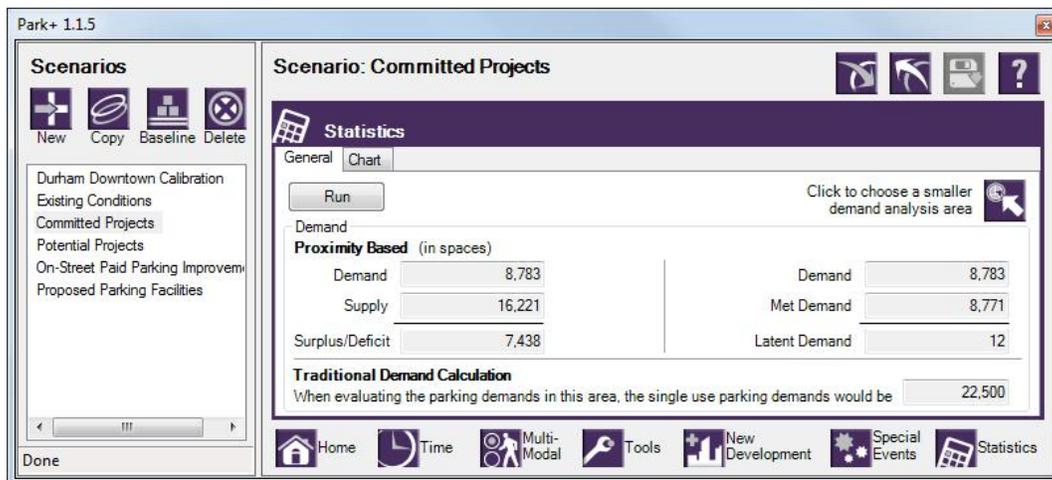
Figure 5.5 – Park+ Existing Scenario Demand Projections – American Tobacco
(2:00 PM, approximate peak hour)

Projected Conditions – Committed Projects

The next projection scenario looks at committed projects (as of October 2012) that are either under construction now or plan to be under construction within the next year in Downtown Durham. The specific projects are listed below and shown in Figure 5.6.

1. 21(c)Hotel – 125 room hotel with 8,000 square feet ground floor retail and 8,000 square feet restaurant
2. 315 E Chapel Hill – 64 room boutique hotel with 8,000 square feet ground floor retail
3. Federal Capital Partners Apartments – 190 apartments
4. New Duke Warehouses – 150,000 square feet office and lab space, maintaining the 308 on-site parking spaces
5. Greenfire/Armada Hoffer Apartments – 183 apartments and 185 parking spaces
6. Woolworth’s Site – 80 apartments with 50,000 square feet office and 20,000 square feet retail, with 200 parking spaces on-site
7. Morris Ridge Development – mixture of 230,000 square feet office, 25,000 square feet retail, and 250 apartments with 606 space parking structure

The projects also represent a reduction in 459 parking spaces throughout the study area, based on new developments at the Federal Capital, Greenfire/Armada Hoffer, and Morris Ridge sites replacing surface parking. Parking spaces (additional supply) were added for numbers 4, 5, 6, and 7 above, as noted in their descriptions.



The results indicate that there is a 8,783 space demand for parking versus a 16,221 space supply within the study area in the “Committed Projects” scenario. The total demand represents the demand generated by all land uses, including the existing land uses and the committed projects defined on the previous pages. The total supply represents the the entirety of the parking spaces found within Downtown Durham, including the existing spaces and those new spaces associated with new development.

For this scenario, the output indicates that the latent demand is 12 spaces, which is similar to the results defined in the existing conditions scenarios. The small amount of latent demand are largely caused by rounding calculations that are common for a model this size. Based on the results, the new developments can be acommodated by the adjacent parking facilities – but that is not to say that they should not have some level of parking made available on site. A detailed analysis for those uses provides the following results:

1. 21(c)Hotel – 122 spaces of demand in the peak hour, supported by adjacent parking
2. 315 E Chapel Hill – 35 spaces of demand in the peak hour, supported by adjacent parking
3. Federal Capital Partners Apartments – 104 spaces of demand in the peak hour
4. New Duke Warehouses – 181 spaces of demand housed on-site in the peak hour
5. Greenfire/Armada Hoffler Apartments – 101 spaces of demand housed on-site in the peak hour
6. Woolworth’s Site 135 spaces of demand housed on-site in the peak hour
7. Morris Ridge Development – 500 spaces of demand housed on-site in the peak hour

Finally, the model indicates that the demand for parking when using traditional demand metrics is 22,500 spaces, meaning that the actual demand is approximately 60 percent less than demand predicted by traditional measures (in this case ITE or ULI).

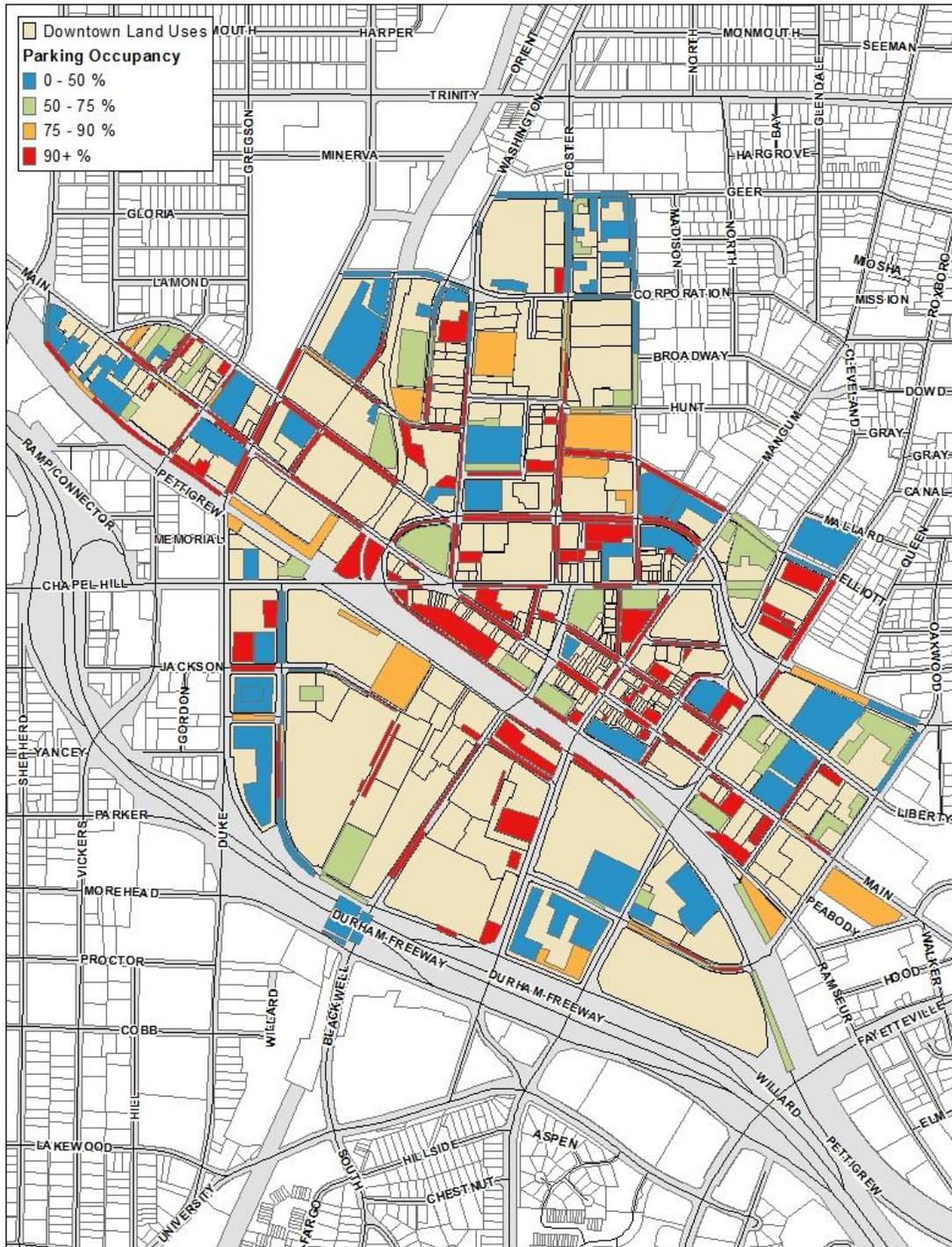
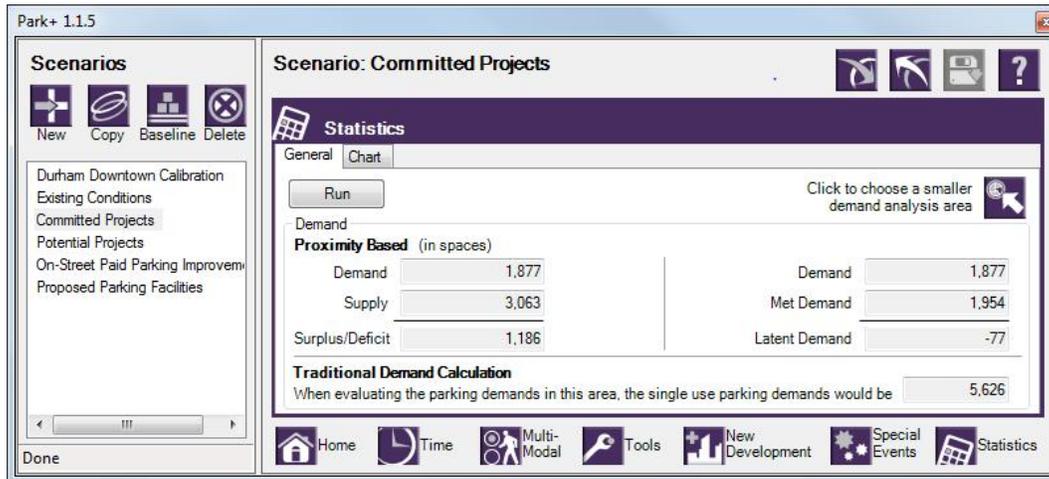


Figure 5.7 – Park+ Committed Projects Demand Projections
(2:00 PM, approximate peak hour)

Downtown Loop – Committed Projects



In general, the Downtown Loop area has a 1,186 space surplus, with a total demand of 1,877 spaces versus a supply of 3,063 spaces. The 1,877 space demand represents the demand generated by the land uses within the selection boundary shown in the accompanying graphic (representing the Downtown Loop boundary). The 3,063 spaces of supply represents the physical supply of parking found within the Downtown Loop boundary.

Additionally, the latent demand results indicate that there is a total met demand in the area of 1,954 spaces. This met demand represents the actual occupied spaces within the Downtown Loop parking facilities (the 3,063 spaces defined in the selection set). The met demand is greater than the actual demand because a number of people are utilizing the Downtown Loop parking facilities to access land uses outside of the Downtown Loop, within the user specified walking distances. This result means that 77 spaces of demand in the area come from outside of the selection area because of adjacent demand issues, affected by the new land uses from the committed projects.

The results of this subset selection are shown in Figure 5.8.

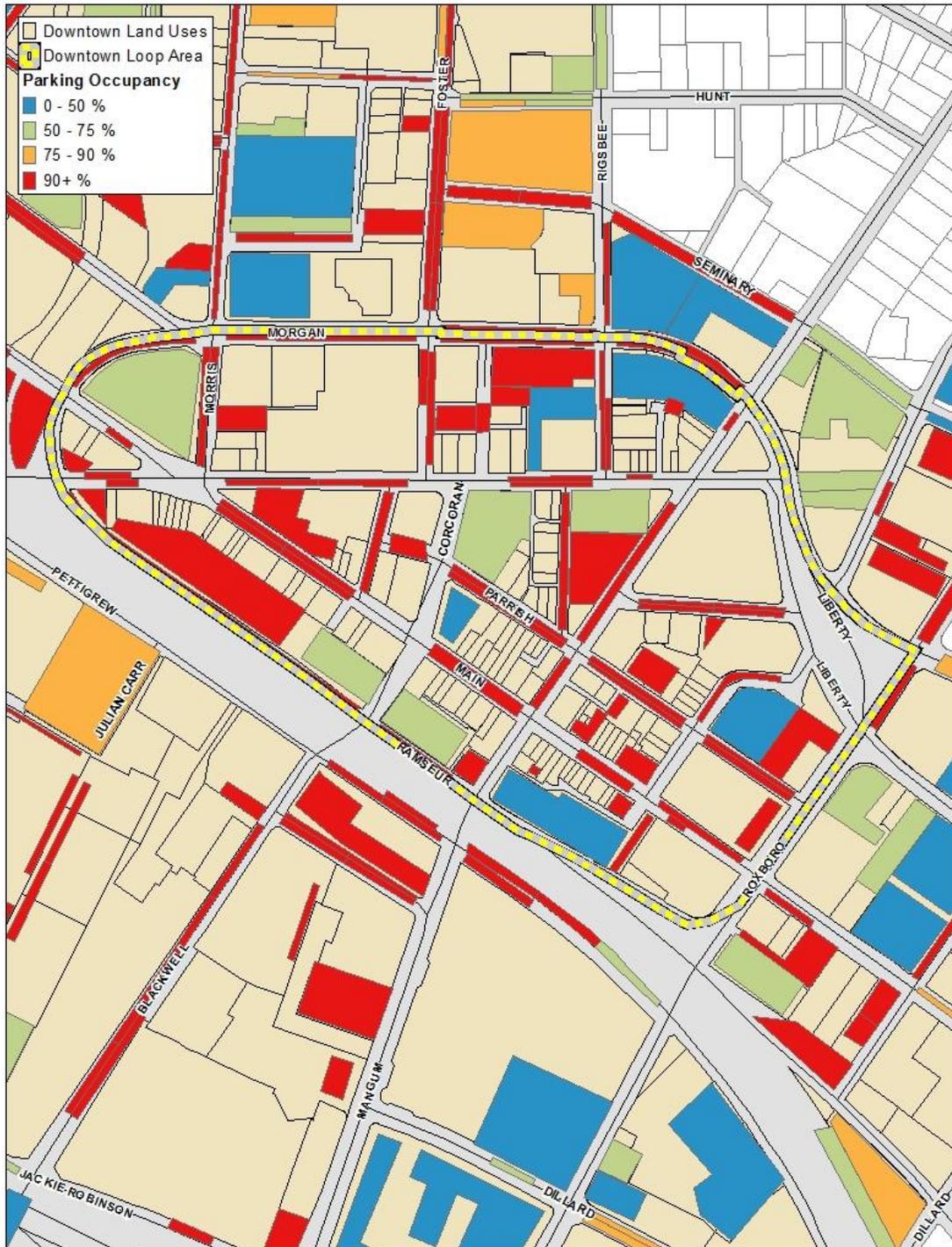
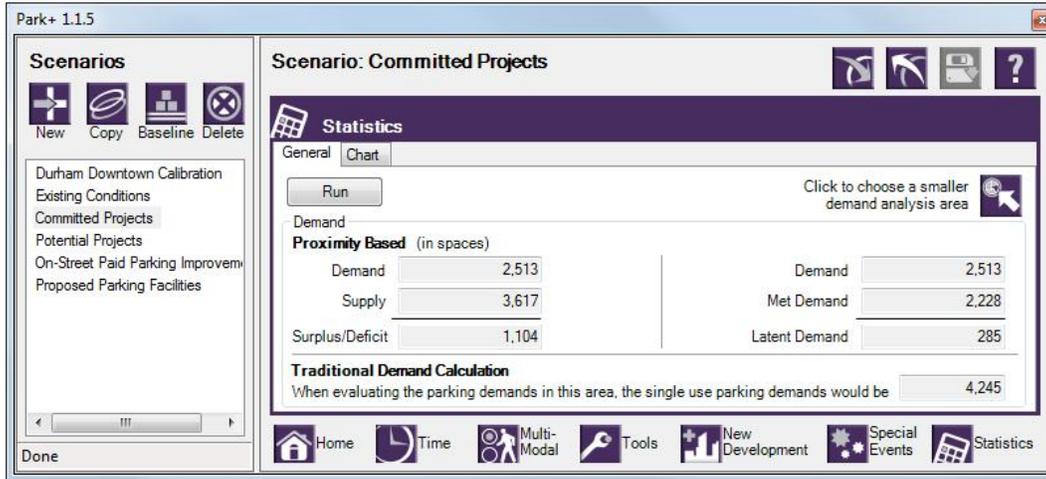


Figure 5.8 – Park+ Committed Projects Demand Projections – Downtown Loop
(2:00 PM, approximate peak hour)

American Tobacco – Committed Projects



In general, the American Tobacco area has a 1,104 space surplus, with a total demand of 2,513 spaces versus a supply of 3,617 spaces. The 2,513 space demand represents the demand generated by the land uses within the selection boundary shown in the accompanying graphic (representing the American Tobacco boundary). The 3,617 spaces of supply represents the physical supply of parking found within the American Tobacco selection boundary, including parking supply changes based on the committed projects.

Additionally, the latent demand results indicate that 2,228 spaces of the demand in the area is met by parking facilities within the selection area. This met demand represents the actual occupied spaces within the American Tobacco parking facilities (the 3,617 spaces defined in the selection set). The met demand is less than the actual demand because a number of people that wish to park in various American Tobacco parking facilities are not able to based on defined parking restrictions and the user specified walking distances. The remaining spaces within the selection area are either reserved or are not within an acceptable walking tolerance for the demand generators. The resulting value is the selection area’s specific latent demand (285 spaces), which is either met outside of the selection area, within the acceptable user walking tolerances, or not met at all.

The results of this subset selection are shown in Figure 5.9.

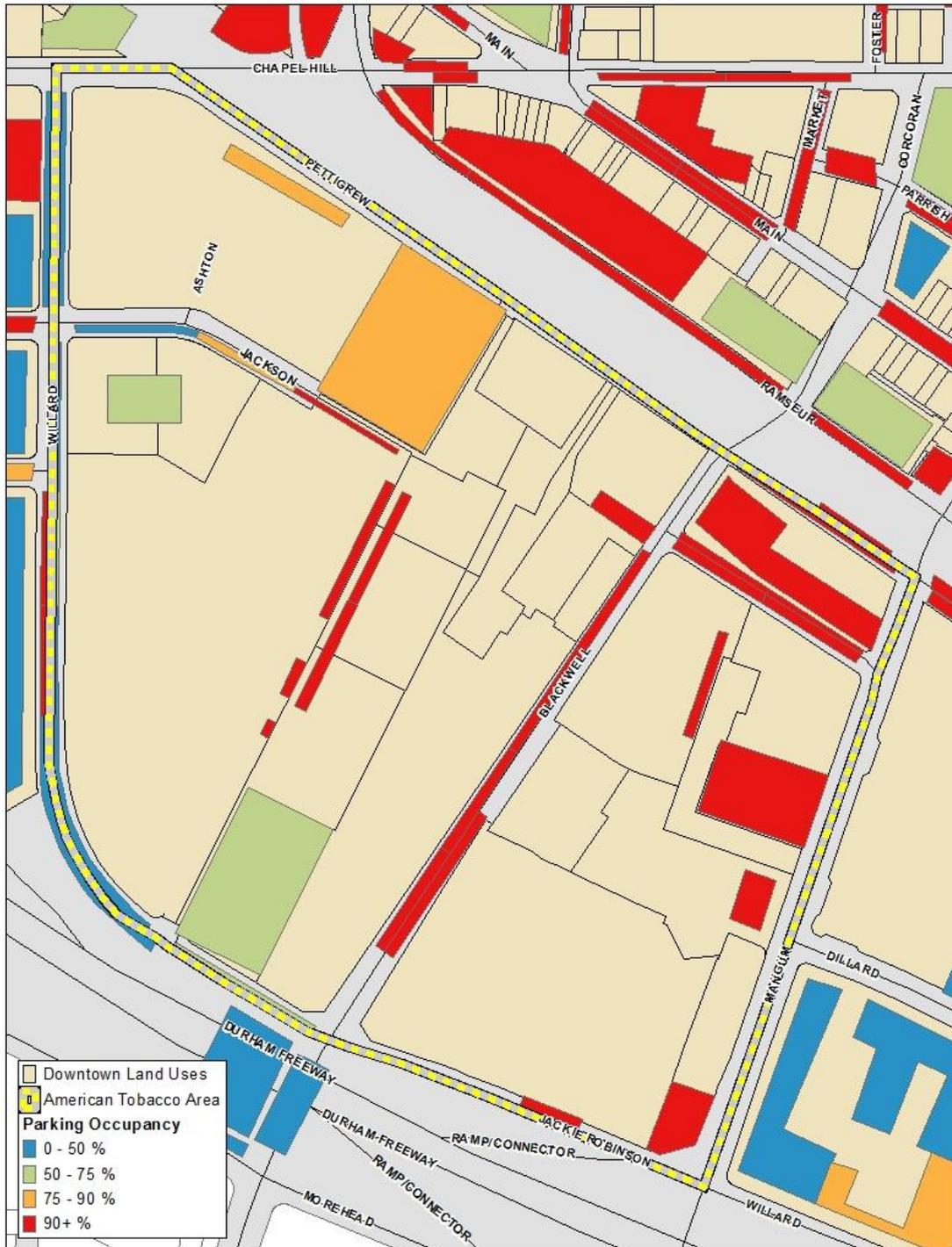


Figure 5.9 – Park+ Committed Projects Demand Projections – American Tobacco
(2:00 PM, approximate peak hour)

Projected Conditions – Potential Projects

The next scenario looks at potential projects (as of October 2012) that could occur in Downtown Durham during the planning horizon for this study. The specific projects are listed below and shown in Figure 5.10.

1. Sturdivant Properties – mixture of 150 hotel rooms, 200 apartments, and 300,000 square feet office
2. Citizens National – mixture of 2,500 square feet retail and 3 apartment units
3. Lot #14 Redevelopment – 112,000 square feet retail uses
4. Denny Clark site – mixture of 25,000 square feet retail and 80 apartments
5. Liberty Warehouse – mixture of 51,000 square feet retail and 60 apartments
6. Craig Davis Foster Street Lot Redevelopment – mixture of 95,000 square feet retail uses
7. Hank Scherich Parking Lot Redevelopment – 100,000 square feet office site
8. Chesterfield Building – 250,000 square feet office site
9. Cherokee/TTA site – 56,000 square feet retail uses
10. Durham Station Development – 275,000 square feet retail uses
11. University Ford Car Dealership - mixture of retail uses

The projects also represent a reduction in 925 parking spaces throughout the study area, based on several of the sites projected locations on existing surface parking. Because of the variable nature of the projects, no parking spaces were modeled with the new projects to estimate the parking demands on the downtown area. Estimates of site specific parking demand are provided in the subsequent discussion.

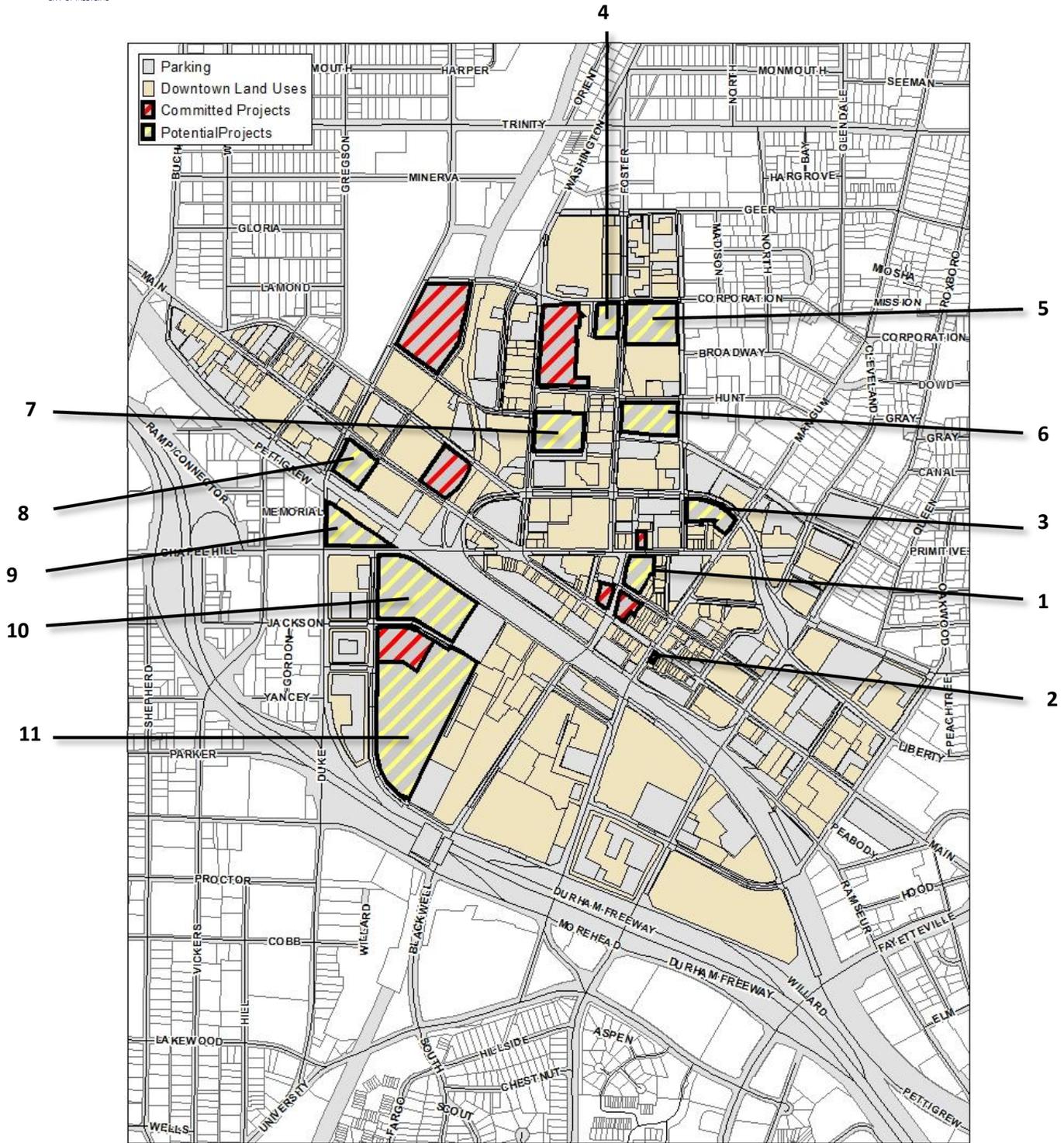
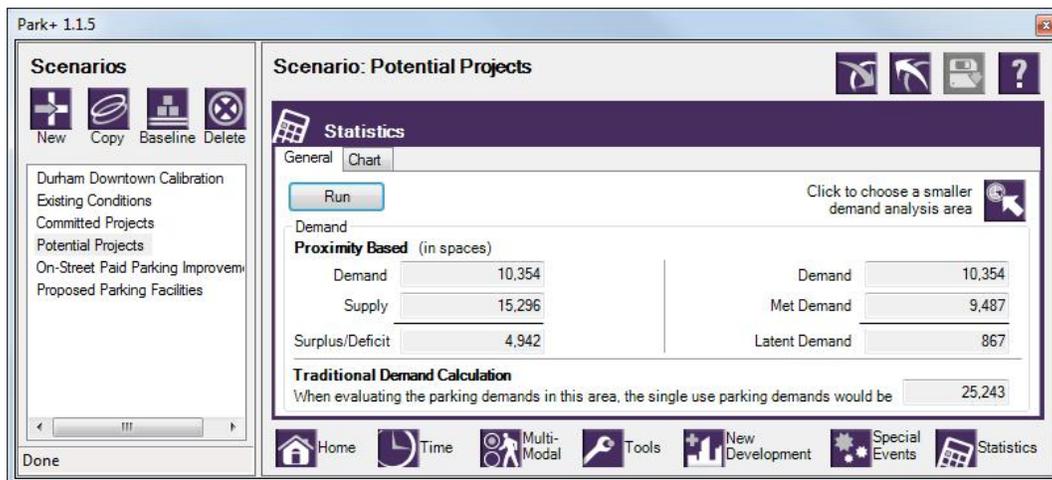


Figure 5.10 – Park+ Potential Projects

The results for the potential projects analysis are shown on the following pages.



The results for the Potential Projects scenario indicate that there is a 10,354 space demand for parking versus a 15,296 space supply within the study area. The total demand represents the demand generated by all land uses, including the existing land uses, the committed projects, and the potential projects defined on the previous pages. The total supply represents the the entirety of the parking spaces found within Downtown Durham, including the existing spaces and those new spaces associated with committed development.

For this scenario, the output indicates that the latent demand is 867 spaces, which is a result of some demand tensions created by the potential new developments. The latent demand, which is created by the potential new developments without associated parking, represents demand that cannot be met within the specified walking tolerances and restriction patterns defined in the model. Current City Ordinance does not require new development to provide parking, therefore, latent demand represents estimated parking that is needed to support the potential projects.

A detailed analysis of the potential new developments provides the following projected parking needs at the approximate peak hour of 2:00 PM:

1. Sturdivant Properties – 594 spaces of demand on-site (with 139 spaces of unmet demand)
2. Citizens National – 4 spaces of demand on-site
3. Lot #14 Redevelopment – 93 spaces of demand on-site (with 10 spaces of unmet demand)
4. Denny Clark site – 65 spaces of demand on-site
5. Liberty Warehouse – 76 spaces of demand on-site (with 18 spaces of unmet demand)
6. Craig Davis Foster Street Lot Redevelopment – 82 spaces of demand on-site (61 spaces of latent demand)
7. Hank Scherich Parking Lot Redevelopment – 149 spaces of demand on-site
8. Chesterfield Building – 372 spaces of demand on-site
9. Cherokee/TTA site – 46 spaces of demand on-site
10. Durham Station Development – 226 spaces of demand on-site
11. University Ford Car Dealership – 370 spaces of demand on-site (31 spaces of latent demand)

Finally, the model indicates that the demand for parking when using traditional demand metrics is 25,243 spaces, meaning that the actual demand is approximately 60 percent less than demand predicted by traditional measures (in this case ITE or ULI).

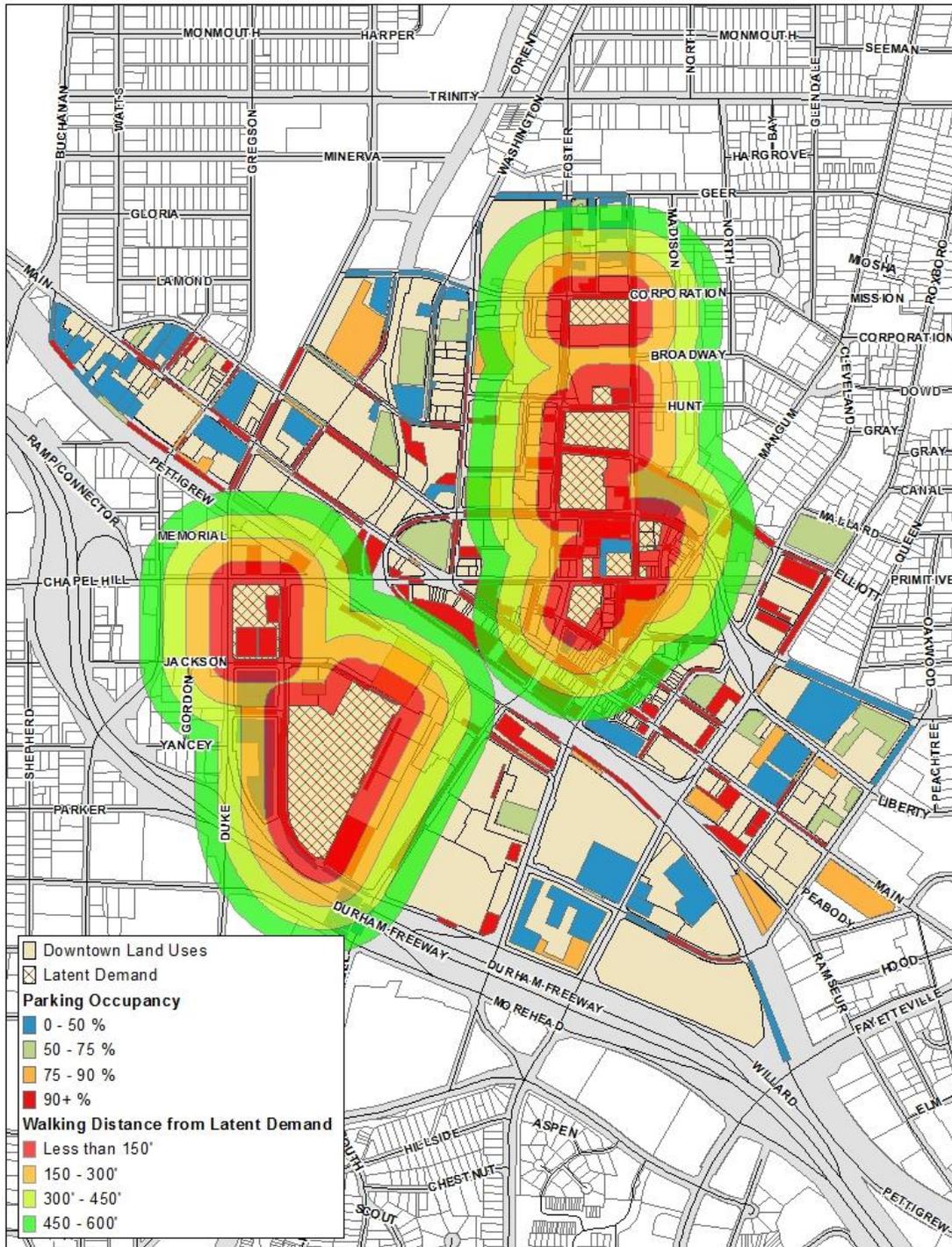
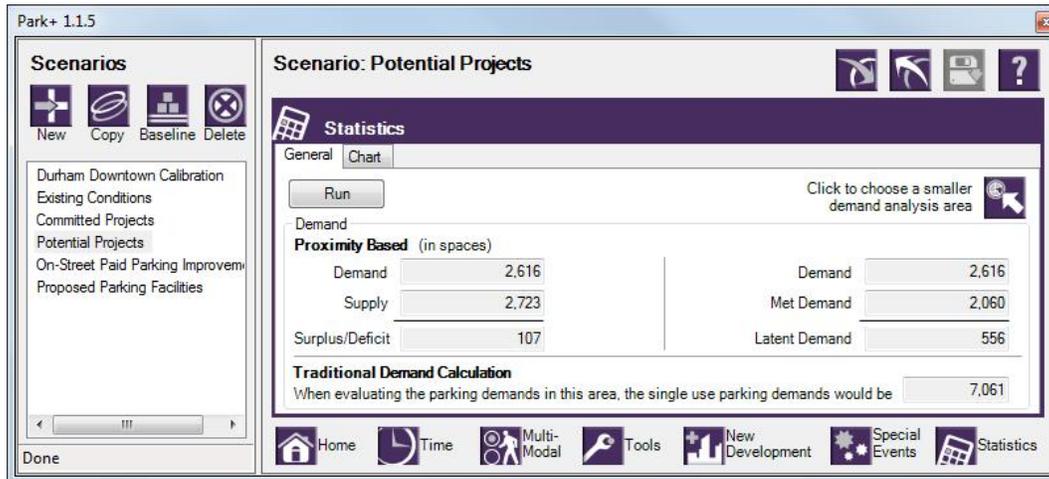


Figure 5.11 – Park+ Potential Projects Demand Projections
(2:00 PM, approximate peak hour)

Downtown Loop – Potential Projects



In the Potential Projects scenario, the Downtown Loop area has a 107 space surplus, with a total demand of 2,616 spaces versus a supply of 2,723 spaces. The 2,616 space demand represents the demand generated by the land uses within the selection boundary shown in the accompanying graphic (representing the Downtown Loop boundary). The 2,723 spaces of supply represents the physical supply of parking found within the Downtown Loop boundary.

Additionally, the latent demand results indicate that 2,060 spaces of the demand in the area is met by parking facilities within the selection area. This met demand represents the actual occupied spaces within the Downtown Loop parking facilities (the 2,723 spaces defined in the selection set). The met demand is less than the actual demand because a number of people that wish to park in various Downtown Loop parking facilities are not able to based on defined parking restrictions and the user specified walking distances. The remaining spaces within the selection area or are either reserved are not within an acceptable walking tolerance for the demand generators. The resulting value is the selection area’s specific latent demand (556 spaces), which is either met outside of the selection area, within the acceptable user walking tolerances, or not met at all.

The results of this subset selection are shown in Figure 5.12.

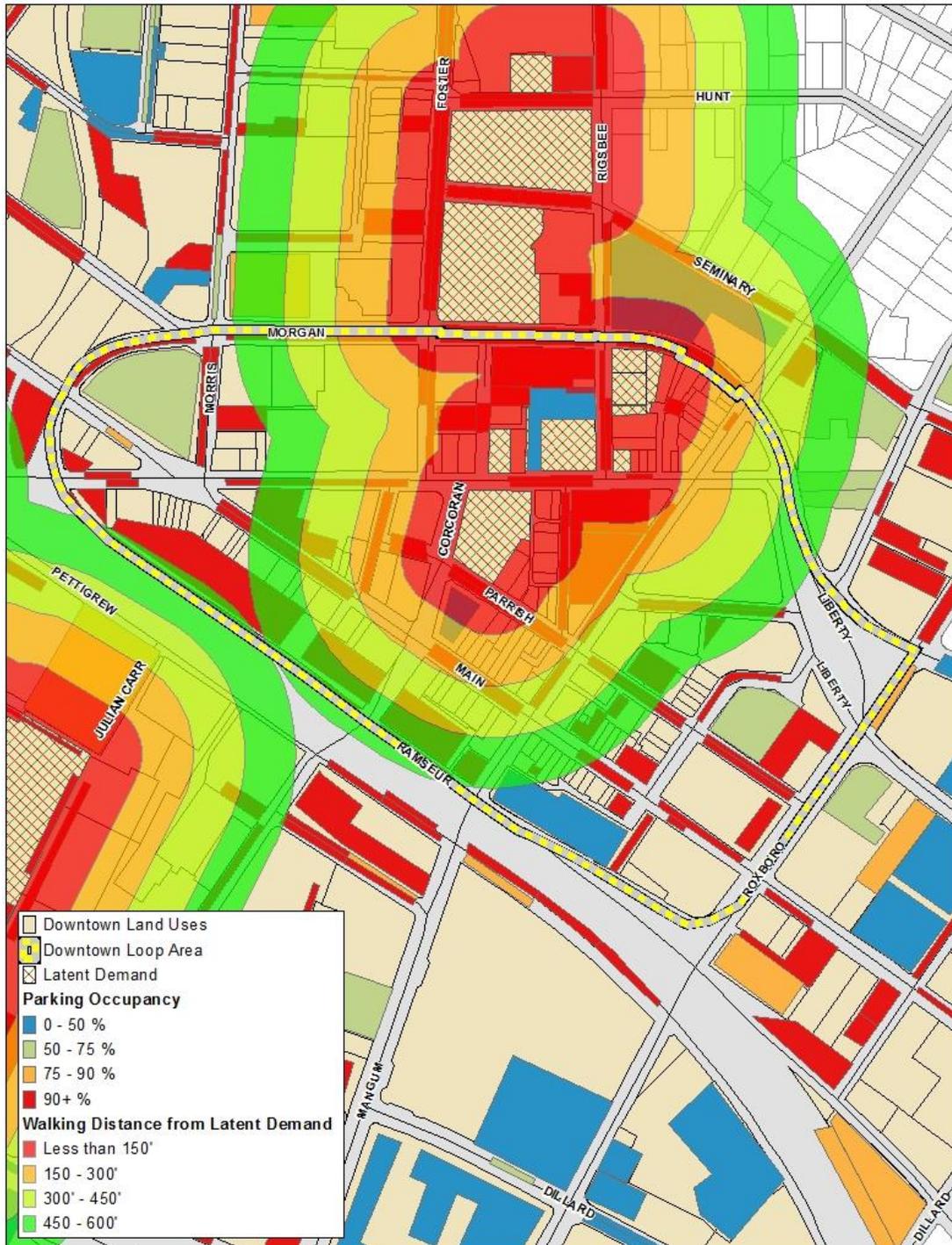
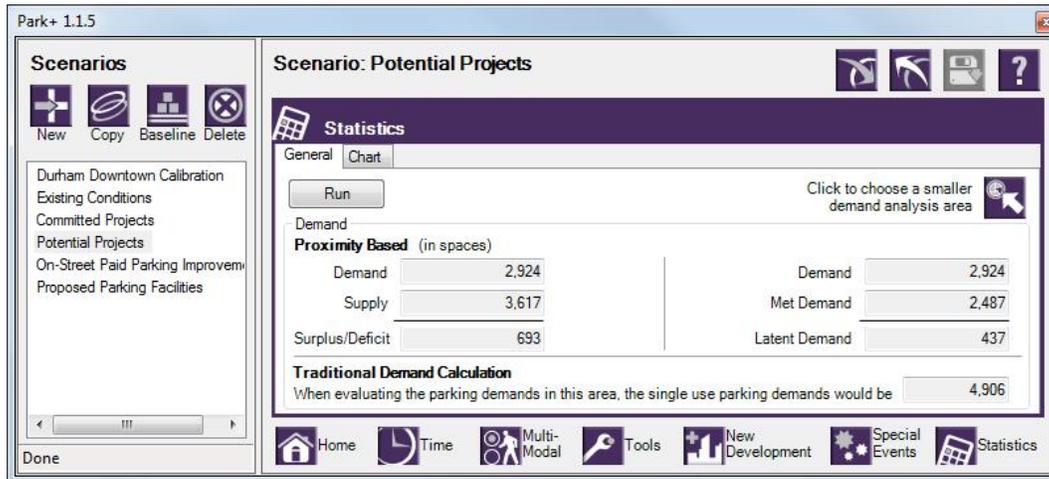


Figure 5.12 – Park+ Potential Projects Demand Projections – Downtown Loop
(2:00 PM, approximate peak hour)

American Tobacco – Potential Projects



In the Potential Projects scenario, the American Tobacco area has a 693 space surplus, with a total demand of 2,924 spaces versus a supply of 3,617 spaces. The 2,924 space demand represents the demand generated by the land uses within the selection boundary shown in the accompanying graphic (representing the American Tobacco boundary). The 3,617 spaces of supply represents the physical supply of parking found within the American Tobacco selection boundary, including parking supply changes based on the committed projects.

Additionally, the latent demand results indicate that 2,487 spaces of the demand in the area is met by parking facilities within the selection area. This met demand represents the actual occupied spaces within the American Tobacco parking facilities (the 3,617 spaces defined in the selection set). The met demand is less than the actual demand because a number of people that wish to park in various American Tobacco parking facilities are not able to based on defined parking restrictions and the user specified walking distances. The remaining spaces within the selection area are either reserved or are not within an acceptable walking tolerance for the demand generators. The resulting value is the selection area’s specific latent demand (437 spaces), which is either met outside of the selection area, within the acceptable user walking tolerances, or not met at all.

The results of this subset selection are shown in Figure 5.13.

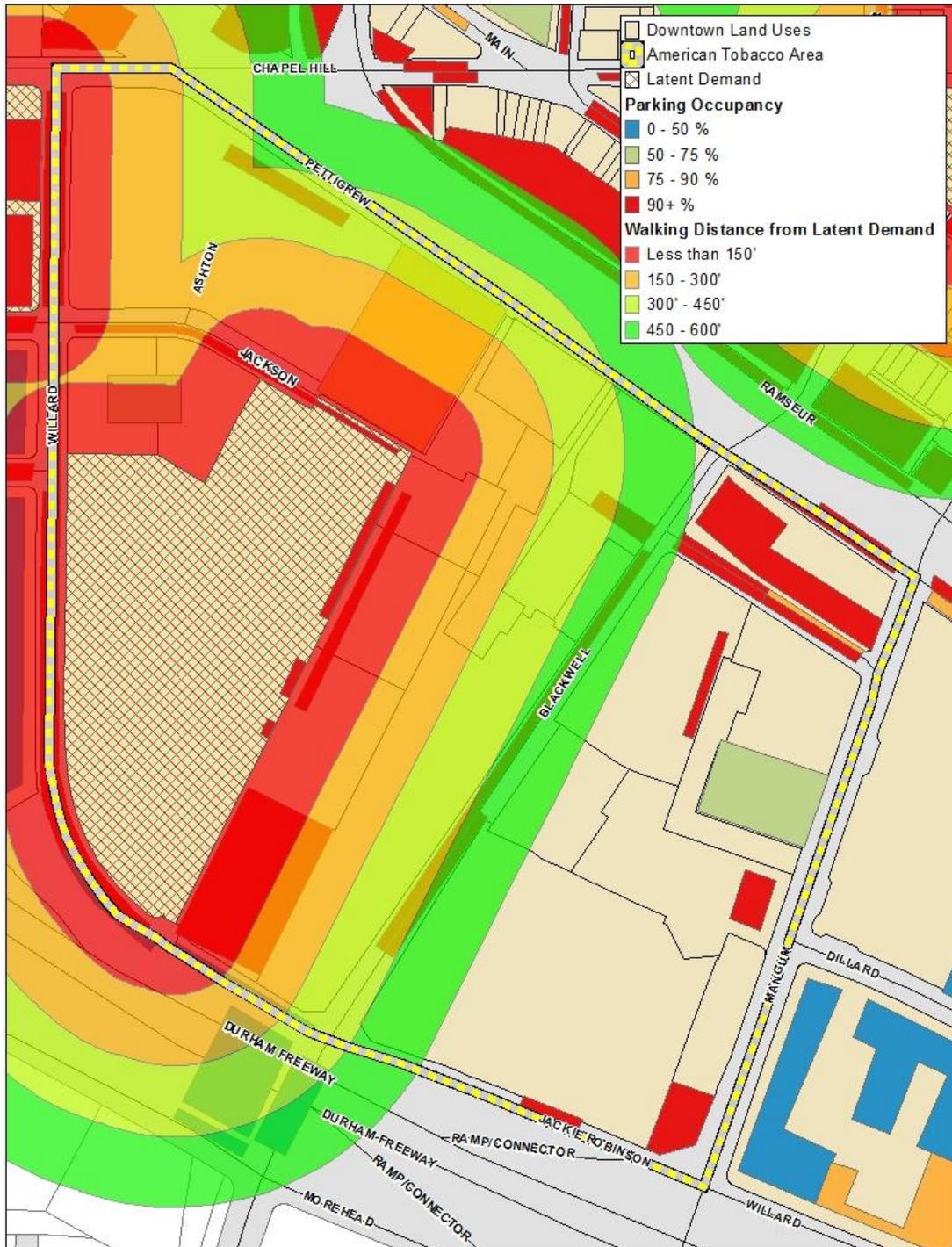
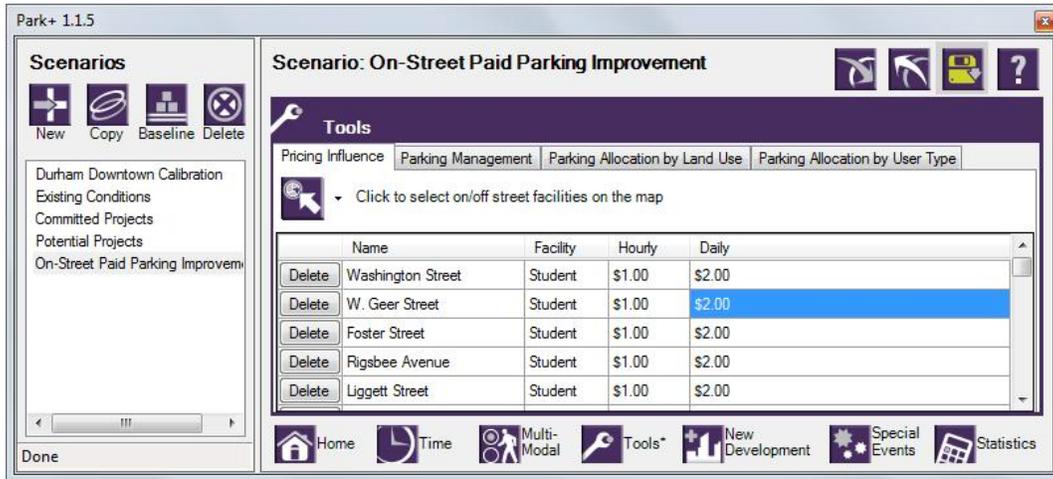
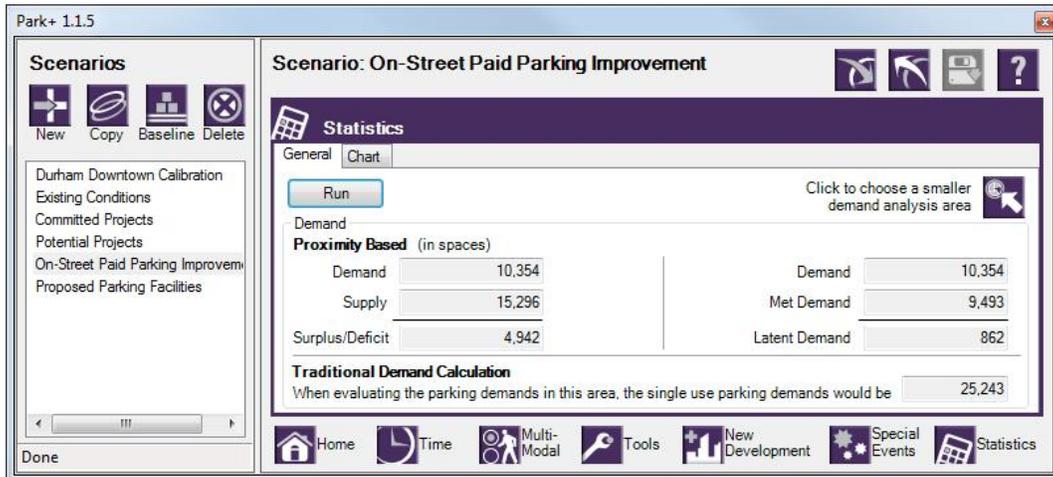


Figure 5.13 – Park+ Potential Projects Demand Projections – American Tobacco
(2:00 PM, approximate peak hour)



Hourly and daily costs were input into the parking model and run as a function of the potential project scenario (defined in the previous section). The results are shown below.



The results indicate that there is a 10,354 space demand for parking versus a 15,296 space supply within the study area. The total demand represents the demand generated by all land uses, including the existing land uses, the committed projects, and the potential projects defined on the previous pages. The total supply represents the the entirety of the parking spaces found within Downtown Durham, including the existing spaces and those new spaces associated with committed development. These results are consistent with the previous scenario.

For this scenario, the output indicates that the latent demand is 862 spaces, which is a result of some demand tensions created by the potential new developments. The latent demand, which is created by the potential new developments without associated parking, represents demand that cannot be met within the specified walking tolerances and restriction patterns defined in the model. The latent demand is reduced slightly over the previous scenario. This reduction is due to the shift in parking demands off-street by some users, which frees up additional capacity for on-street spaces within the study area.

A comparison of on-street parking occupancy rates are shown in Table 5.2. The Park+ model results predicting the impact of paid on-street parking are visually represented in Figure 5.15.

Table 5.2 – On-Street Parking Occupancy Comparison

Location	Existing Conditions	Committed Projects	Potential Projects	With Paid Parking
On-Street (locations where paid parking is proposed)	77%	80%	86%	78%
On-Street (locations where no parking fee is proposed)	60%	63%	75%	75%
Off-Street (Adjacent to Proposed Paid On-Street)*	58%	60%	65%	65%

**Adjacent parking is within 500 feet of the proposed on-street paid parking areas*

As evidenced from Table 5.2, implementing paid on-street parking reduces on-street occupancy from 86% to 78%, when considering the Potential Projects scenario. The non-paid on-street parking areas and off-street facilities within 500 feet of the recommended on-street paid parking areas maintain consistent occupancies with the implementation of paid on-street parking. Considering these two categories of parking remain constant, there is expected to be an increase in parking occupancy in facilities near the extents of the study area.

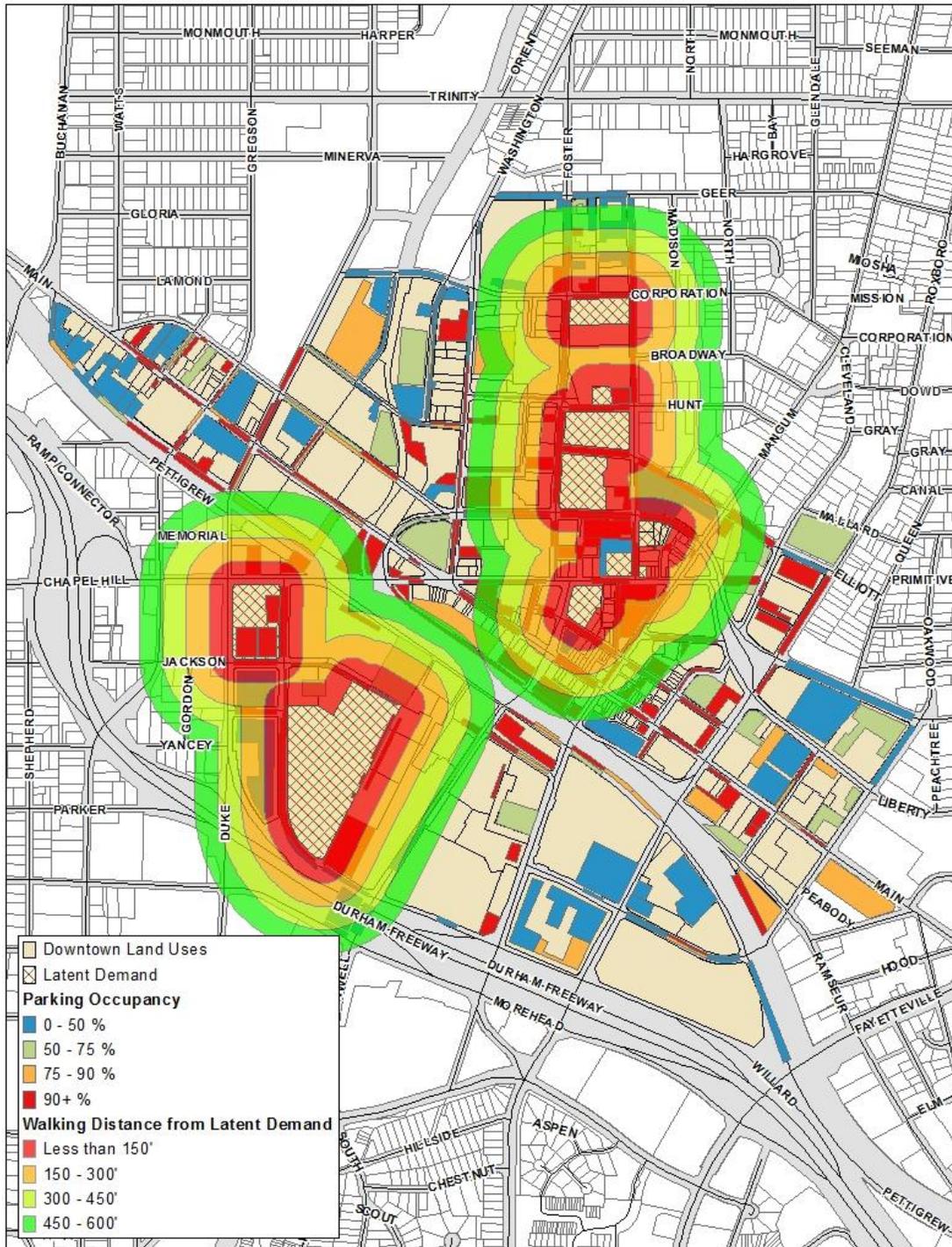


Figure 5.15 – Park+ On-Street Paid Parking Demand Projections
(2:00 PM, approximate peak hour)

Projected Conditions – Potential Parking Infrastructure

The final scenario is the introduction of new parking facilities, operated as public parking, to better serve the growing demands in the Downtown area. Based on the knowledge of future development and potential parking improvements in the area, the following parking facilities were modeled in the Park+ future demand scenario (shown visually in Figure 5.16).

1. Durham County Garage - the site is bounded by East Main, Liberty, and Queen Streets on the east side of downtown (two surface lots existing). Assumed to be 500 spaces, likely built in the next 5-10 years.
2. City Garage - site is likely to be either the southwest or southeast corner of West Morgan and Rigsbee. Assumed to be 500 spaces, likely built in the next 5 years.
3. Central Park Garage – site was generally assumed to be near Rigsbee and Corporation. Assumed to be 500 spaces, likely built a little further out to correspond with future development in the area.

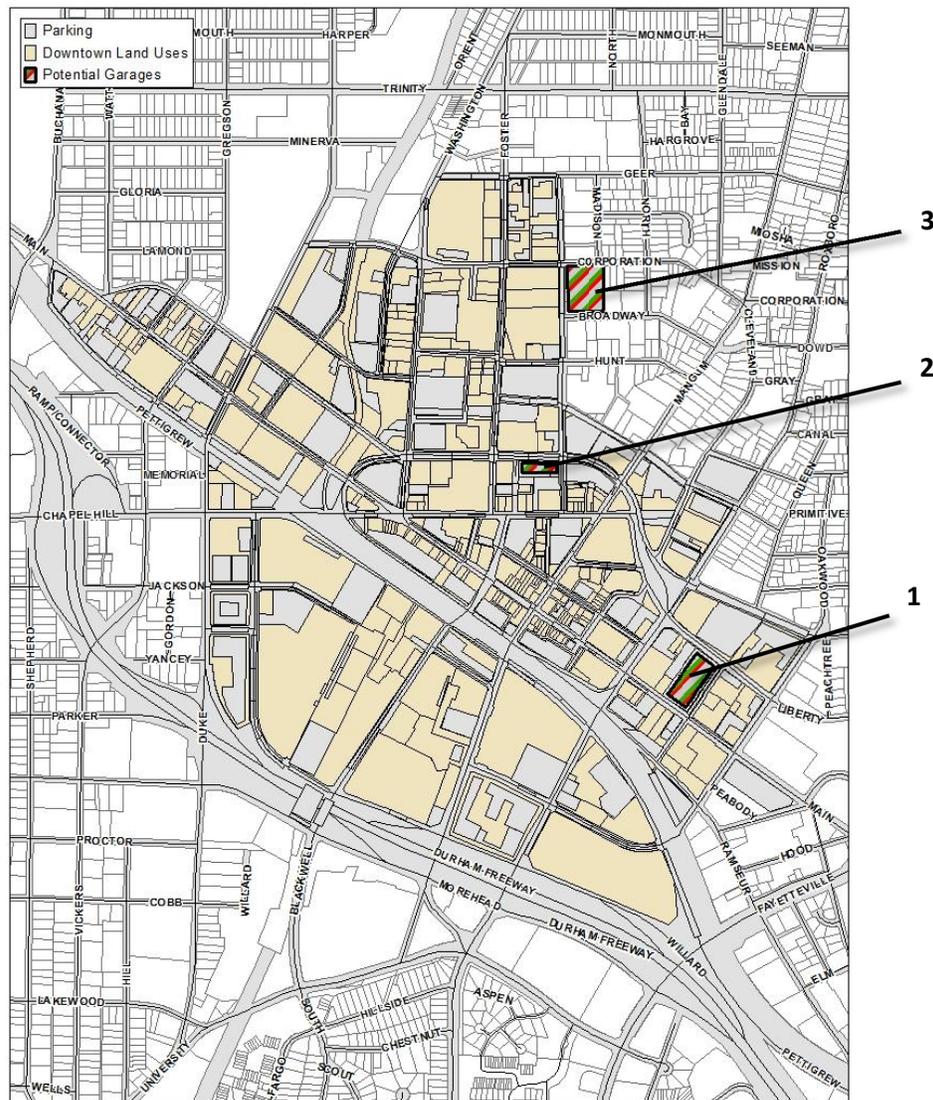
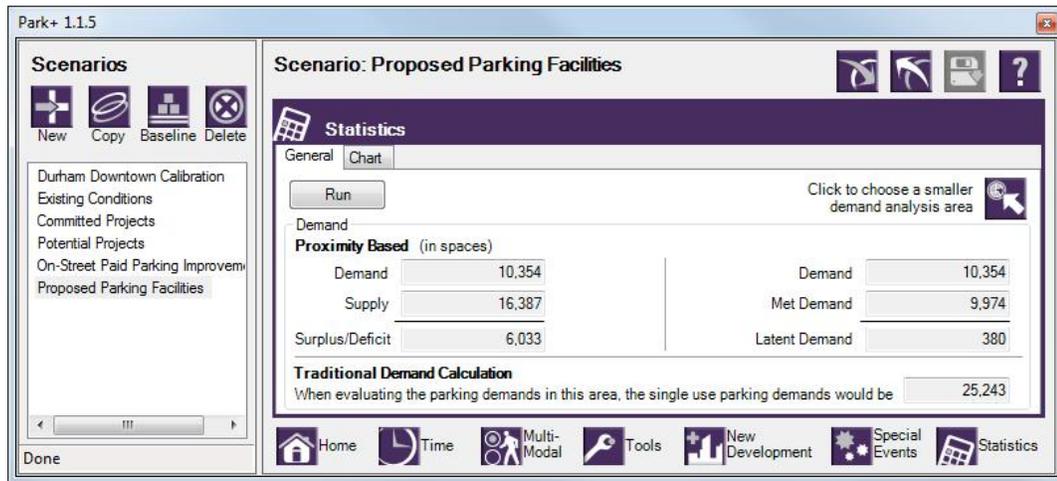


Figure 5.16 – Park+ Potential Proposed Parking Infrastructure



The results for this scenario indicate that there is a 10,354 space demand for parking versus a 16,387 space supply within the study area. The total demand represents the demand generated by all land uses, including the existing land uses, the committed projects, and the potential projects defined on the previous pages. The total supply represents the the entirety of the parking spaces found within Downtown Durham, including the existing spaces, those new spaces associated with committed development, and the potential garages outlined above.

For this scenario, the output indicates that the latent demand is 380 spaces, which is a result of some demand tensions created by the potential new developments. The latent demand, which is created by the potential new developments without associated parking, represents demand that cannot be met within the specified walking tolerances and restriction patterns defined in the model. The latent demand is reduced by approximately 482 spaces over the previous scenario, indicating that the location of the parking facilities is helpful in reducing some of the parking demand. Additional locations in the southern portions of the study area would help to mitigate the additional latent demand found in that area (although additional private parking associated with the potential developments could mitigate this during the development process). Results are graphically represented in Figure 5.17.

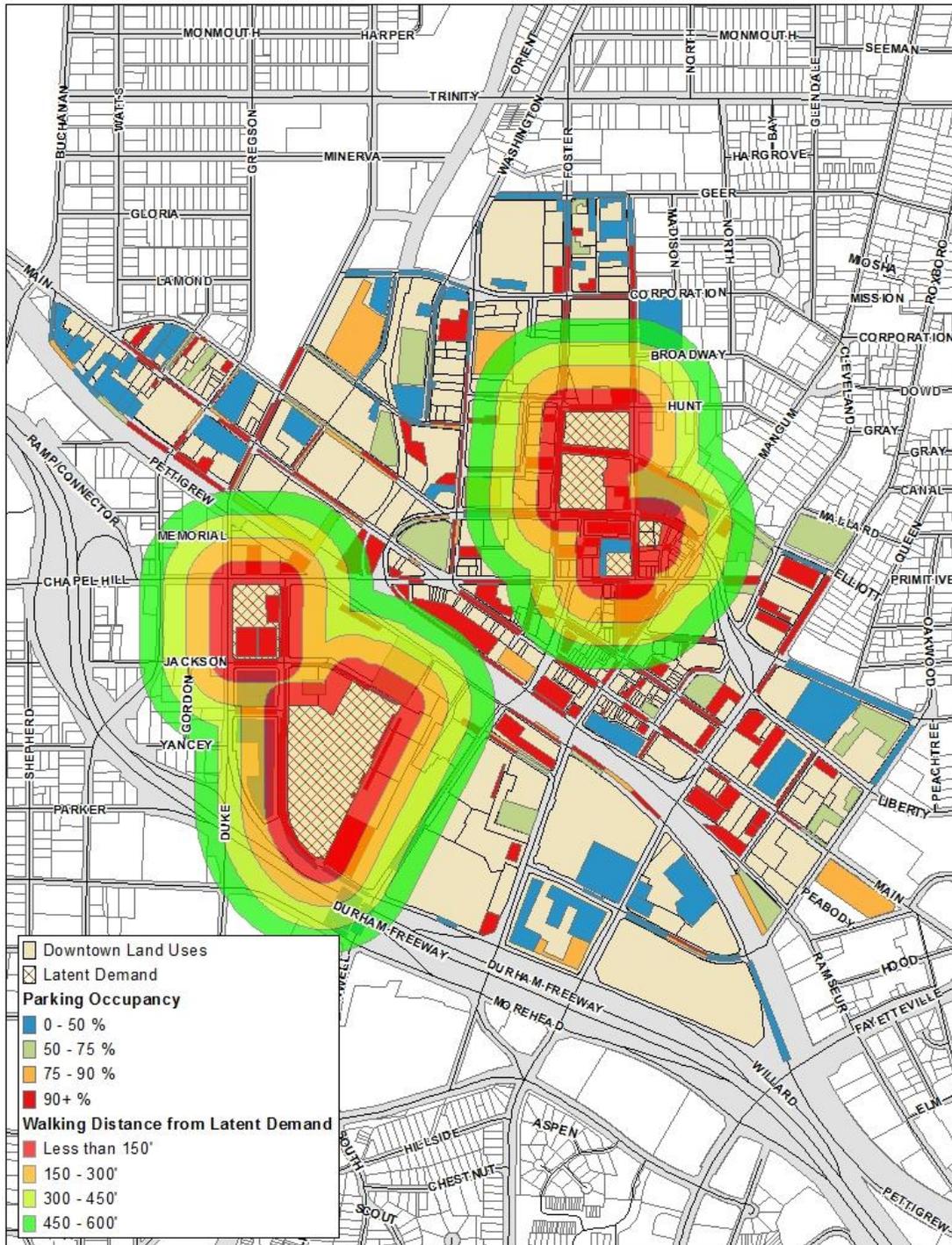


Figure 5.17 – Park+ Parking Infrastructure Demand Projections
(2:00 PM, approximate peak hour)

Parking Demand Analysis Conclusions

When reviewing the study area wide parking statistics from each scenario, it appears as if the Downtown area has a surplus of parking of at least 4,000 spaces, even in the worst case scenario. This result is deceiving and masks the fact that there are definitive localized deficiencies in each of the planning horizons, including existing, committed, and potential development levels. When looking at the results of the model more granularly, the results indicate that there are specific localized deficiencies, many of which are caused by the introduction of new development, even when that new development is not directly adjacent to the resulting deficiency or latent demand. The following summaries define the modeled conditions for each scenario.

Existing Conditions – The existing conditions scenario includes 7,946 spaces of demand versus a supply of 15,581 spaces, resulting in a surplus of 7,635 spaces overall. Despite this large surplus, there are still some localized areas of deficiency including much of the on-street parking and public parking in the Downtown Loop, which supports not only the land uses within its boundary, but also many uses within a reasonable walking distance outside of the loop.

Committed Projects – The committed projects scenario included seven new developments (four of which included dedicated parking). The results projected a demand of 8,783 spaces, an increase of 837 spaces attributed to the committed developments. With the additional parking of the new committed developments, the overall parking supply increased by 1,099 spaces and decreased by 459 spaces, with a net increase of 640 spaces, bringing the study area total to 16,221 spaces. The increased demand increases tensions around the various committed developments, putting more pressure on public parking supply in the area.

Potential Projects – The potential projects scenario includes 11 projects throughout downtown. No additional parking supply was projected with these development projects, such that the additional parking demand and its impact to the study area could be estimated. The results project a demand of 10,354 spaces, an increase of 1,571 spaces. The parking supply also decreased (because of new potential developments replacing surface parking) by 925 spaces to a total of 15,296 spaces. The tensions that were previously experienced around the public parking supply now result in a latent demand of 867 spaces, which represents parking demand that cannot be allocated based on walking distances and availability of parking.

On-Street Paid Parking Implementation – The first recommendations scenario looked at the implementation of paid parking in various areas throughout the study area. The scenario did not alter the demand and supply values from the previous scenario (10,354 spaces of demand vs. 15,296 spaces of supply), but the improvement did redistribute parking demand from the most visible and coveted on-street area into available off-street supply, balancing supply somewhat and making on-street spaces more available to absorb latent demand. As a result the latent demand was reduced between scenarios by a handful of spaces, from 867 spaces to 862 spaces.

Proposed Parking Infrastructure Implementation – The second implementation scenario looked at the implementation of new public parking facilities throughout the study area. The scenario added 1,500 structured parking spaces in three facilities, while removing 409 surface parking spaces for construction of the facilities. The demand for parking (10,354 spaces) remains consistent. The addition of the new parking facilities serves to reduce much of the demand constraints in the eastern and northern portions of the study area, with the overall latent demand reduced from 862 spaces to 380 spaces. This scenario is a good example of how the introduction of new parking facilities can impact not only the immediately adjacent areas, but also the community as a whole.

The results can be utilized to envision recommendations that rely on centralized and shared public parking to support new parking demands, while also combining private parking infrastructure to offset new demands generated from office and residential uses that require their own dedicated parking supply. The pursuit of

public-private partnerships for the development of parking would be an ideal solution to the need for incremental public supply additions, while maintaining lower construction costs through shared investment.

A key example for this type of development in the short term would be the Woolworth’s site, located within the Downtown Loop. The Downtown Loop area, while sufficiently utilized and under capacity, has the perception of a shortage of public parking supply. Within this area, there are 4 primary off-street public parking facilities representing 2,160 spaces of supply (87% of total supply in the area). The occupancy of these facilities averages between 75 and 85% occupied, which is considered “approaching capacity” by industry standards. The completion of the Woolworth’s development will only compound the potential parking problem in the area, pushing these public facilities to the brink of capacity. A suitable solution would be to engage the developer of this site in a public-private agreement, combining to develop public parking supply in conjunction with private parking infrastructure. The benefits to this type of agreement would be increased public supply, reduced capital costs for the City, and increased parking supply in the area for the promotion of business growth and overall economic development.

An additional recommendation from this section’s evaluation would be to continue to maintain and manage the database associated with Park+ to give the City a more robust and realistic planning tool. The ongoing management and inclusion of data will give City planners more data points to use in the evaluation of new development and associated parking needs. The tool, when maintained properly, is a great resource to promote “right-sized parking” within the community, helping the City to better allocate and operate the existing parking resources, while efficiently maximizing the combination of parking needs and development densities within the community.

6 | Operations and Management

The previous sections of this document have described the actual parking environment in the Downtown study area, including peak usage and estimated demands. This section analyzes the operations and management aspect of the parking system including on- and off-street parking rates, enforcement, and operations; a review of current access and revenue control equipment; an overview of facility security; a description of current means of facility wayfinding; an overview of the City's method of parking management; and a review of parking rates in cities similar to that of Durham.

Currently, parking in the City of Durham is operated, managed, and enforced by Lanier Parking Solutions within the framework of the City of Durham Municipal Code. In general, parking related ordinances can be found in Chapter 66, Articles IV and VI. Particular articles of interest, as documented on the City of Durham website, are included in Appendix A.



On-Street Parking

The on-street parking system has approximately 1,505 spaces within the downtown study area. These include non-metered spaces and handicap accessible spaces. The various types of on-street parking are described in the following sections. On-street parking locations and associated time restrictions are shown in Figure 6.1.



Non-metered Spaces

None of the on-street parking is metered; therefore, it is managed through signage and pavement markings. Time restrictions for on-street parking are communicated via pole mounted signage and vary throughout the study area from as little as 20 minutes near the DPAC and Diamond View III building currently under construction to as much as 2 hours in the majority of the study area and are typically in effect between the hours of 8:00 AM and 6:00 PM; however, variations in the hours of restriction do occur within the study area. During evenings and weekends, as well as all City holidays, the on-street time restrictions are lifted. A detailed review of on-street meter technology in the marketplace today is provided in a subsequent section of this document titled "On-Street Technology Overview".

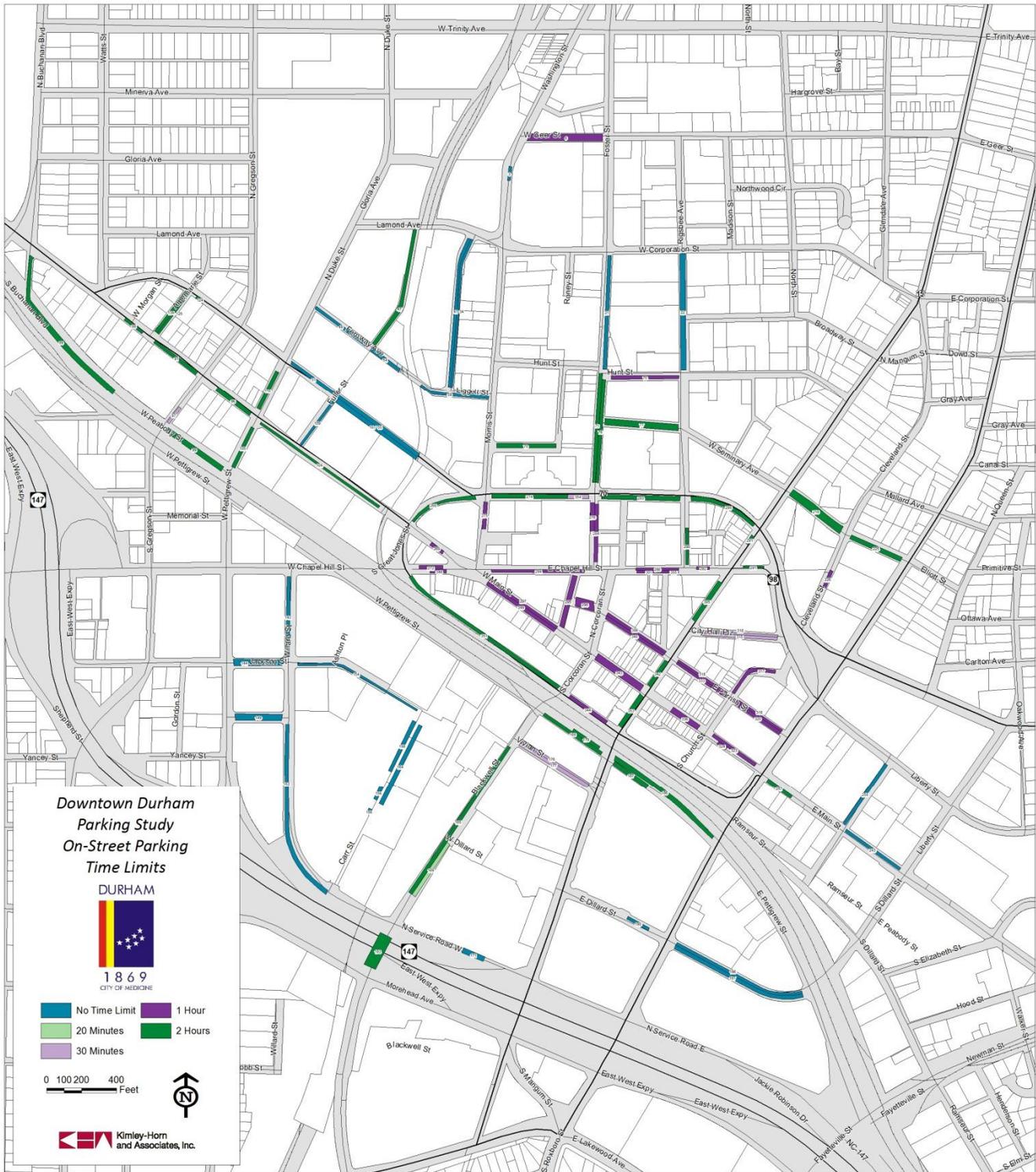


Figure 6.1 – Existing On-Street Parking Locations and Time Restrictions

Handicap Accessible Spaces

Handicap accessible parking consists of those spaces designated for vehicles displaying a handicap decal, license plate, or hanging tag and are delineated with pavement markings and identified with pole mounted signage. These spaces are spread throughout the study area such that convenient accessible parking is located as near destinations as practicable. Per North Carolina law, handicap accessible spaces may be charged an hourly fee for their use; however, these spaces cannot be time restricted. The City of Durham neither time restricts, nor charges a fee for, handicap accessible parking. Illegally parking within a handicap space is enforced through fines and towing.

Special Parking

Special parking, such as bus parking, consist of areas where parking is restricted to the general public and limited to short-term use only. These special types of on-street parking are typically delineated as a zone, rather than specific parking spaces. Bus parking areas represent a small amount of on-street parking space within the study area; however, where they are located, they are identified with pole mounted signage and are enforced accordingly.



On-Street Enforcement / Fines

There are a number of posted time restrictions throughout the downtown study area. However, it was suggested through the public outreach efforts that on-street enforcement is typically limited to Main Street and Chapel Hill Street. Currently, the City contracts Lanier Parking Solutions to operate and enforce parking within the Downtown study area, as well as the residential areas around Duke University and North Carolina Central University. The residential areas mentioned fall outside of the downtown study area limits. Lanier enforcement staff are also trained and equipped with maps of Durham to offer assistance to the public.

Parking is enforced by Lanier Parking Solutions who dedicates three “ambassadors” to patrol Downtown and one to patrol the campuses in beats that are assigned to them daily and rotated on a daily basis. The current enforcement method allows an ambassador to assign an electronic “chalk time” associated with a vehicle license plate number and parking space. A vehicle parked in a space beyond the posted time limit, plus a 5 minutes grace period, is issued a citation. Vehicles illegally parked in a handicap accessible space, loading zone, or bus zone are issued citations as well. A typical parking citation is issued as a \$10.00 fine, if paid within 30 days from issuance. If paid between 30 and 45 days from issuance, the fine increases to \$20.00, and if paid after 45 days, the fine increases to \$45.00.

Parking enforcement staff typically issues an average of between 75 and 100 citations per day, during months when North Carolina Central University and Duke University are in session. This number decreases slightly when school is not in session. The monthly average throughout a typical year is approximately 1,500 citations per month of which approximately 60% are issued in the Downtown

Parking Violation
City of Durham, NC

Parking Violation Number
33504531

Date: 10/19/2012 Time: 08:40
Officer: C-80
Violation: PARKING IN NO PARKING AREA
NO COMMENT

If paid within 30 days Fine: \$ 10.00
If paid after 30 days but within 45 days Fine: \$ 20.00
If paid after 45 days Fine: \$ 45.00

License Number
NORTH CAROLINA/ 2012

Make SATURN4 DOOR RED

Location
200 SOUTH SEMINARY AVE.

PAY ONLINE AT:
www.williamsonparking.com
Vehicle will be immobilized if not paid.

Parking Violation

study area, 15% around North Carolina Central University, 3% around Duke University, and 22% written by City of Durham Police Department Officers.

The City of Durham Municipal Code allows for the towing and/or application of wheel lock devices for vehicles that have three or more unpaid parking tickets, which are outstanding for a period of 90 days or more. All applicable fines, plus an additional immobilization fee are required to be paid prior to removal of a wheel lock. Should a vehicle with a wheel lock not pay the appropriate fees within a 24 hour time period, the vehicle will be towed. At this point, the owner of the vehicle would be required to pay all fines, immobilization fee, towing fee, and impound fees, prior to the vehicle being released. City of Durham Ordinances state that a vehicle cannot be immobilized with a wheel lock device on site, rather the vehicle owner must be notified and then found in violation thereafter. Currently, an average of two vehicles are immobilized with a wheel lock device per month.

Valet Operations

The City currently has only one valet operation within the Downtown study area. In this instance, Lanier Parking Solutions charges the restaurant establishment the cost of one monthly permit rate for access into and out of the nearest garage starting at 5:30 PM each day. In this instance the valet operation could have many vehicles parked in the City-owned garage at the rate of one monthly permit. This agreement between City and business owner should be renegotiated, as the value of this service to the business owner is likely more than the cost of the monthly permit, which could result in increased revenue for the City.

As Downtown continues to evolve and valet operations become more and more appealing for the City and its businesses, it is important that a consistent and manageable approach to valet operations be implemented. Specific attention should be given to location of valet stands and the fee that the City charges for valet operators. In general, valet stands should be located at or near the center of a block face, where vehicular queuing is less likely to impact traffic operations at nearby intersections. In addition, appropriate fees equivalent to the valuation of the revenue generation potential of the on-street parking spaces used plus administrative costs should be collected by the City from the valet operator.

An alternative approach to valet service would be to create a Centralized Valet Operation. In this approach, rather than review and approve valet stands by a series of single operators, the City could lease valet rights to a single operator or multiple operators that would work in unison. The Centralized Valet Operation would allow users a network of valet locations where their car could be picked up at the valet stand closest and most convenient to their final destination. This approach has been implemented in several communities, including Chapel Hill, N.C.

In general, curb lane policy and management, including valet operations, should be further studied by the City of Durham to ensure that each on-street use is working in concert with one another, providing the most efficient use of City resources.

Commercial Loading Zones

Currently, several on-street locations throughout the study area are used for commercial loading zones to support business deliveries and are enforced by Lanier Parking Solutions. The City of Durham Unified Development Ordinance states the following:

“No loading spaces shall be located within 30 feet of street intersections or in any required yard space, except in the CI District and Design Districts where the required distance shall be 20 feet. Street intersections shall be measured from the back of the predominant curbline or future curbline where no curb currently exists.”

No matter the requirements of loading zones, they should be placed in the community to increase the usage of curb space and support the pedestrian environment and vehicular flow. In addition, commercial loading zones should be placed at the end of a block face, closest to the intersection to provide a buffer for pedestrians using on-street parking.

As a means of curb face management, other cities have instituted commercial loading zone permits for businesses to purchase that would provide loading zone access based on their needs. For instance, a tiered rate structure for these permits could provide the business or vehicle operator access to a loading zone for as little as 30 minutes to as much as 2 hours at a time.

In general, curb lane policy and management, including loading zones, should be further studied by the City of Durham to ensure that each on-street use is working in concert with one another, providing the most efficient use of City resources.

Off-Street Parking

The City of Durham owns and operates five parking garages and several surface lots throughout the downtown study area. The City-owned parking garages (Corcoran Street, Church Street, Chapel Hill Street, Durham Centre, North Deck) are available for monthly, hourly, and special event parking, while the surface lots are predominantly available for monthly parking. There are a total of 4,221 spaces in the City-owned off-street facilities, with 859 in surface lots and 3,362 in parking garages. Table 6.1 and Table 6.2 list the number of spaces in each City-owned off-street parking facility. The following sections review the off-street parking supply operations.



Table 6.1 – City-Owned Surface Parking Inventory

Surface Lot	# of Spaces
Lot 4	24
Lot 5 – City Hall Annex	67
Lot 8	91
Marriott Lot	88
Lot 12 – Blackwell St/NC 147	62
Lot 14	102
Lot 20	76
Manning Place	21
Lot 29	48
Lot 32	10
Lot 37 ¹	54
Lot 38 ¹	164
Lot 40	52
Total	859

¹ City employee parking

Table 6.2 – City-Owned Structured Parking Inventory

Garage	# of Spaces
Corcoran Street	554
Church Street	409
Chapel Hill Street	360
Durham Centre	719
North	1,320
Total	3,362

Monthly Users

Monthly users provide the highest amount of revenue from the City’s parking system. Many City-owned surface lots are assigned for monthly use. These include Lot 5, Lot 14, Lot 20, Lot 29, Lot 40, and the restricted hotel lot adjacent to Holland Mall. In total, all City-owned surface lots assigned for monthly use generated approximately \$150,000 in annual revenue in 2011/2012. The monthly cost to lease a space within a City-owned surface lot is \$45.00. Currently there is not a waiting list to lease monthly spaces within any City-owned surface lots.



City-owned parking garages currently have approximately 3,050 monthly permits issued. This number accounts for approximately 90% of the parking inventory in the garages in which those monthly users are assigned. Table 6.3 lists the number of spaces in each garage and number of issued monthly permits for each.

Table 6.3 – City-Owned Parking Garage Monthly Permits

Garage	Inventory	Monthly Permits Issued
Corcoran Street	554	685
Church Street	409	275
Chapel Hill Street	360	435
Durham Centre	719	403
North Deck	1,320	1,255
Total	3,362	3,050

Lanier Parking Solutions has a policy to oversell monthly spaces in a facility by 15%. This means that the number of permits issued to a facility can exceed the allotted number of monthly permit spaces by 15%. The reason for oversell is to account for the days/times in which monthly users do not need access to their parking space due to personal vacations, sick days, off-site meetings, etc. This practice maximizes the revenue potential for a specific facility; however, is not currently required as the monthly permit demand does not exceed the allotment of monthly spaces within City facilities.

Monthly parking rates within a City-owned garage are \$55.00 for a typical spaces and \$70.00 for a reserved space. In 2011/2012, the City-owned parking garages generated approximately \$890,000 of revenue specific to monthly lease contracts. Currently there is not a waiting list to lease any monthly space within City-owned garages.

In 2011/2012, the City of Durham generated approximately \$1,040,000 of revenue from monthly leases within off-street surface lots and garages.

Currently, the City engages in long term lease agreements with Capital Broadcasting to provide 1,015 spaces within the North Deck at a contracted rate and duration. In addition, the City has recently committed to long-term agreements with the hotel development occupying the Sun Trust building. The remaining monthly leases in off-street parking facilities are handled on a month-to-month basis. The benefit of a long-term lease agreement is a more consistent, predictable revenue flow over a period of time, likely making it easier to validate revenue generation when considering financing for new projects.

An example of alternative pricing for large monthly parking customers is evidenced in the City of Asheville, NC, where a reduced rate per space is offered to large customers purchasing several spaces on a monthly basis, rather than incentivizing long-term leases. In this specific case, if a business were to lease five to nine spaces on a monthly basis, they would receive a 10% discount off of the normal monthly rate. Further, if a business were to lease ten or more spaces, they would receive a 15% discount. While this strategy doesn't involve reducing the cost per space for a long-term lease, it does incentivize purchasing monthly parking in "bulk". This strategy provides benefit to local businesses with reduced parking rates for high volume customers, while allowing the City the flexibility to adjust monthly rates and parking operation strategies when the time is appropriate, rather than having to navigate long-term lease agreements. This type of alternative pricing is more financially beneficial to a City; however, still represents a reduction in revenue potential in a facility.

Hourly Users

Hourly users provide the second highest source of off-street parking revenue. All hourly parking occurs in four of the five City-owned garages (Church Street, Chapel Hill Street, Corcoran Street, Durham Centre), and one of the City-owned surface lots (Lot 8). In 2011/2012, hourly parking revenues in these facilities totaled approximately \$622,000. Table 6.4 lists the 2011/2012 revenue from hourly users for each of these facilities.

The Durham Centre garage, Chapel Hill Street garage, Church Street garage, and Corcoran Street garage, provide hourly parking at a rate of \$1.00/hour, up to a daily maximum of \$8.00. Hourly parking in Lot 8 is provided at a rate of \$2.00/hour with a daily maximum of \$10.00.

Hourly users are charged the described rates between the hours of 8:00 AM and 7:00 PM, Monday – Friday. Visitors to Downtown Durham are free to use these facilities outside of these hours, and holidays, at no charge, with the exception of special events.

Table 6.4 – 2011/2012 Hourly Revenue

Facility	2011/2012 Hourly Revenue
Church Street	\$ 181,366
Chapel Hill Street	\$ 73,860
Corcoran Street	\$ 53,567
Durham Centre	\$ 76,599
Lot 8	\$ 237,076
Total	\$ 622,468

Special Event Parking

Special event parking is the third component to off-street parking revenue. All special event revenues in 2011/2012 were collected in four of the five City-owned garages (North, Durham Centre, Corcoran Street, and Church Street). Special event parking is advertised on the City of Durham website at the fifth City-owned garage (Chapel Hill Street); however, no revenue was collected from this facility in 2011/2012 for special events. As part of the lease agreement the City has in place with the Blackwell Street Management Company, the City receives 35% of the gross special event revenue generated from the North Deck. Special event parking totaled approximately \$204,000 in revenue in 2011/2012. Table 6.5 lists the 2011/2012 revenue from special events for each of these facilities.

Table 6.5 – 2011/2012 Special Event Revenue

Facility	2011/2012 Special Event Revenue
Church Street	\$ 8,494
North Deck	\$ 123,736
Corcoran Street	\$ 20,729
Durham Centre	\$ 50,739
Total	\$ 203,698

All City-owned garages provide special event parking at a rate of \$2.00/vehicle, with the exception of the North garage where the rate is \$4.00/vehicle.

Special events are dictated by the schedules of the surrounding event venues, including the Durham Performing Arts Center, Durham Bulls Athletic Park, and Carolina Theater, just to name a few. Attendants are staffed based on anticipated attendance, which is communicated by each venue, but an overwhelming majority of events are staffed with one attendant per facility. Each attendant is issued a predetermined number of sequenced two-part tickets that are sold as vehicles enter the garage. One part of the ticket is intended for display on the vehicle's dashboard, while the other remains with the attendant. Following the event, the number of tickets sold is reconciled with the revenue collected at the end of the event. Typically, events are staffed for three total hours (two hours before the event start time and one hour after the event begins); however, modifications to this schedule are occasionally required.

Off-Street Enforcement / Fines

Off-street garages and surface lots are enforced by Lanier Parking Solutions, who contracts with the City of Durham to provide operations and enforcement of all parking within the Downtown study area. Surface lots are enforced in a similar manner to that as described in the on-street enforcement / fines section. The parking garages are typically enforced less, as offenses are primarily limited to misparked vehicles. Site security or maintenance personnel are typically relied upon to enforce these types of violations. Should a citation be issued, the fine and process of payment is as described in the on-street enforcement / fines section.

Residential Parking

The City of Durham offers a program for residents of Downtown Durham that allows them to park in their assigned garage for a monthly fee of \$10. This is not a reserved space, but allows them access to the facility to find a parking space. This program, which was established in May 1999, allows holders of a residential pass access to the garage between the hours of 6:00 PM – 8:00 AM, Monday through Friday, and 6:00 PM Friday through 8:00 AM Monday. The original intent of this program was to incentivize residents to live downtown by providing them a location to park their vehicle during overnight hours. Holders of these residential permits are required to pay current hourly rates if they enter the garage before 6:00 PM, or exit after 8:00 AM

In 2004 it was discovered that some of the holders of these permits had been allowed to park without paying the monthly fee. At this time, the City decided to waive this fee for all residential permit holders until such time a parking study was completed.

The City has issued 121 residential parking permits. Due to limitations of the parking revenue control equipment, it was impossible to track the usage of these permits prior to March 31, 2013. For the 45 day period from March 31, 2013 to May 15, 2013, residential permits were read 7,256 times.

While waiving the fee was appropriate for reasons of equity, it is recommended the City reinstitute a monthly charge for residential parking permits. Due to increases in operating costs since the original rate was established 14 years ago, it is recommended the fee for a residential parking pass be set at \$20 per month. This rate will allow permit holders to enter the garage after 6:00 PM and exit prior to 8:00 AM Monday through Friday and 6:00 PM Friday through 8:00 PM Monday. Users attempting to ingress or egress the garage at times other than those hours will be charged the standard hourly rates. The City should consider phasing out this permit at this cost and phasing in residential permit rates across the board that more closely align with current market rates.

During the stakeholder outreach, some expressed the desire to have a residential parking permit that provides 24/7 access to a reserved parking space within the garage. The existing rate for a reserved space, 8:00 AM – 7:00 PM, Monday through Friday, is \$70 per month. It is recommended that the City offer a 24/7 reserved space permit at a monthly rate of \$90. Two options are available to provide reserved parking with the garage. One approach is to identify a specific area within the garage and have the parking stalls striped in a different color from the visitor parking stalls and sign these spaces as reserved for specific permit holders. This approach would require concentrated enforcement to ensure the residential parking spaces were not being parked in illegally by others. An alternative approach would require a gated, or nested, area of parking within the garage that is accessed with the residential permit. This is an expensive option to incorporate into existing garages as each would require retrofit to install card readers, access gates, loop detectors, and appropriate power and communication infrastructure.

For residents that desire to have parking access during the day, as well as nights and weekends, but do not require a reserved space, they have the option to purchase a typical off-street permit at a current rate of \$45 per month for surface lots and \$55 per month for garages, which allows access during normal operating hours. There is currently no charge for parking in City-owned facilities during nights and weekends, thereby resulting in

24/7 access, albeit not reserved parking, for the cost of a typical monthly permit. Note that this study recommends the monthly rates for typical permits to be increased by \$10 per month to \$55 per month for surface lots and \$65 per month for garages.

Long-Term Lease

Long-term leases have become of interest to several stakeholders within Downtown Durham. A long-term lease in this case is defined as the lease of a parking space for a long term period (6-, 9-, 12-months or longer), thus securing a parking space for an extended period of time.

Administering long-term leases could also prove to be challenging and costly for a City. For instance, should the City decide to implement a rate change to all of their monthly permit holders, there would likely need to be a phased approach, as long-term lease holders may have an agreement that does not align with other long-term lease holders. This could result in two permit holders in the same facility being charged for their space at two different rate structures.

There is a benefit for long-term leases that should be understood. As the City continues to grow and the demand for parking continues to increase, the need for additional parking inventory is likely required. A long-term monthly lease program could provide consistent and predictable parking revenues.

Currently, the City has an agreement with the hotel that will occupy the Sun Trust building to provide long term monthly leases. The Sun Trust development commitment is 50 permits and those users are assigned to the Corcoran Street garage at the going rate.

Long-term lease agreements are common with hotels. As development continues in Downtown Durham, so does the need for hotels. Currently, there is a hotel project underway within the Downtown Loop in which the developer for the project has had conversations with the City regarding leased parking spaces dedicated for hotel use. Typically, the way this situation is handled in other municipalities is that under a multi-year agreement parking spaces are committed within a specific parking facility up to a maximum amount per day. For instance, the City of Asheville, North Carolina commits up to 115 parking spaces per day in one of their facilities to an adjacent hotel at a specified rate. This agreement is in place for a total of 25 years, however, is structured such that the City can adjust the rate once annually, limited to a percentage as defined in the agreement between City and hotel ownership.

If the excess parking supply in a facility is available and dedicated spaces can be isolated, hotel leases can prove to be beneficial for a municipality. The long-term agreement communicates to hotel ownership that the City is dedicated to their presence in Downtown.

It is recommended that the City continue their willingness to negotiate with potential hotel developments regarding leasing of parking spaces.

Bulk Lease

Bulk leasing refers to a person or business desiring to lease many spaces under one agreement for a reduced rate per permit. For instance, a business leasing 10 spaces for their employees at a rate that is some percentage less than the typical month-to-month permit rate. Similar to the long-term lease scenario, this could represent a large loss in potential revenues for the City.

The City of Asheville, North Carolina does have a bulk lease program in which businesses that lease 5 – 9 monthly spaces receive a 10% discount on the normal monthly permit rate. Similarly, businesses that lease 10 or more monthly spaces receive a 15% discount. The typical normal monthly permit rate for these spaces is

\$80.00 per month, which equates to a potential loss of revenue of approximately \$1,000 per year per 10 parking spaces leased in bulk.

The benefit associated with securing funds for Capital Improvement Projects, as described in the long-term leases section, does not translate to bulk leases, as long-term leases contractually commit monthly permit revenues to the City by the user over a period of time, whereas bulk leases remain a month-to-month commitment similar to typical monthly leases.

Considering the current financial deficit at which the Parking Fund operates, it is not recommended that a bulk lease program be implemented, as the loss in potential revenue is too great.

City and State Owned Vehicles

The locations in which City and State vehicles are parked and stored was an area of concern that surfaced during the public and stakeholder outreach efforts. Currently, the top level of the Chapel Hill Street parking garage is isolated and reserved for the storage of City owned vehicles during evenings. During the day, the space is open to the public for parking, though the gates and fences provide the appearance that parking is reserved for City vehicles only. There is a policy that requires City vehicles to park in the upper levels of the garage, leaving the lower levels and adjacent surface lot for public hourly users, making it more convenient for those that park for shorter periods of time.

It is apparent that this policy is not always abided. Combining this with the loss of inventory dedicated to City owned vehicles on the upper level, the Chapel Hill Parking garage is a frustrating facility for the public to use and as a result could be missing out on potential revenue.

It is recommended that City and State owned vehicles be relocated from the Chapel Hill Street garage to make more revenue generating spaces available for public use, as this facility is at a prime location within the Downtown Loop. The Durham Centre garage is not utilized as heavily as the Chapel Hill Street garage, therefore, could be a more ideal location for storage of City owned vehicles; however, other surface lots on the east end of the Downtown Loop could be considered. The disadvantage associated with such relocation of City owned vehicles is the reduced productivity of City staff that would then be required to walk further to get to City Hall, when compared to the current walk from the Chapel Hill Street garage.

Access and Revenue Control Equipment

The entry / exit points for hourly users are operated by parking attendants during normal operating hours (8:00 AM – 7:00 PM, Monday – Friday). According to the City of Durham website, the current method of payment accepted at these locations is cash, check, or pre-paid validation. After normal operating hours, the parking access control gates are raised and vehicles are able to enter and exit freely without the need to pull a ticket or pay for the duration of their stay. This method of operation results in the loss of revenue for those that pull a ticket prior to 7:00 PM, but exit, without paying, after 7:00 PM when the gates are up. To capture this loss of revenue, the City plans to operate facilities such that access gates are down 24 hours per day requiring users to pull a ticket no matter the time of day or day of week they enter. However, upon exit, users will only be required to pay for the portion of time they used the facility during normal operating hours (8:00 AM – 7:00 PM, Monday – Friday).



Some facility monthly entry / exit points are operated by access control equipment. These are typically located in the City-owned garages. Some monthly parkers use surface lots; however, some of these lots do not have

equipment and manage access through the use of issued permit stickers or hangtags. Where access control is in place for monthly entry / exit points, digital card reading machines are in place to allow the user to enter the facility without the need to take a ticket.

As of a couple years ago, the overwhelming majority of access and revenue control equipment used by the City of Durham was severely outdated. Over the past couple years the City has replaced the parking access and revenue control equipment in the Durham Centre, Corcoran Street, and Chapel Hill Street garages and are currently in the process of equipment upgrades at all other facilities. This new equipment generally consists of new ticket spitters, pay stations, access control gates, parking control booths, fee machines, and processing/management software. Typically, parking equipment has a reasonable service life of approximately 7-10 years. Equipment aged beyond this timeframe becomes costly to properly maintain, and is typically surpassed by technology advancements resulting in a parking system that is not as efficient to operate and manage as it could be. Newer technology typically allows an owner to better manage the facility and parking system through improved data collection and reporting capabilities, including occupancy and length of stay, auditing capabilities, as well as the potential to decrease personnel costs.

The City has several surface lots where access and revenue control equipment is not used to manage the use of the facility. Rather, hangtags are utilized to identify a vehicle as being permitted to be in the specific lot. In these cases the City should continue this management strategy and enforce the lot appropriately to protect the facility for those that purchased a permit.

Facility Security

An item of interest during the public involvement process, as well as discussions with the Parking Study Team, was security in and around downtown parking facilities. There is the perception of a lack of security, especially in the parking garages, primarily attributed to the lack of lighting, level of security presence, and vehicle break-in incidents within the facilities.

Currently, security guards patrol the City-owned parking garages from 5:00 PM – 12:00 PM, seven days per week. The Durham Centre and Chapel Hill Street garages each have a dedicated security guard during this time and the Corcoran Street and Church Street garages share one security guard that patrols both facilities. Between the hours of 12:00 PM and 8:00 AM there are no security guards on duty; however, the police department patrols all garages periodically.



Inadequate lighting within parking facilities, including alleys and other public-ways adjacent to facilities, were of concern to many surveyed in the public involvement process. Lighting within City-owned facilities was aged and has recently been improved in the Durham Centre, Church Street, and Corcoran Street garages. Lighting in the Chapel Hill Street garage is aged and should be considered for replacement in the near future. Replacing the existing fixtures in the Chapel Hill Street garage with new energy efficient fixture will allow improved lighting levels and reduced energy costs concurrently.

A feature in many garages related to security of the facility is the presence of security cameras. When cameras are located in a facility they are either monitored 24 hours per day by someone, whether it be in-house staff or a contracted third party, or they are set up to record to a DVR, allowing the ability to go back and review recorded video should an incident occur. The potential risk of having cameras without 24 hour monitoring is that cameras

in a facility give the perception of complete safety, when in reality, that is impossible to provide. This situation could pose a liability risk to owners of a facility. Currently, the City has security cameras installed in the Corcoran Street garage and the North Deck. Should the City consider installation of cameras in other facilities to help improve the perceived security in their garages, it is highly recommended that the City Attorney and City Manager be heavily involved in the process to minimize unwanted liability. In addition, further study, specifically focused on the security and use of cameras at garages should be considered.

Wayfinding

The City of Durham currently uses a pedestrian level wayfinding system that uses color coding and district naming to help pedestrians navigate the City. A similar concept for parking signage is not currently in place within the Downtown study area. There is signage located throughout the City that directs patrons to parking facilities; however, the signage is aged, inconsistent in design and continuity, and sparse in several locations. Exterior signage is located on each City-owned parking garage, but again, this signage is aged and inconsistent between facilities. Better delineation of City-owned parking facilities, through the use of City-wide branding, wayfinding signage, and exterior signage would make the facilities more visible and attractive to downtown visitors. A more complete review of existing wayfinding and recommended improvements is provided in a subsequent section of this document titled “Wayfinding and Parking Guidance.”



Parking Management

The City of Durham does not have a dedicated department internally that manages every aspect of the parking system, including operations, maintenance, and facility improvements. Rather, City-owned parking facilities are the responsibility of several City departments. The City of Durham Department of Transportation holds the primary responsibility for the parking system by managing operations of the facilities, including providing access to monthly, hourly, and special event users. In addition, the Department of Transportation oversees a contract between the City and Lanier Parking Solutions, who is the contracted entity responsible for the day-to-day operations and general housekeeping maintenance, as well as on- and off-street enforcement of parking regulations. Finally, the Department of Transportation is responsible for auditing and reporting parking facility specific revenues and expenses. One staff member within the Department of Transportation is dedicated to parking specific tasks, including administering the Lanier Parking Solutions contract and auditing revenues and expenses.

The City of Durham General Services Department is responsible for the physical condition of the facilities, including structural and other infrastructure maintenance and repair. These responsibilities include facility assessments and construction of repairs and upgrades, including, but not limited to, structural systems, architectural features, mechanical, electrical, and plumbing systems.

Considering that parking in City-owned facilities is a multi-million dollar revenue generator, it is recommended that the City consider increasing the number of staff that is actively involved in the management of parking, including overseeing the Lanier Parking Solutions contract, disbursement of monthly parking permits, revenues, and expenses, management of strategic planning initiatives such as updating parking studies, new development parking needs, on-street curb management, facility improvements, wayfinding and signage, and overall parking system perception. A more detailed description of examples of parking management organizational structures that could be considered for implementation in the City of Durham is provided in a subsequent section of this document titled “Parking Management Organizational Options.”

7 | Technology Overview

This section provides a summary of technology available in the current parking industry. The majority of this section focuses on on-street payment technologies, including Pay-by-Space Meters, Pay-and-Display Meters, Credit Card Capable Single Space Meters, Pay-by-License Plate Meters, Pay-by-Cell, and other smart phone applications. The latter portion of this section provides an overview of electric vehicle charging stations.

On-Street Payment Technology

As part of this study, paid on-street parking is a recommendation for implementation within certain areas of Downtown Durham to encourage turnover of on-street spaces and higher utilization of off-street facilities, as well as a revenue generator to support the operations and management of the parking system. As a result, on-street payment technology types were investigated and a description of each is included below.

Pay-By-Space

Pay-By-Space is a multi-space meter operational methodology that has grown in popularity recently. The user interface is initially more complicated, but has definite advantages that need to be considered when assessing multi-space meter selection and implementation.



This methodology first started in the off-street lots as a replacement option for manual “slot box” systems. These simple “slot box” systems allowed motorists to note the space number where they parked their vehicle, go to the “pay box or honor box,” and slip in the proper payment for the amount of time desired into the slot that corresponded to the space number. This allowed the lot to be minimally monitored by the parking operator. Once the electronic version of the honor box was developed (the Pay-By-Space meter) this methodology then migrated to on-street parking where it has grown in popularity.

The basic premise of the Pay-By-Space methodology is that the motorist parks in a space, notes the space number, and proceeds to the closest multi-space meter located near their vehicle. In an on-street application, there are usually one or two machines per block face.

The motorist operates the multi-space meter as directed by the manufacturer’s instructions. Some of the newer meters have instructions right on their digital displays, giving the motorists step-by-step instructions on how to pay for their parking. They also may offer various options at the time of purchase such as the ability to add time or use coupons or special payment cards or codes. The motorist then takes their receipt and continues onto their destination (without having to return to their vehicle to display the receipt).

If all the Pay-By-Space machines are networked, the motorist could actually add more time for their space number at any meter (not just the one on the block face where they parked) as long as they did not exceed the time limit that applied to their



space. The amount of additional time allowed can be assigned on a space-by-space basis as defined in the parking policy rules of the governing agency.

Another important element of a Pay-By-Space system is the need to number each space. Some argue that this requirement defeats the use of multi-space meters to “declutter” the streetscape.

In some southern environments with warmer climates space numbering can be accomplished by painting space numbers on the pavement or curbs. However, in northern cities with significant snow accumulation, pole mounted signs are a requirement.

Pay-And-Display

The Pay-and-Display system has the greatest portion of market share in the U.S. partly because it was the first model introduced after individual meters. The motorist parks, then walks to a multi-space meter operating in Pay-and-Display mode. The motorist pays for the desired duration of parking using coin, cash, credit, or smart card and receives a receipt for payment. The parking patron then returns to their vehicle and displays the receipt on the dashboard with the expiration time visible. The displayed receipt proves to the enforcement staff that the space has indeed been paid for through the time printed on the displayed receipt.

There are several reasons for the more widespread application of Pay-and-Display systems:

- Pay-and-Display has been in use longer than Pay-By-Space.
- Europe uses Pay-and-Display almost exclusively and only recently have they even considered Pay-By-Space.
- Pay-and-Display is favored for areas that have significant snowfall in the winter. This is because it is more problematic to keep space numbers visible (a requirement for the Pay-By-Space methodology) with snow or ice on the ground. There also are potential problems with snow removal tools accidentally causing damage, to the numbers used in a Pay-By-Space system, as well as vandalism.
- Pay-and-Display is a simpler technology to manage as an owner and use as a patron.



Credit Card Capable Single Space Meters

A viable alternative to multi-space meters that provides many of the primary benefits (regarding improved customer payment options, ease of use, and back-end software support) is credit card capable single space meters. The main detractor to single space meters is the quantity that is required to be installed, resulting in some cases in a “cluttered” look to the streetscape and crowding of sidewalks. Currently, only a few vendors provide the option to retrofit current single space meter housing with an electronic mechanism that can perform on-line credit card transactions as well as continued acceptance of coin, smart card, and cell phone payments. Credit card capable single space meters need to meet the Payment Card Industry (PCI) security standards. Credit card transactions are encrypted and authorized, and only the last four digits of each credit card number are stored within the meters for security purposes.



Pay-by-License Plate

Pay-by-license plate is an operating methodology that has been brought from Europe to the U.S. and Canada. Rather than using space numbers, this operating method requires motorists to pay for parking by entering their license plate number (as well as parking zone, if applicable) into a multi-space meter or cell phone payment system.

While this works well in Europe, this methodology has been slower to take hold in the U.S. due to U.S. license plate numbers. Europe uses a standard license plate with straight-line numbers assigned by country. Europe does not allow vanity plates or special characters. In the U.S. the numbering systems varies by state with special plates, vanity plates, special characters and other items that complicate the entering of the number. The success of the system will be contingent upon motorists remembering their own specific license numbers and the ability of the system to accept specialized information.



Below are the fundamental steps in the pay-by-license plate/zone process:

- Vehicle parks in a zoned area
 - Each metered space is located within a zone, with signage indicating zone numbering
 - The motorist uses multi-space meter or Pay-by-Phone option for payment
 - The motorist enters zone and license plate information
 - The motorist pays applicable parking rate
- License plate and payment information stored in a real-time database
 - License Plate Recognition (LPR) equipped vehicle patrols zones
 - LPR Patrol takes digitized picture of parked vehicle's license plate
- LPR Patrol Communicates with system database
 - Database informs LPR Patrol of vehicle's payment status
 - If expired, a violation with photo, is processed and mailed to the vehicle owner
 - LPR Patrol continues route enforcement

Pay-by-Cell Phone

The Pay-by-Cell Phone is just as it sounds. Once the motorist has parked their vehicle, they then call a phone number, usually located on a sign or the parking meter, enter the space number they're parked in and then hang up. There is an initial, one-time set-up where a credit card number is matched with a phone number. After the initial setup, the system then uses caller ID to match the user with the account or another type of account ID.

Pay-by-Cell Phone has been in use for a few years, however, the latest utilization numbers indicate that only 3% of those parking in a location that supports this



technology use it on a regular basis. However, many parking professionals see this as the parking technology with the great potential going forward.

The big advantage of this type of system is the ability to add time remotely from your cell phone, especially in commuter lots. If the motorist, who planned to stay half an hour, decides to extend their trip for additional shopping or dining, they can call the number provided and add time to their parking to avoid a violation. Once the customer has paid for the maximum time allowed (per posted time limits) adding more time is not allowed.

Smart Phone Applications

Similar to the pay-by-cell phone methodology described previously, the motorist is able to find and pay for their parking transaction using a smart phone application. This technology is relatively new, and is currently in limited markets. The motorist must download the application to their Smart Phone. The application could either be free or cost a nominal purchase fee (usually less than \$5.00).

Most applications require the motorist to register online or through their phone prior to the first usage. The motorist will have to store a credit card on file, just like the pay-by-cell phone system. After initial registration, the motorist locates a parking meter, opens the application, and then pays for their transaction.

Some of the newer applications not only allow you to pay for parking, they also help you locate available parking. One of the early methods of this premise relied solely on its network of application users. For example, users of OpenSpot, developed by Google, could use the application not only to find parking, but also to notify other application users of available parking. The methodology included opening the application and indicating that you had left a spot, which notified other users of the space, and gave you “Karma Points” which indicated your level of parking generosity. While a primitive method — albeit, with a tech savvy approach — for locating parking spaces, it symbolizes that the parking public is looking for easier methods to find open spaces and reduce cruising.

Newer and more advanced applications that use either parking operator back end data or in-street sensors are able to actually provide real-time occupancy information and location of available spaces. These applications are relatively new and are being marketed as a solution for cruising and delay related to hunting for that last on-street space. These applications also let you pay for parking, and just like the pay-by-cell phone method, will provide you notifications when you are about to exceed your time and allow you to add time up to the regulated limit.



BENEFITS OF CELL PHONE BASED PARKING SOLUTION

The previous sections described some of the newest technologies available for the implementation of paid on-street parking. The on-street parking revenue control industry has evolved considerably in the past 77 years, since the first meter was installed in Oklahoma City. The meters of that era used coin operation, twist dials to engage, and visible flags to indicate whether parking was in violation or not. That type of meter was in place for 40+ years, until a digital model was developed, which replaced mechanical parts with electronic components. Then in the late 1990s, the industry took a turn into the technological revolution and began to evolve at a rapid pace, introducing multi-space meters, in-car metering, in-space sensors, cell phone payment systems, and today's most recent evolution, the single space credit card meter.

Looking at recent trends, the industry is definitely moving at a rapid pace, and the technologies that are new today could very well be outdated within a few years. With that in mind, it is prudent to look forward to see the next iteration of solutions to ensure implementations and capital investments are targeted wisely. When looking at other communities throughout the country or other countries throughout the world, the one trend that seems to be catching on quicker than others is the move to mobile payment technologies.

Many cities throughout Europe and the Middle East have moved to a pure pay-by-phone parking environment in the past 5 years, reducing their capital expenditure and increasing access for customers. Within the past year, several communities in the U.S. have begun to experiment with this type of system, implementing pilot areas to measure acceptance and potential for revenue offsets.

The initial reluctance to institute a pay-by-phone only system was the perception that the system would not be equitable. More directly, how would those citizens without cell phones pay for their parking? Well as cell phones become a more integrated part of society, that fear is dwindling. According to research by the Pew Research Center, 88% of Americans own a cell phone. Even more important, 46% of Americans own a smartphone and use their cellular devices for more than phone calls, a trend that is escalating quickly (with another estimated 10% bump by the end of next year).

With these statistics and the continued evolution of the cell phone, is it any surprise that pay-by-phone payment methodologies are popping up in communities everywhere? Pay-by-phone is not a new concept, but its acceptance is at an all-time high. And for the first time since its introduction in the U.S., we are starting to see communities consider all Pay-By-Cell systems. Think about some of the benefits:

- The user pays an overwhelming majority of capital and maintenance costs – the only equipment needed is the user's cell phone
- The user only pays for the time that they park – the transaction is engaged at the beginning and can be disengaged when completed
- The user can get notifications before they go over time, allowing for remote addition of time or advanced notification prior to violation
- Integration of smartphone applications allows for wayfinding, payment, management, enforcement, and communications all through the user's smartphone
- Most systems have robust back-end management systems that can provide advanced management of the parking system
- Transaction and gateway costs (sometimes as high as \$0.16 per transaction with traditional meters) are negated or passed on to the consumer

¹ <http://pewinternet.org/Reports/2012/Smartphone-Update-2012/Findings.aspx>

Electric Vehicle Charging Stations

The City has a goal to “encourage the use of plug-in electric vehicles in Durham as a substitute for petroleum powered vehicles to help achieve community-wide quality of life and greenhouse gas emissions reduction goals”.⁶ As of the issue date of the *Durham City-County Electric Vehicle and Charging Station Plan* (December 2011), there were fourteen total EV charging stations installed, or currently planned, within the City, with goals to continually increase the number of stations throughout the upcoming years. The *Durham City-County Electric Vehicle and Charging Station Plan* outlines design standards and characteristics, as well as several priority locations for future charging station installations, many of which would require retrofit within existing facilities. Installation of charging stations within existing facilities will result in higher installation costs per space, as the infrastructure for the station will be required to adapt to the site condition, rather than programming the station into the original design of the facility.



As the City begins to implement charging stations, specific planning and thought needs to be given to time limits, parking charges, and vehicle restrictions. Initially, the use of this technology may be low and the City may be able to operate the spaces like any others within the downtown. However, as demand for these spaces increases, the City will need to restrict usage to electric vehicles that are charging only. Enforcement of these spaces should include a fine high enough to deter regular vehicles from parking in the space (\$50.00 per citation, for example).



If the City installs charging stations serving on-street spaces, they may need to address time restrictions to allow for sustained charging operations. However, the City should not allow unregulated parking by charging vehicles, as some parkers will take advantage of the service. The City should work with the charging station vendors to identify appropriate time limits that allow for suitable charging without losing the space to a lone charging vehicle for an extended period. As with all other spaces, electric vehicle charging spaces should be subject to peak hour restrictions and associated fines and towing.

As the vehicle charging station industry continues to advance, the City should periodically review technological advances and adjust the City-County Plan as appropriate. No matter the quantity and location of vehicle charging station installations, the following policies are recommended to be applied to the use of these dedicated spaces:

- Users of an electrical vehicle charging station space should be required to pay for the use of the space in a manner that is consistent with the facility in which it is located.
- Electric vehicle charging station spaces should be reserved for electric vehicle use only. Use of this space by non-electric vehicles should be ticketed.

⁶ Durham City-County Electric Vehicle and Charging Station Plan, December 2011



- Use of an electric vehicle charging station space should be time restricted, to minimize the situation of one vehicle occupying the space for an entire day. The time limit should be determined on a case by case basis and be based on the charging duration requirements of the equipment being installed.

Finally, the City should develop a graphic to be included on the City website, specifically the Parking page, which locates the publicly available electric vehicle charging stations within the City. As the City continues to grow its electric charging vehicle station inventory, this graphic should be updated such that maximum utilization of installed charging stations is achieved.

8 | Wayfinding and Parking Guidance

An important aspect of any parking system is the way in which the public is informed of parking facility locations, space availability, time restrictions, parking rates, and other related aspects of the system. This information is often delivered through maps developed and distributed by a variety of sources, including garage and parking lot signage, wayfinding signage and various agency websites. In addition, the evolution of technology has established an environment where real-time information is essential to the traveling public. Motorists now rely more than ever on the internet, devices such as smart-phones and in-vehicle navigation, and en-route real-time displays for finding their destination and the closest parking space. This chapter explains the current methods used for dissemination of parking information, discusses industry best practices, and provides recommendations specifically tailored to the Durham system.



Existing Information and Signing Program

There are a number of ways for motorists to obtain travel and parking information in Downtown Durham. Final destination points such as the Durham Bulls Athletic Park (DBAP), the Durham Performing Arts Center (DPAC), restaurants, City Hall, and others may provide directions and parking information on their respective web-sites. Motorists also depend on online mapping services for routing directions and the existing wayfinding and signing program in downtown Durham to lead them to their desired destination. Ensuring that each of the information sources provides accurate and consistent information will affirm confidence in downtown visitors.

Downtowndurham.com provides a variety of information about Downtown Durham, including mapping that divides downtown Durham into districts to support branding and wayfinding. There are seven districts – American Tobacco District, Brightleaf District, Central Park District, City Center District, Golden Belt District, Government Services District, and Warehouse District. These districts also are found on the Wayfinding signage in downtown. As shown in the photo to the right, wayfinding signage associates varying downtown districts with a distinct color.

While district and destination wayfinding in Durham is relatively consistent, there is room for improvement to provide a more navigable Downtown. An array of directional and destination signage is currently being used throughout the City; however, the signage is predominantly pedestrian in nature. Pedestrian level signage typically utilizes smaller text and graphics aimed at navigating Downtown visitors who are on foot. Conversely, vehicular level signage uses larger text and graphics for drivers moving at higher speeds than those on foot. Figure 8.1 provides a snapshot of the variability in parking signage throughout the Downtown study area.





Figure 8.1 – Typical Signage in the City of Durham

Methods for Improvement

Branding and Information Campaigns

The existing signing program in downtown Durham lays the groundwork for expansion. Maps displaying the color coded Districts are accessible from the City’s webpage as well as from a Google® search of downtown Durham parking. These maps display visual locations and addresses of parking, shopping, and restaurants in each District.

The signing program expands on this by using color coded signing for destinations and Districts. The cities of Charlotte and Atlanta both use district or zone color distinction similar to Durham. Figure 8.2 and Figure 8.3 depict each city’s pedestrian and vehicular wayfinding signs. Charlotte’s system also incorporates a dynamic element for communicating parking information that allows the City the ability to modify directional signage should there be the need to provide alternate routing throughout Downtown to minimize congestion. Dynamic signage also allows the owner the ability to communicate street closings, events, or other useful information. With each of these programs, consistency in graphics and message is crucial to success.

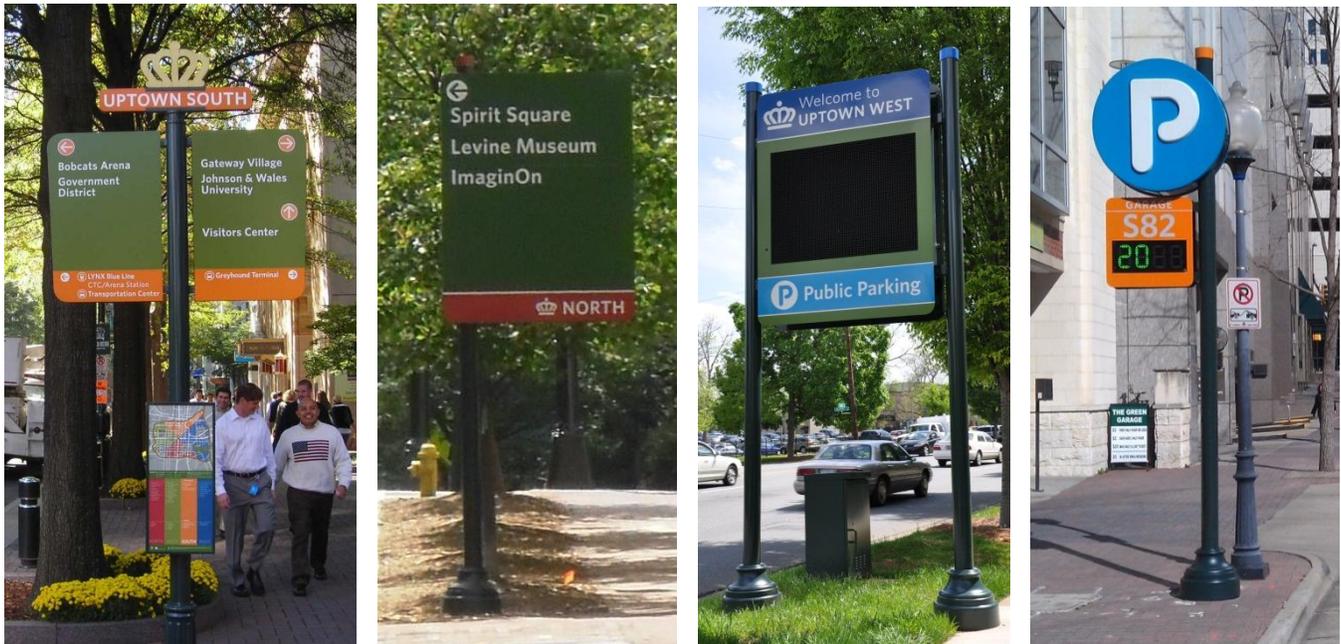


Figure 8.2 – City of Charlotte Branding Campaign

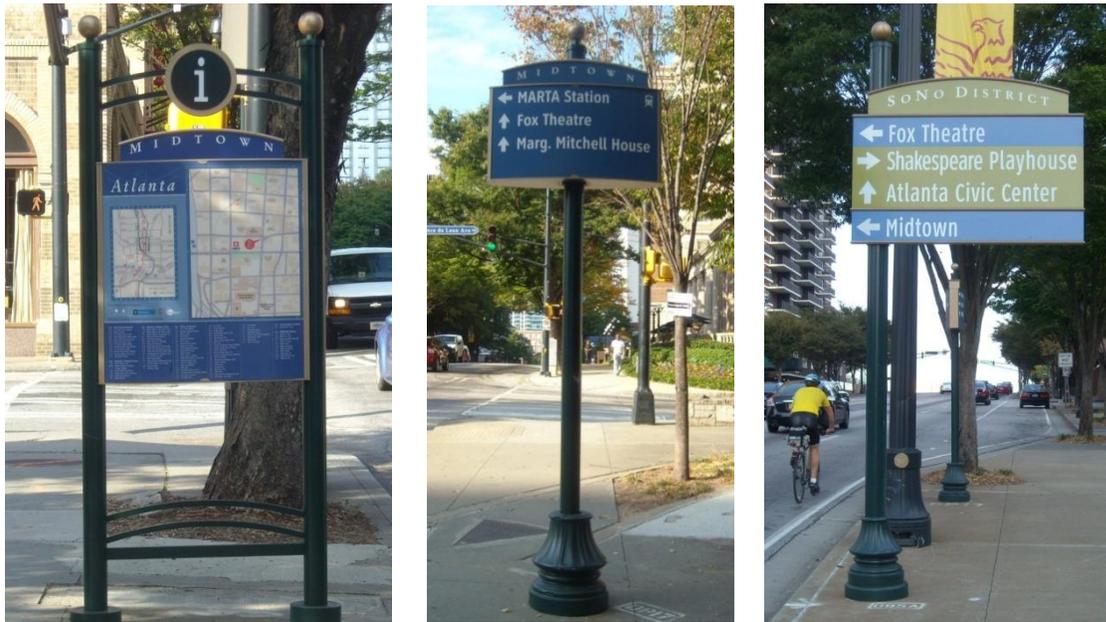


Figure 8.3 – City of Atlanta Branding Campaign

With the framework in place for consistent signing, getting the message out to the public is the next step. An information or ad campaign on how the districts are divided and why is helpful for people to understand the districts in which they eat, drink, work, and play. One option, as seen on Charlotte’s pedestrian signs, is to reinforce the district coloring by providing an overall map on the sign pole. Displaying the city color coded map, creating map pamphlets, and posting it on websites. Any opportunity to reinforce the color branding will aid in making people aware of how to use the wayfinding program most effectively.

Parking Guidance

Providing drivers advance information about their destination offers a sense of security and confidence for drivers as they navigate both familiar and unfamiliar territory. Providing this information in real-time is increasingly becoming the expectation. While attractions are the end destination for most people, from a driver's perspective the destination is parking. Real-time parking information and guidance will reduce the number of vehicles circulating for available parking, making the City less congested and safer from both a motorist and pedestrian perspective.

There are various means of providing parking availability information, from typical static signing, dynamic signing, websites, and mobile applications, each of which sets out to achieve the same goals:

- Reduce time spent searching for parking
- Reduce circulation searching for parking thereby providing a safer environment for other drivers and pedestrians
- Reduce fuel consumed searching for parking

Many of these types of systems have been deployed in large parking facilities with multiple levels (at airports, for example), where there would be a sign at the facility entrance displaying available parking on each level. In a downtown area, the parking is more likely to be spread over several blocks rather than located within one facility. Therefore, the point where information is conveyed is not necessarily the entrance. Drivers need information far enough in advance to make decisions about which direction has available parking. These types of parking guidance systems are very popular in European countries and have recently been gaining popularity in the U.S.

System Inputs

There are a number of operational and design considerations to take into account to ensure the implementation of the most effective guidance system. The first question to consider is, "what facilities will participate in the program?" It is expected that facilities willing and able to provide electronic, real-time, parking availability would be the most likely candidates. Having automated data from a reliable system or device will eliminate the opportunity of human error. When it comes to data collection from a facility and transfer to signage, there are a number of technological approaches possible. Installing inductive loops at facility entrances and exits to monitor vehicles entering and exiting is one possible approach.



In-Pavement Loops

Video detection also is a means of achieving the same goal, although the presence of pedestrians and extreme weather conditions may cause false reporting. Additionally, a revenue control system also can be used to accurately report space occupancy.



Video Detection



Revenue Control System

The way each parking facility handles special events parking needs will present a challenge when using any of these technologies, as loading and unloading a full facility at the beginning and end of an event are not typical, every-day operations. Mass loading and unloading of a facility is something that should be appropriately planned for at each facility taking into account the surrounding street network, number of entry/exit locations and lanes, and internal vehicular movements and ramping schemes. Despite these challenges, an experienced parking facility operator and the appropriate parking access control equipment will allow more effective event operations.

Each of these approaches to data collection for automated parking guidance signage has benefits and drawbacks. Table 8.1 lists a few of the pros and cons for each approach.

Table 8.1 – Vehicle Detection Options

Technology	Pros	Cons
Inductive Loops	Automatic, no manual input required	Installation
Ultrasonic Directional Sensors	Automatic, no manual input required. Low Cost. Can use wireless communications.	Installation
Video Detection	Automatic, no manual input required	Less reliable in inclement weather Presence of pedestrians may cause false reporting
Revenue Control System	Automatic, no manual input required	May not be operational during special events
Self-reporting	Gives operator the option of temporarily closing facility to public	Requires continuous manual input

Should the City move forward with a parking guidance system that incorporates any or all of these technologies, it is recommended that technical requirements be established for the transfer of data from facilities to the control center. These requirements would help to ensure the accuracy and interval of the data submitted. Depending on how a facility operates under special event conditions may dictate the need for the system to have an override option during such times.

System Connections

There are several prevalent forms of communication systems between field devices and an operations center that dictate how data from a parking facility is transferred. These media include fiber optic cable, wireless technology, and purchased services options. Key determinants in the selection of a communications medium are the requirements for the solution. Typically, dynamic message sign units are considered to have low bandwidth needs. On a continuous basis, they send and receive status poll data indicating the health of the sign. When

posting a message to a sign, there is a “burst” in message size, but even with this burst, it is still considered to be a low bandwidth application. The following is a brief description of media that are appropriate for this application.

- Fiber Optic Cable

Optical fiber has become the standard wireline communication medium for most new outdoor plant communications applications in excess of 1,000 feet. Moreover, due to its ability to support high bandwidth applications such as video and broadband internet applications, it is often a medium of choice for intra-campus and intra-building applications. Information is transmitted over optical networks by coded light impulses that travel through the glass fiber by the means of internal reflections. Once the information reaches its destination, the signals are converted to electric pulses and decoded. Fiber optic systems require supplementary equipment, including transceivers and network equipment to function properly.

- Wireless Technology

The most prevalent wireless options for interconnect are spread spectrum radio, GPRS, and microwave. Spread spectrum radio system operates by transmitting a signal over a wide range of frequency. Spread spectrum is an unlicensed bandwidth and operates with less than one-watt power transmission. Spectrum equipment is available in 900 MHz, 2.4 GHz, and 5.8 GHz frequency ranges. Additionally, the 4.9 GHz spectrum has been reserved for public safety applications. Spread spectrum equipment is relatively inexpensive and requires smaller antennas for transmission. Spread spectrum, like microwave, requires line of sight for data transmission and is subject to interference from other sources, including trees and vegetation. Typically, lower frequencies require less intense line of sight requirements and lower bandwidth. Higher frequencies offer higher bandwidths but are more sensitive to line of sight requirements. A field survey should be performed for each transmission path intended for use. Also, a frequency survey should be conducted over a multiday period to determine all possible interference sources. Lastly, over time, depending on the environment, the quality of spread spectrum communications may degrade if other unlicensed or licensed transmission sources use the same or similar communications bandwidths.

General Packet Radio Service (GPRS) uses the cellular network for data transmission. GPRS permits remote terminals to use the same frequency pair for transmitting and receiving data. Users of cellular network pay for the airtime and the costs may vary depending on usage.

Microwave communication is available in both licensed and unlicensed bandwidth. The licensed option requires an FCC license and unlicensed options currently operate in 23 MHz range. Microwave has the ability to transmit information point-to-point and requires a line of sight for proper data transmission. Microwave systems are generally more expensive than other wireless options and require a large dish-type antenna. Atmospheric factors, such as heavy rainfall or fog can create interference and reduce the power of signal transmission.

- Purchased Services

Purchased services are those telecommunications services that are available for purchase from telecommunications service providers. Typically, a one-time connection fee and a monthly fee are assessed for each location where the service is provided. These services are offered in a variety of

bandwidth and options starting with bandwidth as low as 56 kilobytes per second (the bandwidth of a standard home telephone line) to 50 megabytes per second and beyond. For the low bandwidth option, the connection can be an on demand option where the field device is dialed each time access is sought and the toll is only charged for the connection charge. These services are typically purchased from telephone or cable television companies. In addition to dial and continuous standard telephone connection, telephone companies tend to offer higher bandwidth (broadband) services including DSL, T-1 (1.5 megabytes per second) and T-3 (45 megabytes per second) lines. Cable television companies also offer broadband services that range from 300 kilobytes per second to 400 kilobytes per second to over 1 megabyte per second.

If parking facilities already have telecommunication services present, it may be possible to exchange information over a secure network connection. If considered, the exact method or protocol is typically determined during the design phase taking into account input from all stakeholders.

Table 8.2 outlines the advantages and disadvantages for various system connection types.

Table 8.2 – System Connection Types

Interconnect Medium	Advantages	Disadvantages
Fiber Optics	High bandwidth, provides capacity for future applications	Splice and connection costs
	Electrical transient and electrical surge resistant	Higher end electronic costs
Spread Spectrum	Lower cost	Subject to interference
	Versatile	
GPRS	Low initial cost	Airtime charges
Microwave	Lower cost for long transmission	Unlicensed version subject to interference
		Licensed version requires FCC approval
Purchased Services	Low initial cost	Monthly service fee

System Outputs

There are several technological options for conveying parking availability and status to visitors of downtown Durham, of which dynamic message signs along the roadway and on parking structures are common options. With the information infrastructure in place, pushing the parking information out to secondary sources such as GPS devices, Smartphones, and web pages also is an increasingly popular means of conveying parking availability information to users. The technology chosen for data collection and information display will have an impact on

the components needed at the control center, ultimately driving the conditions under which the system is operated as well as cost.

Recommended Improvements

Update Existing Parking Signage

There are a number of signs in poor condition, i.e. signs peeling or faded as seen in Figure 8.4. Other signs appear to have been modified or expanded after installation with an extra panel added beneath the original signage as seen in Figure 8.5. In some cases, the street signs within a district use the district's color, similar to the Central Park District signage shown in Figure 8.6. However, other signage is not consistent with district color coding, as shown in the black background signage in Figure 8.7. A comprehensive update to the downtown wayfinding and signage program is recommended to improve sign appearance and to ensure consistency of the district divisions and use of color codes in signage. Parking location elements should be incorporated into wayfinding signage, as appropriate, keeping the color distinction between districts intact. The inclusion of map kiosks at strategic pedestrian locations also will help to develop a well-rounded wayfinding system. An increase in sign reflectivity will enable their readability under nighttime conditions. In addition, adherence to the current local and State guidelines for sign size and reflectivity should be a requirement within the recommended wayfinding and signage program update. Incorporating these updates and modifications into the already existing wayfinding signage will support visitors in efficiently locating convenient parking and their final destination.



Figure 8.4 – Faded Wayfinding Signage



Figure 8.5 – Modified Wayfinding



Figure 8.6 – Color Coded Street Signs



Figure 8.7 – Street Sign with Black Background

Implement Information Campaign

An initial review of popular restaurants and attractions in downtown Durham revealed a broad mix of how people are being directed to each destination. While most businesses provide an address that can be entered into an online mapping website or even provide a link that will take you to one, the majority of businesses do not indicate which district they are located. Most businesses provide general directions from major routes (or North, East, South, West) to their establishments and some list the most accessible parking locations. Knowing the district you are headed to will provide a sense of confidence in the driver as they approach downtown and begin seeing the wayfinding signing.

It is recommended that an information campaign be rolled-out that will provide maps, links, and language to each of the downtown businesses to use to promote the location of their business in relation to the downtown districts. This information can be incorporated into their websites, menus, pamphlets, or however they currently provide directions. Reaching each of the downtown visitors through this means will be an effective approach to expanding on the general understanding and use of the wayfinding program.

Augment Static Signage with Real-Time Parking Information

The provision of real-time parking information to motorists empowers them to make informed travel decisions which inherently improve traffic system performance, user satisfaction and the attractiveness of destinations. The business district in downtown Durham is complemented with cultural, sporting, and dining destinations, making it an attractive location for local citizens and visitors alike. Given the amount of commuter and visiting traffic within the area, it is recommended that the City provide real-time parking information for motorists.

While real-time parking information does require the deployment of field hardware, communications equipment, and central software, cost effective options are present within the marketplace and are being used by municipalities across the country. A variety of detection equipment, including non-intrusive ultrasonic sensors, video detection, or integration with parking revenue control systems are



PGS Signage



Mobile Application (from ParkMe website)

cost effective alternatives to inductive loops or space-by-space sensors. Wireless communications often provides an effective link between parking garage hardware, signs, and access points along City owned fiber optic cable routes. Usually, the installation of signs, cabling, and software development for web applications can present the highest costs in such a system.

Various levels of signage deployments are possible, including the use of dynamic directional signs along major corridors, dynamic space availability signs at garage locations, and dynamic level-by-level signs within garages. Given the size of garages in the downtown Durham area and the extensive costs of space-by-space systems the use of level by level or

space-by-space detection is not recommended for the City of Durham. These deployments are generally more efficient for massive parking structures found in airports or large shopping malls where wayfinding inside the parking garage is important. The City of Durham would benefit most from a system of dynamic parking availability signs complemented by static directional signs or from the use of dynamic parking availability signs, paired with static and dynamic directional signs. This signage can then be linked electronically to web-based applications that allow parking space availability information to be relayed via mobile device.

It also is recommended that the system be constructed in a way that parking calibration resets, integration components, and sign components are generally self-supported. This will alleviate the need to constantly monitor the system and perform daily maintenance, thus providing real-time information to travelers without requiring constant attention from the City or garage operators. The primary management agency for a parking guidance system will likely be the City of Durham Department of Transportation. Through application servers, the system will process all of the available parking information and distribute it appropriately. Any use of dynamic message signage along the roadways will be governed by City policies and procedures for developing and posting dynamic messages on City streets and by the North Carolina Department of Transportation on State routes. Typically, a parking guidance system will perform the following functions:

- Collect parking availability information
- Distribute the information to roadway and parking dynamic message signage as appropriate (signs on the street and/or signs at facility entrances)
- Notify the City and/or garage operator when certain conditions or thresholds are met (such as a facility at capacity and not accepting vehicles)
- Archive all parking data for future analysis

Typically, stakeholders that play a part in the operation and management of a parking guidance system will be parking facility owners and operators. Their function in the system operations is typically to maintain their facilities and the technology systems that will be delivering parking occupancy data to the operations center.

Depending on how data is received into the operations center, a parking guidance system server can perform a significant portion of the system automatically, thereby reducing the amount of personal interaction needed from a staff member. The operations center is typically staffed by City employees, knowledgeable in managing dynamic message signage unit, that manage traffic and help to coordinate roadway incidents. If the City were to incorporate dynamic message signage units for parking information communication, their use and management will likely become part of City staff everyday management operations.

9 | Management Organizational Options

This section examines a number of effective parking management operational methodologies as well as Parking Management Organizational options that are models for the possible reorganization of Durham’s parking program. For each organizational model explored in this section, examples are provided from communities that have successfully implemented those program organizational structures. Also identified is the significant contributions these programs provide to support their larger community strategic goals.

Parking Management Program Organization Evolution

Over the past several years Kimley-Horn and Associates, Inc. has conducted extensive research into how parking systems evolve organizationally. This area of interest emerged in conjunction with our research and documentation of parking management “best practices” from around the country.

Municipal Parking System Evolution

Many parking systems, especially in municipal environments, have evolved over time into organizational structures that we have termed “horizontally fragmented.” This means that various parking system components are spread among multiple departments or entities. It is important to realize that when these systems were being created, parking management as a profession had not fully developed.

The following example describes how many municipal parking programs evolved and also reflects the “functional fragmentation” that this approach can produce.

- There was a need to establish a parking function. The initial need was to manage on-street parking assets. Because Public Works already managed the streets, this function was located under the Public Works department.
- When the need for an enforcement function achieved critical mass, this was logically assigned to the Police Department as enforcement was their specialty.
- Over time, off-street lots and parking structures were added. The management of these resources was placed under the Facilities Management Division, because they managed the City’s real estate assets and facilities.
- Soon there was enough revenue being generated that an audit/accounting function was established to ensure accountability over the revenues and expenses. This function was placed under the Finance Division.

Fast forward to today. There is growing interest in Downtown Durham as a place to work, live, and play. The community is making impressive advances in Downtown development and revitalization and as a result, parking is emerging as a significant element. To successfully combat the challenges that parking will continue to pose on Downtown, the City should assess parking system organizational structures for implementation that best fit the goals of the city.

In a horizontally structured parking program, each department manages only one aspect of the parking system (such as on-street parking, enforcement, or parking structures). No one has responsibility or the perspective and understanding of all the functional areas to manage the interrelated components as a system. In many cases, parking can be described as everyone’s part-time job, but no one’s full-time job thus there is no overall accountability for parking as a system.

It is interesting to note the variety of ways in which the “horizontal fragmentation of parking systems” has evolved in different cities. Some have evolved along the lines of assigning different functions to various departments as noted in the example above. Some have peculiar combinations of functional and geographic divisions. Another category related to parking system organization and management has to do with whether the municipality has chosen to invest in the development of a significant off-street parking program (the construction/management of parking structures/lots). Finally, the community’s approach to self-management of resources versus their desire for out-sourcing certain functions also plays a role.

Parking Management Organizational Best Practices

The current best practices data is fairly agnostic to the exact organizational framework, but the fundamental characteristic of all the most successful strategies is the principle of “vertical integration” of parking functions, which is what is currently mimicked in the City of Durham’s organizational structure. The minimum degree of integration is management by one entity of the on- and off-street parking and parking enforcement functions. More advanced models include parking/transportation planning, transportation demand management programs, and even transit system management in smaller communities.

Another dimension that we will discuss related to the organization and management of a vertically integrated parking program is issue of self-management versus outsourcing/contract management. Within the contract management context we will review two primary approaches – management agreements and concession agreements.

We would be remiss if we did not at least mention another emerging trend in this area – parking system privatization or “monetization.” While there is not a lot of history in this area relative to parking systems, recent examples in Chicago, Pittsburgh, Atlanta and Indianapolis are worth noting. Parking system monetization refers to the offering a long-term lease of specific parking assets (essentially a long-term concession agreement) in exchange for a large upfront payment.

There also is a cadre of major U.S. cities that have not made a significant investment in the development of a public off-street parking system (e.g. Charlotte, NC). This is neither good nor bad, but it does have an impact on the organizational options to be considered in terms of how these cities can most effectively organize a parking program designed to achieve the community’s specific program goals and objectives.

In addressing this particular condition in other communities, we developed a new program approach that we call “the parking management collaborative.” The goal of this approach is to essentially create a “management overlay” onto a collection of public and private parking assets, such that from a visitor’s perspective, the parking system looks and feels like a public parking system despite the actual distributed ownership behind the scenes.

This option, along with the more traditional parking system organizational options (parking authorities, parking districts, a vertically integrated city department, BID or contract management options, etc.) are discussed later in this section following a discussion of defining program goals.

Program Goals

As part of this study, a preliminary set of program goals were developed. These will serve as the program foundation and help in setting priorities and establishing community partnerships for the Downtown Parking Plan. A statement better defining each of the twelve example guiding principles is provided.

Program Goal #1

Organization / Leadership

The management of the parking program will be organized to be “vertically integrated” with responsibility for:

- Managing on-street parking
- Coordination of off-street parking
- Parking enforcement
- Parking planning and development
- Parking demand management

Consolidating various parking functions under a single Parking Management Organization establishes a consolidated system that is action-oriented, responsive, and accountable with improved coordination and operating efficiencies. The current city organizational structure mimics this “vertically integrated” concept.

Program Goal #2

Customer Service Orientation

Parking will support downtown Durham as a desirable destination for workers, businesses, shopping, dining, entertainment, and recreation by making parking a positive element of the overall community experience.

The Downtown Parking Plan will strive to develop and coordinate private and publically owned parking facilities that are clean, convenient and safe.

Parking enforcement staff will present a friendly and professional appearance and receive on-going customer service and community ambassador training.

Responsiveness to community needs, openness to fresh ideas, and active participation in community planning and events will be among the ongoing goals of the Parking Management Organization.

One major goal of the parking organization is to create a “management overlay” that will create an easy to understand and easy to access parking program for visitors. This will be accomplished through the use of common branding and marketing, an integrated signage plan, validation programs, a web-based information clearing house, special events program coordination, etc.

Management of the on-street parking system will be enhanced through an investment in new technology and more customer friendly parking enforcement policies.

Program Goal #3

Community and Economic Development

The parking system will be guided by community and economic development goals and City Council adopted policy directives that are the result of collaborative processes between Parking Management Organization staff, other agencies, and involved stakeholders.

The Parking Management Organization will use its resources to promote mixed-use and shared-use parking strategies as well as promoting alternative transportation modes through the creation of incentives, partnerships and programs to attract private investment. This will include reviewing and updating existing city parking requirements as appropriate.

Program Goal #4

Integrated Transportation / Sustainability

The Parking Management Organization will promote the “park once” concept and a balance of travel modes, including rail, bus, vehicular, bicycle, and pedestrian to meet community-wide access goals.

The Downtown Parking Plan will promote a “park once” strategy that uses parking supply efficiently and emphasizes “linkages” to other forms of transportation.

“Green” strategies that can result in more efficient use of parking facilities and provide other benefits, including reduced congestion, improved transportation choices, more efficient land use, and improved streetscape aesthetics will be explored and supported.

Program Goal #5

Leveraging Technology

The Parking Management Organization will be an early adopter of technology solutions to enhance customer service and parking information options.

A key goal is to make parking less of an impediment to visiting downtown Durham and more of an amenity.

Technology will be leveraged to streamline and simplify access to parking and will be a key parking management strategy. Another key technology related goal is to enhance the efficiency and effectiveness of parking management staff and programs.

A prime example of the use of technology to leverage improvements in customer service, enforcement, and system efficiency is the implementation of a fee for on-street parking that accepts credit cards as a payment option. This implementation can provide more convenient payment options for patrons, real-time data for streamlined enforcement, and better use of the curb space.

Program Goal #6

Communications / Branding / Community Education

Parking management programs and facilities will be developed to function as a positive, marketable asset for downtown Durham.

Parking management strategies and programs will be cross-marketed to promote Downtown Durham as a unique and visitor-friendly regional destination. Parking availability shall be well publicized to enhance the perception of parking as a positive element of the community experience. Reinvestment of parking resources back into the downtown will be promoted. The Parking Management Organization will develop an effective marketing and branding program.

In addition to web-based information, the Parking Management Organization will develop educational materials on topics such as: parking development trends, parking safety tips, etc. The organization also will promote discussion with parking facility owners/operators on topics such as facility condition assessments, maintenance program development, parking management best practices, etc.

Downtown Durham parking programs and information shall be well promoted and marketed. The Parking Management Organization will work closely with Downtown Durham, Inc., Office of Economic and Workforce Development, and other community agencies/stakeholders to promote, educate, and market parking programs in downtown Durham.

Program Goal #7

Program Development / Responsiveness

Responsiveness to the Needs of a Diverse Customer/Citizen Base.

The Parking Management Organization should aim high and strive to achieve a “best-in-class” parking program. All aspects of Downtown Durham parking should reflect an understanding of what the customer desires in terms of a positive and memorable experience.

Special programs to address retail enhancement initiatives, shared-use parking, residential parking, employee parking, special/large events parking, etc. will be developed in a collaborative manner and designed to support larger community goals and objectives.

Program Goal #8

Information Clearinghouse / Coordinated Programs

Parking Information Clearinghouse and Coordination of On-Street, Off-Street, and Special Event Programs.

The Parking Management Organization shall take a lead role in parking program coordination. From a planning and information clearinghouse perspective, the organization will be a unifying and centralized resource that will coordinate and distribute information related to parking supply, availability, planning, and special programs, event activities and other resources. This will be done through physical signage, branding and marketing, a robust planning function and a strong web-based information program.

Program Goal #9

Planning / Urban Design

The Parking Management Organization shall have an active and comprehensive planning function, including strategic and transportation planning efforts.

The organization will work with City staff to review and evaluate parking zoning requirements, the development of parking design standards that promote good urban design principles related to parking structures and mixed-use projects, and the creation of transit oriented development parking standards.

Effective parking planning will mean improved understanding of parking supply/demand and development of parking infrastructure that will enhance and better support the community strategic goals and urban design.

Program Goal #10

Safe, Attractive, and Well-Maintained Facilities

Emphasis will be placed on enhancing parking facility appearance, maintenance, safety and security, regardless of facility ownership. The parking organization will promote standards to encourage comprehensive and proactive facility maintenance and security plans.

Facility maintenance reserves and other maintenance best practices will be encouraged in City owned facilities. Publicly available parking facilities marketed through the Parking Management Organization will agree to a set of parking facility standards that is developed through a joint coordination effort between the City and stakeholders. Participating facilities will be routinely monitored.

Some parking facilities incorporate public art and creative level identification/theming to enhance the parking experience for patrons and make large parking facilities more navigable. Continued development of these initiatives will be supported.

Program Goal #11

Effective Management / Accountability

The Parking Management Organization will be a forward thinking “best in class” parking program.

The Parking Management Organization will anticipate future patron needs in the context of the Downtown Durham Master Plan and other planning initiatives and seek to integrate supportive parking and multi-modal access strategies as appropriate.

Evaluation of other parking management best practices and new technologies will occur on an on-going basis.

Effective facility maintenance, infrastructure reinvestment and other system management fundamentals will be routinely addressed.

Program Goal #12

Self-Funding / Accountability

The parking system will be financially self-supporting and accountable to stakeholders.

The Parking Management Organization will work toward developing a parking system that is self-supporting and sets aside funds for maintenance reserves and future capital asset funding.

By aligning approved parking revenue streams from on-street, off-street, enforcement, and potentially special assessment fees and fee-in-lieu programs, it is possible to develop a parking system that self-funds all operating and maintenance expenses, facility maintenance reserves, planning studies and future capital program allocations.

A consolidated parking revenue and expense statement should be developed to document all parking related income streams and expenditures to give a true accounting of parking finances.

Program Goals Summary

If adopted, these Program Goals will serve as a foundation for near- and long-term decision making and implementation of parking management strategies for the Downtown Durham Parking Management Organization.

These strategies are intended to support the on-going economic development and vitality of downtown Durham. This is a process not a one-time task.

Teamwork and collaboration between the Parking Management Organization, City officials, Downtown management, transportation agencies and other stakeholders will be a key for success moving forward.

The Parking Management Organization will support the larger Durham area transportation plan, other area or regional plans as well as the business district strategic plan.

Parking System Operating Methodologies

Once a management structure has been determined, operating methodologies are another organizational/management consideration. There are three primary methodologies for operating parking programs.

1. Self-Operation – The managing entity or owner operates the parking program itself. For example, a downtown parking authority or City department can hire the necessary staff to operate the parking system internally.
2. Outsourced: Management Contract – The facility owner or managing organization contracts a private parking management firm to handle day-to-day operations and maintenance through a management contract. Through the management contract, the private parking management firm is either paid a fixed management fee and/or a percentage of gross revenues and is reimbursed by the owner for all costs incurred in the operation.
3. Outsourced: Concession Agreement – The facility owner or managing organization contracts a parking management firm to assume full responsibility for all aspects of the operation, including expenses, and the parking management firm pays the owner a guaranteed amount and/or a percentage of gross revenues (or a combination).

A variation on the concession agreement methodology that is being introduced in the U.S. parking market is that of parking system “monetization.” A more detailed description of each option is provided in the following subsections.

Self-Operation

Self-operation of the parking system requires that the owning entity provides all the necessary employees (e.g., full- or part-time staff and/or temporary employees), equipment, supplies, etc. With this method of operation, the owning entity receives all gross parking revenues and pays for all operating expenses. Self-operation requires internal administrative and managerial staff at a higher level than the management contract or concession style agreements.

Self-operation allows the owning entity to have complete control over the parking facilities and the level of service provided to its patrons. This requires a well-trained and experienced staff to effectively manage a large parking operation with significant daily revenues. Parking has become a highly specialized field and also requires good general and facility management skills. Without proper training and professional development, self-operation can result in a lower than desired level of service and revenue controls.

Potential advantages of self-operation include:

- Complete control over day-to-day parking operations, including customer service.
- Internal parking knowledge to assist with future planning.
- Uniform look and feel with other city services.
- Better control over staff and staff training.
- Eliminates paying a management fee to a vendor.

Example “Self-Operated” Programs

- City of Missoula, MT
- City of Boulder, CO
- City of Fort Collins, CO

Disadvantages to this approach would include:

- Typically higher expenses than contracting with a private parking provider due to the following:
 - Higher pay rates than private operators especially in a unionized environment
 - More restrictive benefit requirements
 - Higher staff training and development costs

- Private operators have a greater economy of scale relative to supplies
- Higher insurance costs/requirements since the City holds 100% of risk and liability
- More operational duties for the city.
- Smaller staff pool to draw from for covering sick days and vacations. Internal staff is limited, whereas contracted operators can draw from a larger pool of qualified staff.
- The city will need to find and hire experienced parking staff.
- Requires budgeting for on-going training of new staff to maintain customer service levels.
- The city will have higher administrative and back office costs than an experienced private operator.
- The city will deal directly with customer complaints.
- The city will assume maximum financial risks related with the parking system.
- Can be difficult to terminate the employment of staff when needed.

Management Agreement Operations

In this form of operation the owning entity retains complete control over staffing levels, validation policies, parking rates, and customer service policies. With a management agreement, the parking operator provides the necessary labor and services for the operation of the parking facilities in accordance with an agreed upon policies and annual operating expense budgets established by the owner. The parking operator then receives a monthly payment, either a lump sum amount or a percentage of the gross or net revenue. This monthly payment represents the fee to manage the facilities.

The parking operator will provide the owning entity with a detailed monthly report package, including operating statistics, revenue summaries, expenses summaries, budget variance reports, etc. The management agreement requires additional personnel time for the owning entity's staff since it is necessary to audit the gross parking revenues as well as the monthly operating expenses. The preferred arrangement is that all reporting guidelines and accounting practices are determined up-front so that each party understands their responsibilities.

The owning entity's stakeholders and staff will have significant input into establishing the "level of service" for the parking system by deciding on the type of parking access and revenue control systems to be employed, the quantity of cashiers/customer service ambassadors, acceptable traffic queuing upon exit, lost ticket/insufficient funds policies, parking related services offered (lost vehicle assistance, dead battery assistance, vehicle lock-out assistance), etc.

The following outlines the potential advantages of outsourced day-to-day operations via management agreement (in conjunction with a small in-house contract management function):

- Reasonable control over day-to-day parking operations.
- An internal parking manager can be hired by the city with sufficient parking knowledge to assist with future planning.
- A well-structured management agreement will provide the following:

Example "Management Agreement Operated" Programs

- City of Raleigh, NC
- City of Lincoln, NE
- City of Cedar Rapids, IA

- Reasonable control over staff and staff training
- High customer service expectations
- A high level of staff appearance
- Strong auditing capabilities
- Operator accountability
- Parking services from an experienced service provider.
- Typically, operations are less expensive due to:
 - Lower staffing costs
 - Lower training costs
 - Lower administrative costs
 - Lower insurance costs since some risk and liability is shed to the parking operator
- The use of a private parking operator will provide on-going valuable parking experience to the City.
- Potentially, a large pool of qualified private operator staff to draw from for sick day and employee vacations.
- The contracted parking operator will deal with most customer complaints.
- Relatively predictable parking system expenses.

Disadvantages to this approach include:

- The city will have to compensate a private operator with a management fee or a percentage of gross revenues.
- Somewhat less control over day-to-day operations.
- Somewhat less control over staffing and training issues.
- The city will need to find and hire an experienced parking manager.
- The city will continue to have some administrative and back office staffing costs.
- The city will assume most of the financial risks related with the parking system.

Concession Agreement Operations

With a concession agreement, the concessionaire will provide all necessary labor and services for the complete operation of parking facilities in return for a percentage of the gross parking revenues. The actual percentage varies from operation to operation based on the size, complexity, revenue potential, and perceived risk to the operator. There may be a guaranteed minimum annual payment to the owning entity. Sometimes a revenue split is negotiated for revenues above a certain level.

Example “Concession Agreement Operated” Programs

- Children’s Medical Center, Dallas, TX
- Several Airports

In general, concession agreements work best in situations where the owning entity wishes to divest itself from the day-to-day parking operational concerns in order to better focus on its core business. These types of

arrangements are more common in airports. With this type of agreement, a minimal amount of time is required by the owning entity's staff in the day-to-day operations of the parking program. The owning entity also relinquishes some level of control as it relates to defining day-to-day operations since the concessionaire is responsible for all expenses and most liabilities. Typically, the owning entity receives a deposit from monthly parking revenues within two weeks after the end of the each calendar month. Periodic conversations with the parking operator are necessary to discuss operational issues that affect the quality of service to the owning entity's patrons.

The concession agreement is the simplest type of agreement for administrative purposes, in that only the gross parking revenues need be audited. All operational expenses are the responsibility of the concessionaire, thereby resulting in minimal control of this function by owning entity staff. Also, as with the management agreement, the parking operator serves as a buffer to the owning entity's management with respect to parking complaints and potential wrongdoing by those employed within the parking system.

While there are benefits to this approach, the risks tend to outweigh those benefits for the City in particular. It is recommended in this report that the City builds a parking brand that is recognized as a well-managed, well-maintained organization. Entering into a concession agreement with an operator and taking a more hands-off approach poses risks to the desired outcome of developing a positive parking brand identity within Durham.

Potential advantages of concession style leasing of parking facilities include the following:

- No real parking operations or management required by the city.
- No substantial daily auditing required by the city.
- Facilities will be leased to an experienced parking services provider.
- Requires no internal parking experience on the part of the city.
- Relatively predictable revenue stream.
- Less operations related financial risk.
- Parking operator takes all significant parking customer complaints.

Disadvantages to this approach would include:

- Little to no control over day-to-day parking operations.
- No control over staffing and training issues.
- Less customer service accountability.
- Difficult to measure parking system expenses, if the parking operator is required to share them at all.
- If not specifically addressed in the contract agreement, the parking operator may be encouraged to reduce facility expenses to a minimum level to increase profit that can negatively impact customer service.

Effective Parking System Organizational Options

Parking System Organization and Management

As the parking profession has evolved, several very effective parking system organizational models have emerged. Each of these models has its own strengths and weakness depending on several factors including the

parking system's size, degree of development, programs offered, political landscape, community goals, etc. The seven most successful and commonly used organizational models are:

- A Consolidated (“vertically integrated”) City Department model
- The Parking Authority model
- The “Contract” or Business District model
- The Parking District or Commission model
- The Professional Services model
- The Parking Management Collaborative Approach
- The “Eco District” model

Of course, there are several variations and hybrids of these models, but these are the seven primary alternatives commonly seen across the country. Each of these models will be examined in more depth in the following sections, but they all have one common factor that contributes to their success – they all address the major problem associated with the “horizontally fragmented” system structures previously described.

When evaluating which organizational option will work best in a specific community, it is important to ask community stakeholders to create a prioritized set of evaluation criteria. A typical list of criteria that we employ includes determining which organizational option:

- Best supports economic development
- Best reflects the functional characteristics of the community
- Is most efficient/cost effective
- Is most customer-friendly
- Is most politically feasible
- Is most focused on the vision
- Is easiest to achieve
- Is most responsive to businesses and stakeholders
- Is most financially viable
- Provides the most effective coordination

The following is a brief description of parking system organizational models that have shown demonstrated success in recent years. Each description is illustrated by an example of a specific program based on that model.

Consolidated (“Vertically Integrated”) City Department Model

A Consolidated and “Vertically Integrated” City Department Model is essentially structured like a typical department lead by a department director head and consisting of a varying assortment of support staff. The defining characteristic of this model is that the department director has complete authority and responsibility for the management of all parking related program elements. The primary elements of these being:

- Off-street parking facilities and maintenance
- On-street parking resources

- Residential permit parking programs
- Overall program financial performance
- Parking system planning (e.g., zoning, financial planning, and new construction)
- Parking enforcement

There are numerous other related areas that can be included:

- Transportation demand management (Trip Reduction Programs, Preferential Parking for Car/Van Pools, transit programs, etc.)
- Parking system branding, marketing, and community outreach
- Implementation of new technologies
- Interface with downtown development and economic development

Another important trend related to this model is that even if parking is kept within the City government structure, it is being housed in new locations. In the past, parking was often located under Public Works, Transportation, or similar departments. In the past decade the trend has been to locate parking management under Community or Economic Development, Urban Renewal, or similar departments. This is due to the growing appreciation of the importance of parking as a tool for economic development.



The City of Fort Collins, CO has a consolidated parking management program that incorporates off-street parking (parking structures and surface lots), on-street parking (time limited on-street spaces), and parking enforcement. All parking functions are self-managed using city staff positions. The city's Parking Manager also has developed a program to promote effective coordination and collaboration with the owners of private parking to better support evening restaurant parking demands and for special events.



Another feature arising from this integrated approach is that the city has recently embarked on a parking technology assessment. A key feature of this assessment was to identify technology options that could link on-street/enforcement systems (Auto-Vu License Plate Recognition enforcement technology/T-2 systems software) with the next generation of off-street parking equipment and potentially new on-street multi-space meters. This type of creative and integrated thinking is more common in systems with a vertically integrated organizational structure, as the responsibility for all areas affected are of the single City department, rather than having multiple departments with differing levels of interest.

We have identified an emerging trend in municipalities that are reorganizing their approach to parking, but maintaining parking as a city department function. Many of these cities are adopting the vertical integration principals and organizationally consolidating all parking function in the economic development division as opposed to the more traditional transportation or public works divisions.

In 2011 the City of Fort Collins embarked on an update to their Strategic Parking Plan. One of the outcomes of this revised parking plan was to consider modifying their program organizational model from a unified city department model to a “Parking District or Commission” model. One reason for this is the possibility of reestablishing on-street paid parking after a 20-year absence. The greater business community engagement in regards to creating and implementing parking policy through the Parking Commission Board of Directors is a key consideration.

Through the Strategic Plan study process many business leaders, downtown management and City Councilors have seen both the benefits of this significant policy shift and how a new organizational framework can be useful in moving the program forward. However, these major structural changes are always somewhat controversial and need to be carefully managed. Whether to move forward with this reorganization is still unfolding in Fort Collins.

The Parking Authority Model

Parking authorities typically operate with a small staff and engage a private parking management firm to handle day-to-day operations. One advantage of the Parking Authority model, especially in a municipal setting, is that it puts all the major parties at the same table via a parking authority board or commission. This helps key stakeholders gain a deeper appreciation for the complexities of parking and the often competing/conflicting agendas between various constituent groups.

The defining characteristics of a Parking Authority Model include:

- It has a defined mission and vision
- It is governed by a detailed management agreement and is self-funded
- Often has bonding capability
- Most often has responsibility for all aspects of parking operations (off-street, on-street, and enforcement, including rate adjustments)
- Most often has responsibility for off-street parking facility ownership, planning, construction, and maintenance
- It is typically headed by a President or Executive Director
 - Because of this they tend to attract the highest caliber parking management personnel
- The President or Executive Director reports to a board (typically 7 – 15 members)
 - The board is comprised of influential and invested downtown stakeholders
 - Board composition typically includes:
 - High level city staff
 - Mayor or City Manager (or appointee)
 - Director of Finance
 - Director of Public Works
 - Property owners/developers
 - Downtown association members



- Chamber of Commerce representative
- Large downtown employers

Although the authority may not control all of the parking in a downtown area, that does not mean they cannot affect the entire downtown. Both Toledo, OH (the Downtown Toledo Parking Authority or DTPA) and Winnipeg, Manitoba (the Winnipeg Parking Authority) dramatically transformed their operations that all the other private parking operations had little choice but to follow suit. Now virtually all downtown parking facilities have attendants in new uniforms, customer service training for front-line staff, parking structure interiors are painted white, new customer friendly parking technologies and programs are being installed/instituted – all following the local parking authority’s lead. We call this the “high tide raises all boats” phenomenon.

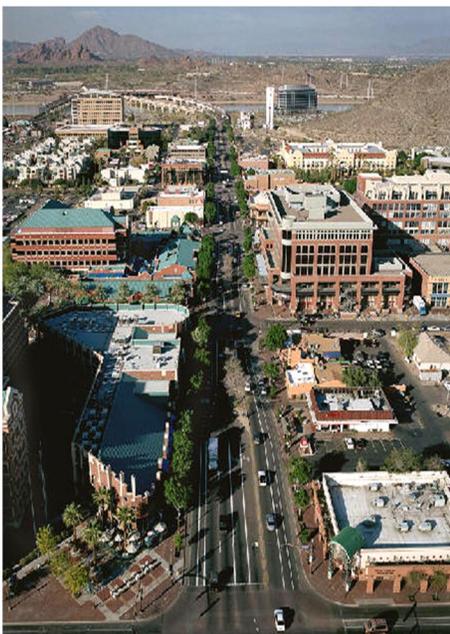
The “Contract” or Business District Model

In a surprising number of communities across the United States, downtown business improvement districts or downtown development authorities are taking operational responsibility for parking. Similar to the Parking Authority Model, the Contract or Business District Model is governed by a well-defined operating agreement that sets specific expectations and limits on the use of parking assets, including parking policy, parking rate adjustments, etc. These contracts or operating agreements typically must be reauthorized every 3 – 5 years based on whether the defined contract goals were met. If reauthorized, it is common for new goals and program objectives to be set for the next contract period.



This is the fastest growing and most successful of all the parking organizational models in the past 10 years. One key reason for this is that these agencies are typically better in touch with the strategic goals of the communities and often have skill sets that many parking programs lack (community engagement, strategic planning, etc.)

In Boise, ID the off-street parking program is professionally managed by the Capital City Development Corporation, the city’s urban renewal agency. Through the aggressive use of tax increment financing combined with a strategy of leading other desired development with parking infrastructure investment, Downtown Boise has become a national model of downtown community development and resurgence.



Another example of this model can be found in Tempe, AZ. The City of Tempe does not own any significant parking facilities, and only a few small surface parking lots. The need for a coordinated parking system solution to provide a more user friendly experience for visitors drove the downtown organization, the Downtown Tempe Community, Inc. (DTC), to create what amounts to a “parking management overlay program.” Working with the owners of the off-street parking assets, they created a parking system management plan. Through creative signage, a common parking validation program, and extensive marketing, the DTC branded the parking system to such an extent that it appears that Tempe has a well-managed and comprehensive parking program, although they do not own any of the individual assets. DTC acts, in essence, as a private parking management firm operating a collection of city assets and private off-street facilities as a combined system. They manage all parking staff and programs themselves, and return all profits to the facility owners keeping a modest management fee. The DTC also

manages the city's on-street parking resources and reinvests on-street parking revenues back into the downtown district.

The Parking District or Commission Model

The Parking District Model is slightly different than the previously defined model, but as mentioned earlier, the common element of all of these successful models is the goal of creating a "comprehensive parking management function" under the control of one managing entity (vertical integration).

The characteristics of a parking district or commission include:

- They typically have a defined area with set boundaries.
- They may have a special property assessment that applies to all properties within the district.
 - This revenue generally goes toward defined district improvements, but can be restricted to parking or transportation related projects.
- They may have a "Parking In-Lieu of Property Tax" (PILOT) program. In lieu of having a parking requirement for new development, developers instead pay a fee-in-lieu of parking development. This fee is generally calculated on a per stall basis and goes to the parking district for strategic investment in district parking needs (new parking additions, technology upgrades, transportation alternatives, etc.).
- They are generally run by an Executive Director or President (although some are run by City department heads).
- All revenues are collected and managed by the district for reinvestment in the parking program and the district.
 - In some cases, if revenues exceed operational or capital program needs, a percentage of the additional funds are returned to the City's General Fund.
 - In other cases, the City assesses the district a fee based on a percentage of net revenues in-lieu of not assessing property taxes on the parking facilities. This money goes to the City's General Fund.
- Revenue sources typically include:
 - Special assessment revenue (if applicable)
 - Off-street parking revenue
 - May include miscellaneous revenue sources such as: advertising (in parking structures), vending machines or retail space rental (mixed-use parking facilities)
 - May also include special event parking revenue
 - On-street parking revenue
 - Parking enforcement revenue

Parking Districts have made significant contributions to the communities they serve. For example, in Boulder, CO, the Downtown and University Hill Management District/Parking Services can boast the following list of accomplishments all paid for with parking district revenues:

- Funding of the Eco-Pass Program – Over \$800,000 per year

- This program gives all downtown employees a free bus pass and contributes to a 62% mode split among downtown employees (reducing parking demand).
- Repayment of a \$3.4 million Pearl Street Mall Improvement Bond - \$500,000/year
 - This is a good example of the parking program contributing to community economic development.
- Payment of Parking Structure Debt Service Obligations



- Parking district revenues fund the development costs of downtown public parking structures as well as all parking operating and maintenance costs.
- One of the more impressive parts of this program has been the leadership in defining appropriate design guidelines for parking structures.
 - Only mixed-use structures are permitted.
 - They must incorporate street level retail and be architecturally consistent with the downtown fabric. Some have been multi-modal in nature, integrating transit functions with parking.

The Professional Services Model

A more recently developed organizational model is the “Professional Services” model. In this model, a smaller more professional level parking services group is developed in conjunction with the outsourcing of day-to-day operations. While there are many potential variations under this category, the most successful variation involves a core team that is primarily administrative in nature.

The management group is responsible for program elements such as creating the vision and mission of the program, community outreach and program development (including assessment of new technologies, etc.), parking system planning, interface with economic development programs, interface with transportation system functions (including alternative transportation programs), contract administration, parking facility long-term maintenance program development, system financial administration/audit functions, and special projects management.

Day-to-day parking operations are outsourced to a qualified parking management firm. Their responsibilities would typically include off-street parking facility operations (cashiering services, pay-on-foot operations, etc.), daily facilities maintenance, security, etc. Some communities have extended these contract services to include the operation of on-street parking and parking enforcement programs including citation collections and management. For on-street and enforcement operations meter maintenance and collections, citation issuance, collections, and adjudication can all be outsourced as well.

Another feature often used in conjunction with the Professional Services Model is the development of “on-call services agreements” for various types of consulting and professional services such as engineering facility condition appraisals, technology assessments, strategic planning, revenue control system assessments and audits, etc.

The primary advantages of this model are that parking is managed by a lean group of professional level management staff focused on key areas such as:

- Program Administration and Finance
- Audit/Revenue Control
- Contract Administration
- Special Projects
- Marketing/Branding/Communications
- Economic Development/Customer Satisfaction/Business Community Interface



Day-to-day operations are outsourced. This can have the effect of keeping a better focus on the strategic goals of the parking program without getting mired in the many operational issues that make up day-to-day management.

Communities beginning to implement this approach include the City of Beverly Hills, CA and the City of Lincoln, NE.

The Parking Management Collaborative Approach

This approach was developed specifically to address the set of conditions that exist in communities that have chosen not to develop a significant off-street public parking system, such as the City of Charlotte, North Carolina, and therefore do not have much ability to influence the off-street parking market in traditional ways. This model also could apply to those communities that choose to divest themselves of the facilities that they have previously developed.

The Parking Management Collaborative approach is comprised of the following basic tenets:

- There is a demonstrated need to improve the ease of use and access to parking in the downtown, especially for occasional visitors.
- There is recognition that a comprehensive approach that will coordinate and integrate both on-street parking and off-street parking assets is needed to make the downtown more visitor-friendly.
- On-street parking assets will be better managed as a short-term parking resource with the primary management goal being to promote a high degree of turnover for the benefit of merchants and businesses that depend on an effectively managed supply of convenient short-term parking resources. A goal of maintaining an average on-street occupancy level of approximately 85% is a key program goal/benchmark.
- Because the majority of off-street parking in the downtown is privately owned and operated, a collaborative approach to developing a downtown parking management strategy is needed. The primary objective of this approach is to develop what is essentially a “parking management program overlay” to create a well-coordinated and marketed user-friendly parking system that will appear to the casual user as a public parking program.
 - The key functional elements of this parking management overlay include:
 - Program branding and marketing
 - A comprehensive updated downtown parking and wayfinding program

- A central parking and transportation information clearinghouse function
 - A special event coordination function
 - A significant parking and transportation planning function
 - Coordination with community and economic development activities
 - Management of City owned parking assets
 - Coordination with downtown management in support of downtown business needs
- The Parking Management Collaborative will strive to promote superior, customer oriented parking programs and parking facility standards.
 - Parking planning and coordination will be important functions related to understanding and responding to both the current and future parking needs of downtown users.
 - The diverse needs of various user groups will be considered, including visitors, employees, employers, property owners, and parking management firms, through active planning, coordination and communications.
 - The Parking Management Collaborative will be considered an integral component of the community's economic development strategies and programs.

This approach needs only a small, but highly effective staff to be successful. The recruitment of an executive caliber program director with strong vision and excellent communication skills is essential for this strategy to succeed. The other key ingredient is to get buy-in from major parking property owners. This is typically accomplished by recruiting them to be on the program's Board of Directors. In some cases where all the right individuals are already on the board of an existing downtown organization (especially if creating "yet another board" would be seen as an issue) this function could become an initiative of that organization.



One of the key values of having the major parking property owners engaged at this level is that this will lead them to directing the parking management firms they hire to "get on-board" with this program. Engaging the parking management firms on another level also can be very valuable because of their detailed knowledge of conditions "on the street" and their knowledge of parking management principles in general.

The first major city to employ this model is Charlotte, NC, where the collaborative was located, organizationally, in the business improvement district known as the Charlotte City Center Partners

The "Eco District" Model

This is the newest model that is beginning to be adapted to have a parking/transportation program focus. Eco District initiatives generally are comprehensive strategies to accelerate sustainable community or neighborhood development. The value proposition includes defining performance areas and outlining an implementation strategy as it relates to integrating sustainability goals as a defining element in the parking and transportation program organizational framework.

Eco Districts commit to achieving ambitious sustainability performance goals, guiding district investments and community action, and tracking the results over time.

A parking and transportation Eco District approach would recognize technologies and strategies for enhancing district sustainability, such as energy and water management systems within parking developments, support for green streets, the promotion of resource conservation, etc. They also may prioritize LEED® certification for applicable projects or Green Parking Council certification for the program overall.

In this case, since parking can be a significant revenue source, we envision parking revenues being dedicated first to supporting parking program operations, maintenance reserves, and technology upgrades. Once the parking program is well established and generating excess revenues, these resources would be invested in a variety of sustainability initiatives. Examples might include programs such as:

- Community bike programs – to support an overall “Park Once Strategy”
- Car sharing programs – to support downtown residential development
- Pervious pavement installation and bio-swales as demonstration projects in city surface parking lots

It should be noted that the widespread deployment of these strategies has been slow to develop due to lack of comprehensive assessment tools, scalable project capital, and public policy support. The Eco Districts Initiative focuses on removing these implementation barriers and creating an enabling strategy to accelerate community-scale sustainability.

Generally, the Eco Districts approach brings together community stakeholders, property developers, utilities, and the District to solidify a shared sense of purpose and partnership through the following actions:

- Create an engagement and governance strategy to build community support, set priorities, and act
- Develop an assessment and management toolkit to guide project development and track ongoing performance
- Implement sustainability projects through technical and economic feasibility analysis, assembly of project financing, and establishment of public/private partnerships
- Identify commercialization opportunities for companies to test promising products and practices
- Establish municipal policy and regulatory structures to support Eco District development

In this specific application, the general goals above still apply. However, because of our focus on parking and transportation functions, there will be some variation and more specific applications. The broad-based nature of parking and transportation, the need for on-going stakeholder engagement, and the larger economic development focus makes this application very appealing. Overall, transportation accounts for about 30% of the nation’s carbon footprint. Organizing your parking program to have an explicit “eco-district” orientation would send a strong signal of the community’s commitment to environmental progress.

Parking System Monetization

Parking program “monetization,” also is sometimes referred to as “Public/Private Partnerships” (PPPs) and also is sometimes confused with the more general term “Concession Agreement.” The key differentiating factor that makes monetization different is a large upfront payment in exchange for an extended concession or lease style agreement (usually in the 35 – 75 year time frame), with significant finance and other fees applied over the term of the lease. This assessment of parking monetization will consider the following subsections:

- Legal Authority to Monetize Parking

- Parking Monetization Overview

Legal Authority to Monetize Parking

The North Carolina General Statutes were reviewed to ascertain what authority is provided for cities in North Carolina by the General Statutes regarding outsourcing and financing of parking operations, with particular attention to the potential of monetizing the City's parking assets.

The following sections of the General Statutes were found to address a City's authority as it relates to parking:

- Article 12 - Sale and Disposition of Property (G.S. 160A, Sections 265- 280)
- Article 15 - Streets, Traffic and Parking (G.S. 160A, Sections 301 – 302)
- Article 16 - Public Enterprise (G.S. 160A, Section 321)
- Article 19 - Planning and Regulation of Development (G.S. 160A, Section 458.3)
- Article 24 – Parking Authorities (G.S. 160A, Sections 550 – 565)

The following sections discuss each of the General Statutes as it relates to parking and the City's authority.

Article 12 – Sale and Disposition of Property

Article 12 grants a City broad power to dispose of property and to enter into leases. This article could be used as the basis to sell, or privatize an existing parking facility; either a parking lot or garage. The Article does not allow for a private or negotiated sale of real property valued over \$30,000. A disposition of property valued at greater than \$30,000 may occur by one of the following methods:

- Advertisement for sealed bids
- Negotiated offer, advertisement, and upset bid
- Public auction
- Exchange

Section 272 of G.S. 160A allows a City to lease property, but sets a maximum lease period of 10 years.

Article 12 would allow the City to either sell existing off-street parking facilities, or to lease them to an outside party. However, the lease term could not exceed more than 10 years.

Article 15 - Streets, Traffic and Parking

Sections 301 and 302 of G.S. 160A establish a City's authority to operate on- and off-street parking facilities. These sections define the City's ability to install parking meters for on-street parking spaces and to charge a fee for off-street parking. These sections also establish limitations on how revenues from parking may be used; essentially for the enforcement, administration of the parking system and for payment of bonds issued for construction.

Article 15 sections are silent on the issues of privatization, but it does include language that provides the City the authority to charge fees for parking. It also places limitations on the use of parking revenues.

Article 16 - Public Enterprise (G.S. 160A, Section 321)

Section 321 of Article 16 allows a City to sell or lease any enterprise “upon any terms or conditions the council may deem best.”⁷ This clause grants the City wide discretion to sell or lease the identified public enterprises. This section does require the sale or lease of most public enterprises be subject to voter approval. However, the sale or lease of a parking facility or system is expressly exempted from requiring voter approval.

Article 16 would allow a City the authority to sell a parking garage without voter approval.

Article 19 - Planning and Regulation of Development

Section 458.3 Downtown development project - specifically identifies parking garages as a permissible type of downtown development project. This section discusses the requirements regarding the construction of public – private agreements in downtown development projects.

Article 19 is not germane to the discussion about privatization of parking per se, but it was believed to be a potential useful section of which to be aware.

Article 24 – Parking Authorities

Section 550 allows Cities the authority to establish a Parking Authority. The powers and purpose of a parking authority by Statute are as follows:

“An authority incorporated under this Article shall constitute a public body and a body corporate and politic, exercising public powers as an agency or instrumentality of the city with which it is coterminous. The purpose of the authority shall be to relieve traffic congestion of the streets and public places in the city by means of parking facilities, and to that end to acquire, construct, improve, operate and maintain one or more parking projects in the city.”⁸

This statute allows a parking authority many of the powers of a City including the following:

- The right to acquire property
- The right to construct buildings
- The right to construct, reconstruct, improve, maintain and operate parking projects
- The right to assess fees for parking
- The right to accept grants and loans
- The right to issue revenue bonds

A Parking Authority may acquire property by conveyance from the City, by direct purchase or by condemnation. (G.S 160A-557).

General Statute 160A-557c allows the City to convey public street rights-of-way to a Parking Authority to allow the Authority to install parking meters. (Italics added for emphasis.)

“Contracts may be entered into between the city and the authority providing for the property to be conveyed by the city to the authority, the additional property to be acquired by the city and so conveyed, the streets, roads, parkways, avenues and highways to be closed by the city, and the amounts, terms and conditions of payment to be made by the authority. Such contracts may

⁷ North Carolina General Statute, 160A-32, Sale, lease, or discontinuance of city-owned enterprise

⁸ Ibid 160A-556. Purpose and powers of the authority

contain covenants by the city as to the road, street, parkway, avenue and highway improvements to be made by the city, including provisions for the installation of parking meters in designated streets of the city and for the removal of such parking meters in the event that such parking meters are not found to be necessary or convenient. Any such contract may pledge all or any part of the revenues of on-street parking meters to the authority for a period of not to exceed the period during which bonds of the authority shall be outstanding; provided, that the total amount of such revenues which may be paid pursuant to such a pledge shall not exceed the total of the principal of and interest on such bonds which become due and payable during such period. Such contracts may also contain provisions limiting or prohibiting the construction and operation by the city or any agency thereof in designated areas of public parking facilities and parking meters whether or not a fee or charge is made therefor. Any such contracts between the city and the authority may be pledged by the authority to secure its bonds and may not be modified thereafter except as provided by the terms of the contracts or by the terms of the pledge. The city council may authorize such contracts on behalf of the city and no other authorization on the part of the city for such contracts shall be necessary.

Section 550 of G.S. 160A permits a City to establish a Parking Authority to manage parking within the limits of a City. While a separate entity, the Authority is not a private operator, but is a quasi-governmental agency. This statute allows a City to convey to a parking authority the right to use the revenue from on-street parking to pay for bonds issued by the authority (presumably to pay debt incurred to construct or acquire off-street parking facilities), though the statute is silent with regard to what type of bonds on-street parking revenue may be used to pay.

Summary

Based on our review, a City may sell or lease a parking facility (garage or surface lot) to a private party and in effect, monetize that parking asset.

The City may turn over the management and operation of the parking system to a Parking Authority.

However, the treatment of on-street parking assets presents the challenge with monetizing a parking system. The effective management of a parking system consists of managing the on-street and off-street assets as a unified system. Pricing and operation policies (such as lower prices for parking in garages and “first hour free” in parking garages) need to be coordinated between the on-street and off-street systems.

The Statutes do not address how on-street parking could be sold or leased to a third party. In North Carolina, Cities only have the authority expressly provided to them by the General Assembly. If the City wishes to pursue the monetization of the parking system (including on-street resources), the City may want to consider seeking enabling legislation from the General Assembly for this action.

The above review was conducted based on our experience as licensed professional engineers in the State of North Carolina familiar with traffic and parking issues. Prior to proceeding with further potential monetization of the City’s parking assets, it is recommended the City Attorney review these statutes and provide the Parking Study Team and the Department of Transportation with a legal opinion regarding this activity.

Parking Monetization Overview

In the last few years, this concept has attracted more interest as many cities, counties, and states face deep budget deficits. As a result, there has been an extensive amount of study and commentary on this trend. The

U.S. Government Accountability Office (GAO), the Public Interest Research Group (PIRG) and state legislatures have issued comprehensive reports on the subject. The Texas State Legislature recently released an extensive report on monetizing toll road projects, and the Federal Highway Administration examined monetization in other countries. The various reports and studies highlight the basics of best practices for asset monetization.

Some of the most insightful analysis of these practices has come from Stephen Goldsmith. Mr. Goldsmith, a former mayor of Indianapolis, is director of the Innovations in American Government Program at the Harvard Kennedy School. He is author of the book *The Power of Social Innovation: How Civic Entrepreneurs Ignite Community Networks for Good*. Many of his insights are included in the summary of “good asset monetization goals and key issues” below.

Parking Monetization Examples

- City of Chicago Off-Street
- City of Chicago On-Street
- Ohio State University
- City of Indianapolis On-Street

Monetization Goals and Keys Issues

Using Chicago or similar examples as the context (where the City’s on-street parking operation was leased to a partnership for a significant upfront payment in exchange for a very long-term lease) Stephen Goldsmith offered the following examples of good program monetization goals & key issues to be considered:

	Identifying non-core functions and areas that are not core competencies
1	<p>If parking management is not a core competency of the City then it is a candidate for privatization; however, if you are lucky enough to have a high functioning parking system that is providing excellent service and is contributing to community growth and development, think twice about what you may be giving up.</p>
	Establishing a long-term reserve fund to:
2	<ul style="list-style-type: none"> ▪ Enhance City credit rating and thus lower interest rates <ul style="list-style-type: none"> ○ Chicago did this and enjoyed its highest credit rating since 1978 ▪ Retire debt ▪ Eliminate interest payments and thereby create more money for community reinvestment <ul style="list-style-type: none"> ○ Chicago retired \$925 million in debt ▪ Community reinvestment <ul style="list-style-type: none"> ○ Identify and fund a well-defined set of community desired or essential infrastructure projects ○ Programs that serve the public good <ul style="list-style-type: none"> ▪ Example: Neighborhood parks and programs <ul style="list-style-type: none"> ○ Chicago invested more than \$325 million in this area ○ Infrastructure investments that will stimulate additional private sector investments <ul style="list-style-type: none"> ▪ Example: Parking structures as part of a public/private partnership.

3	<p>Shifting Risk</p> <p>Consider the following potential risks of managing on-street metered parking for the next 75 years (imagine bidding on the City’s horseshoeing concession in 1890, or the public pay phone in 1975)</p> <ul style="list-style-type: none"> ▪ Changing technologies ▪ Utilization ▪ Costs <ul style="list-style-type: none"> ○ Rising labor and fuel costs ○ Equipment replacement <ul style="list-style-type: none"> ▪ In Chicago, the cost of replacing the multi-space meters every 7 years is estimated at \$40 – 50 million dollars.
4	<p>Carefully analyze the term of any potential concession</p> <p>Both the Chicago Inspector General’s analysis and financial experts who have analyzed the deal indicate that Chicago should have negotiated a shorter lease period. Under their analysis, Chicago left significant future earnings on the table when it agreed to a 75 year concession term (estimated at \$1.3 – 2.1 billion).</p>
5	<p>Look at Alternative Solutions to Budget Problems</p> <p>Chicago became the poster child for using the proceeds of PPP asset leases to plug a budget operating deficit and “selling its residents’ future.”</p> <p>In 2006 the city sold the Chicago Skyway for \$1.83 billion, of which \$460 million was used to pay off debt, \$375 million was used to close the 2006 operating budget gap, and \$500 million was placed in a rainy day fund. The \$500 million rainy day fund was exhausted to close operating budget gaps in years 2007 and 2008.</p>
6	<p>Key elements of a monetization deal are transparency, expertise and setting controls over rates and “windfall profits”</p> <p>Allow elected officials to approve the terms of any proposed agreement before it is put out to bid.</p> <p>Don’t let the market/bidders solely dictate the terms of the monetization through a request for proposal process. Elected officials should have the power to alter the terms of the proposed deal as they see fit and drive the process through negotiation rather than have a fait accompli handed to them.</p> <p>The Texas State Legislature’s recent report on monetization advocated revenue sharing over single, upfront payments as a better way to protect the public interest. The report also noted that key elements of a monetization deal are transparency, expertise and setting controls over rates and “windfall profits.”</p>
7	<p>Do not include lease proceeds in a government budget before the leases are finalized</p> <p>Having a budget balanced on the back of lease proceeds makes it extremely difficult for officials to reject an asset lease or concession deal. Consider adopting an ordinance prohibiting a city’s budget from including revenue from monetization proceeds before commissioners have approved the deal.</p>

8	<p>Consider the creation of a Concession or Monetization Management Review Board</p> <p>The impact of these deals will affect a broad array of citizens, civic and cultural organizations, religious and educational institutions and corporations. These are individuals and businesses that are invested in their communities and deserve a voice as well as an open and transparent process.</p>
9	<p>If a parking program monetization strategy is pursued, consider the creation of a Downtown Parking Management Commission</p> <p>The Downtown Parking Management Commission could be made up of City, parking management entity and downtown stakeholders and should require the concessioner to be engaged with Downtown Parking Management Commission. The Parking Commission would provide an annual program assessment to City Council.</p>
10	<p>Term of the Agreement</p> <ul style="list-style-type: none"> ▪ Limit to 30 – 50 years ▪ Build in a mechanism to address changes in annual expectations ▪ Establish a defined monitoring process ▪ Create a process to generate an Annual Stakeholder Report Card <ul style="list-style-type: none"> ○ If the deal were to “go sour” have a plan for “how to get out?” Who pays what to whom? ○ Consider alternatives to a one-time only payment ○ Consider a lesser up-front payment with annual incremental payments to a dedicated parking reinvestment fund. ○ For cities with a parking tax, could the parking tax constitute the annual incremental payment?
11	<p>Maintaining and improving service levels to users of the parking system</p> <p>From the perspective of parking customers and those invested in the downtown a strong, well-managed parking system is critical to their success. The concessioner should ideally be a “partner for the success of the downtown” and implement programs and policies to effectively address the following:</p> <ul style="list-style-type: none"> ▪ Greater availability of parking spaces ▪ More convenient, state of the art equipment, with multiple payment options ▪ Quicker service of broken equipment <ul style="list-style-type: none"> ○ On the positive side, in Chicago meters are now repaired within a couple of hours on average compared to 2.5 days under the City run system ○ On the negative side, when the Chicago deal was initially implemented, meter rates were tripled in some places before new meter technology was introduced. The concessionaire literally could not empty the meters fast enough to keep them operational and patrons began getting citations for non-payment because the meters were full of quarters. ▪ A balanced approach to meet the needs of retail parking, employee parking, event parking, etc. ▪ Special programs to meet the needs of cultural, religious and civic institutions as well as customized neighborhood programs.

12	<p>Build on the “Partnership for Downtown Success”</p> <p>Building on the “Partnership for Downtown Success” concept requires an understanding of the needs of the business community, downtown residents and religious and cultural institutions. Once these needs are understood, implementation of parking program enhancements should be introduced. This is where the special expertise of a parking profession is needed. Programs to meet identified community needs might include:</p> <ul style="list-style-type: none"> ▪ Extended time limits near theaters, concert halls, schools and churches where parkers need more than 2 hours ▪ Free or reduced rate parking for churches on Sunday mornings ▪ Automatic ticket dismissal for inoperable meters, based on meter malfunction reports generated by the system ▪ Ability to pay citations on-line or even at a meter ▪ Improved parking access and convenient parking for hourly parkers to support downtown retail ▪ Discounted monthly parking in certain lots ▪ Donated single space meters to protect bicycle parking or as vehicles for charitable donations
13	<p>Sustainability and Innovation</p> <p>Promote sustainable and innovative parking technologies and interior parking facility environment enhancements</p> <ul style="list-style-type: none"> ▪ Improved customer service features ▪ Adopt “retail friendly” parking management best practices ▪ Create safe, clean and friendly parking environments ▪ Invest in sustainable design and management practices
14	<p>Other</p> <p>Other issues to consider</p> <ul style="list-style-type: none"> ▪ Who will develop and manage new parking facilities? ▪ Will the concessioner be allowed to manage competing facilities? ▪ Where will rate setting authority reside?

Parking System Monetization – The Extreme Scenarios Comparison

The reasons for considering an asset monetization and a long-term concession agreement for a parking system are easy to understand for cash strapped municipalities. Former Mayor Daley was allegedly quoted as saying “Does it really matter who collects the quarters from the parking meters?”

This statement exemplifies the lack of understanding of parking as a profession and an appreciation for the complexity and importance of a well-managed parking program. It also fails to consider the potential impacts on the downtown community that needs an effective parking program to be successful.

Asset monetization or privatization is not inherently good or bad. The key issues are exactly how the deal is structured and implemented. As with most things, the devil is in the details.

When considering how a monetization proposal effects downtown, we can frame the discussion by envisioning two radically different possible scenarios.

Scenario #1

City parking assets are leased to the top bidder for a large sum of money over a particular number of years. The successful bidder sees this as purely a business venture and they choose to manage the parking assets with a “pure profit motivation.” The results of this approach plausibly include:

- Parking rates are increased to whatever the market will bear.
- Facility maintenance is minimized or deferred.
- An automated parking management system is purchased on a low bid basis and routinely malfunctions, creating regular frustration for parking patrons.
- Staffing levels are minimized to increase profits.
- Every downtown event (parades, “Alive After Five” type events, etc.) become a “Compensation Event” for the concessioner and because of budget constraints the City is unable or unwilling to compensate the concessionaire and slowly downtown events become a memory.
- Parking facilities are used as vehicles for advertising but the ads are considered by many in the community to be offensive.
- Opportunities to support charitable organizations and churches are dismissed out of hand because they do not contribute to the “bottom line.”
- Monitoring of supply vs. demand and planning for future community parking needs is neglected.
- As parking becomes more problematic, office building leases expire and are not renewed.
- With no new public parking being planned and built, new development projects originally envisioned for downtown go to the suburbs or another downtown.

In short, a disaster for the downtown for those who have invested in downtown and for every citizen that ends up paying more for less service.

Scenario #2

Based on an open and collaborative process, the value and importance of downtown parking is understood and appreciated. Current and near-term community parking and access needs are identified and prioritized. A program of agreed upon downtown parking investments, vetted through downtown stakeholders and City administration is funded by the proceeds of the monetization. A high level Parking Commission is established to define standards for downtown parking safety, cleanliness, customer service, etc. The new parking management entity (the concessionaire), wanting to be a good neighbor and recognizing that “this is just good business,” is a willing partner in these initiatives. A stronger and more vital downtown means more parking customers for them. A program of approved downtown parking initiatives is authorized and includes:

- The addition of new parking supply in areas that currently have parking deficits.
- The new parking facilities are leveraged with private partners to also provide new downtown residential development and street level retail. The new mixed-use developments contribute positively to the urban fabric of downtown.

- New taxable assets are produced and the property values on the surrounding streets are enhanced. New tax increment is generated providing additional reinvestment potential.
- The addition of an appropriate amount of additional public parking promotes the adaptive re-use, in-fill, and preservation of older buildings.
- These new investments in downtown create new jobs, new downtown residents, and ultimately, a stronger and healthier downtown.

Monetization Case Study: City of Pittsburgh

In 2010, Pittsburgh Mayor Luke Ravenstahl, having learned some lessons from the Chicago parking monetization process, formed a Parking Advisory Committee to help guide the process for a parking system monetization effort.

The central issue that the Mayor was trying to solve was not parking related at all.

The problem was the solvency of the City Pension Fund. Unless the fund could be stabilized for the foreseeable future, the State was obligated to step in as the regulatory agency. The feeling was that the state would make tough decisions such as raising rates, strictly on the basis of pension fund financing and that these decisions could adversely impact the downtown economy and other community programs. The mayor wanted to avoid this loss of control and authority.

His proposed solution was to monetize the Pittsburgh Parking System.

The Advisory Committee was charged with:

- Evaluating how the transaction would affect the financial stability of the City
- Addressing the needs and concerns of relevant stakeholders and constituencies
- Formulating parameters for a successful process and resulting transaction

The Parking Advisory Committee developed nine guiding principles, covering the following topics:

1. The parking assets and economic health of the City
2. Transparency
3. Term of the Agreement
4. Parking rates
5. Adequate supply of parking spaces
6. Current employees and labor agreements
7. Future economic development
8. Minimum operating and maintenance standards
9. Continuing existence of the Authority

Parking Advisory Panel

In an attempt to provide an even more open public process, an “Advisory Panel Process” was funded by the Pittsburgh Downtown Partnership under the auspices of the International Downtown Association and included several parking professionals throughout the country. The purpose of the IDA Advisory Panel was to:

- Provide more detailed analysis of operational/management possibilities based on the City of Pittsburgh’s guiding principles and their potential impact on Downtown and city commercial districts.
- Provide perspective and “lessons learned” from other parking system monetization efforts across the United States.
- Compare best practices and successful parking strategies employed by other cities, particularly with regard to Downtown and commercial district office, residential, and retail development.
- Prepare a framework to establish an effective parking management system to support further Downtown and commercial district development.
- The IDA Panel did not assess any of the alternative proposals and, therefore, could not make an informed judgment as to their feasibility. The Panel focused on the Mayor’s overall plan and how a public/private partnership of the City’s parking system might best benefit Pittsburgh’s businesses and residents.

After an intensive series of individual and focus group meetings with downtown and neighborhood district stakeholders, the following set of panel recommendations were put forth:

- Centralized Parking Strategic Plan and Management
 - The Panel strongly urged the City to centralize parking related issues and develop an overall strategic and operational plan with respect to parking for Pittsburgh’s downtown and neighborhood commercial districts.
 - An entity, perhaps Public Parking Authority of Pittsburgh (PPAP), a designated city department or agency, or a new entity, should be empowered to undertake overall parking management in Pittsburgh. In effect, create a “one-stop shop” that coordinates parking planning, policy, and research.
- Enforcement
 - The Panel recommended that the PPAP continue to provide enforcement for metered spaces throughout the city and that enforcement be increased to:
 - Promote more turnover for on-street parking assets in the Downtown and commercial districts where turnover will benefit merchants.
 - Ensure that residential permit areas are functioning as intended, allowing residents and guests to find convenient on-street parking and discouraging others that use these spaces illegally.
 - Have sufficient cash flow to fund the ongoing operations of the PPAP.
 - The Panel recommended that enforcement revenues be used to deploy sufficient PPAP or contract staff to ensure that meters and residential permit areas are properly and appropriately enforced. The Panel further recommended that the City consider allowing a fallback provision allowing the operator to issue parking tickets if PPAP is unable to provide adequate enforcement.
 - The Panel recommended that the investor/operator be required through the Concessionaire Agreement to partner with government, other private interests, nonprofit organizations and community development corporations (CDCs) to achieve overall community and economic development goals of the City.

- Rates
 - The Panel understood that rates will rise in order to provide the investor/operator with sufficient revenue to improve the system while at the same time achieving the City goal of funding the pension fund and paying off the Parking Authority's bonded indebtedness.
 - Rate increases must be reasonable, geared to the existing market, known in advance, scaled up over a period of five years, and geared to inflation (as determined by the Consumer Price Index) thereafter.
 - The Panel recommended that rates should be flexible, geared to location, time of day, and other conditions or considerations. Any parking rate plan should be included in the Concession Agreement with the private investor/operator so that stakeholders will have sufficient notice of when rates are scheduled to change.
- Term of the Concessionaire Agreement
 - The Panel recommended that the term of any Concession Agreement be no longer than 50 years but that an analysis of terms from 35 – 50 years should be conducted. A shorter term might benefit both the City and the investor/operator.
- Technology Enhancements
 - Panelists found that one of the expected benefits achieved through public private partnerships is that the current parking system can become both more user-friendly and more effective in generating revenue if new technologies are installed throughout the system. One technological advance that can provide immediate benefits is the installation of multi-space meters. These meters accept credit, debit, and smart cards in addition to cash. Pay-and-display meters allow customers to use their purchased time at various locations. There is evidence that pay-and-display meters also may allow more cars per block, though some dispute this advantage. These systems also can be used in conjunction with pay-by-cell phone options to further enhance customer service. Other technologies that may improve revenues include license plate recognition systems and newer web-based parking management platforms. These systems also have been shown to improve operating efficiency and effectiveness and produce better system usage information leading to improved system management.
 - All potential investor/operators should be required to submit a plan for conversion from the existing meter system to new technologies. Another industry best practice in this area is to have a fully developed "new technology introduction plan" that includes advance public education, effective signage, a media kit and rollout strategy highlighting the positive new features of the equipment as well as information on how the new technology will be phased in, on-street "ask me how" ambassadors, etc. A transition period for enforcement also is recommended whereby only warning citations will be issued for a one or two week period following installation of the new equipment.
 - The Panel recommended that the companies responding to the Request for Proposals be required to outline their plans for introducing new technologies and describing how they intend to deploy these technologies.
- Supply
 - The Panelists heard comments that indicated parking deficits in parts of Downtown, with parking surpluses in other parts of Downtown. The Panel was provided anecdotal evidence that

- shortages exist in some communities (for example, in Shadyside and Squirrel Hill, and in the South Side in the weekend/evening period). A critical element of any strategic parking plan that is developed by the City will be careful monitoring of the supply of parking both in the Downtown and in the city's neighborhood commercial districts. The City should not foreclose its options to build new parking facilities should they be warranted.
- As part of the monetization effort the city should conduct a detailed parking supply and demand study and obtain from potential investor/operators strategies on how they expect to respond to supply shortages, especially in Downtown, if shortages are found to exist.
 - Recognizing that supply is likely to be an issue for some time to come in Downtown and certain business districts, the City should consider any lease proceeds in excess of the \$300 million required by the City needs for the pension fund and PPAP debt be earmarked first to address supply issues. The Panel further suggested that the City perform a comprehensive parking transportation strategic plan/needs assessment first so the City better understands parking needs and create a prioritized action and investment plan.
- **Community Impact**
 - The Panel heard from several stakeholders concerns about the impact rate increases and policy changes would have on churches, cultural and educational institutions, and community events. The Panelists believe these concerns are real and should be addressed in the Concessionaire Agreement. Specific recommendations include:
 - **Events** – The impact of higher rates or restricted parking on both large and small events can be considerable. There are a number of major festivals, parades and other events in Downtown that either use on-street meter or parking lot locations for event activities and/or that depend on people being able to find an inexpensive and convenient place to park. Other events in community business districts can be impacted as well.
 - The Panel recommended that provisions for major events of this nature be contained in the Concession Agreement.
 - **Retail** – For retail businesses and restaurants, major increases in parking rates or lack of availability of parking on lower floors can have a negative impact on their business.
 - The Panel recommended that private investor/operators be required to describe ways they may be able to alleviate these concerns or preferably demonstrate how they can develop or have developed programs that support and enhance the success of retailers and restaurants in a Downtown environment.
 - **Free Sundays** – Downtown churches in particular can be hurt if parking meters are enforced on Sunday.
 - The Panel recommended that the current policy allowing free parking at metered spaces and discounted rates in the two frequently used garages on Sundays be continued.
 - **Customer Services Enhancements**
 - Experience has shown that rate increase objections by the public are often mitigated by first offering enhanced customer services. Panelists noted that many, if not most, public parking systems offer little in the way of services that enhance the customer experience, yet parking is essential to a retail business, serving one customer and his or her vehicle at a time.

- Panelists recommend that the investor/operator be required to provide a package of new customer services prior to or in conjunction with any rate increases.
 - Operators should be asked to indicate what experience they have in terms of customer services and amenities and which ones they see as feasible and desirable in Pittsburgh. Another option can be to consider the development of parking customer service amenities as a specific new duty for the PPAP to adopt. This can include services such as vehicle lockout assistance, dead battery jump starts, vehicle location assistance, security escorts, etc. The positive public relations generated from these services then accrue to the City. These services can be funded by enhanced parking enforcement revenues.
- Transition Plan
 - Panelists cautioned that transitioning from PPAP operational management to new private investor/operator management is a process that should be carefully planned and phased in over an appropriate period of time. One of the reasons Chicago’s difficulties seem to have occurred was the rush to get new rates and policies on the street, often in advance of the new technology.
 - The Panel recommended that potential bidders be required to present their transition plans prior to final selection, and that these plans be considered in determining the winning bidder.
- Customized Neighborhood Parking Plans
 - Interviewees from various neighborhoods met with panelists and pointed out the differences between how parking policies, rates, supply, and management strategies can affect their individual communities.
 - The Panel recommended that the investor/operator be required to meet with representatives of business districts to develop customized neighborhood parking plans.
- Sustainability
 - As the panel reviewed the nine guiding principles set forth by the Parking Advisory Committee, a tenth potential guiding principle was proposed – sustainability. Pittsburgh has acquired a national reputation for its efforts to create and support a sustainable city and a sustainable Downtown.
 - The Panel recommended that respondents to the Request for Proposals outline plans to support the City’s sustainability goals. Further, the Panel recommended that car-sharing programs, seen as a support mechanism for Downtown residential development and as a “green” strategy, be offered consideration for special rates and convenient reserved spaces including some on-street spaces.
- Revenue Sharing
 - The Panel saw an opportunity to make use of any reserves that PPAP might have set aside, as well as funds from the Agreement over and above what is necessary to fund the pension plan and pay off PPAP bonded indebtedness in ways that will benefit the entire community and build community support.
 - The Panel recommended that these funds be used to support development in Downtown and community business districts in cooperation with other entities as appropriate. These funds also can be used for non-parking projects that support community economic development. The new

operator will be given the opportunity to manage and operate any new parking facilities developed as a result of this policy.

- Fairness
 - The Panel observed that private parking operators all pay taxes and recommended in the interest of fair competition that the new operator should pay local taxes at the same rates and conditions as private operators.

Parking Monetization Summary

Since 2010, a few parking programs have moved forward with some form of monetization program. Interestingly Pittsburgh was not one of them. In the end, Pittsburgh avoided the state takeover of the City Pension Fund, by leveraging the Parking Authority Assets to generate the capital needed to shore up the pension fund. Although leaving the parking authority deeply indebted.

Institutions that have moved forward with monetization programs include the City of Indianapolis (On-Street Parking Program) and The Ohio State University. Many more have looked at monetization and chosen a different path.

In 2011, Kimley-Horn's Dennis Burns led a panel of Public/Private Partnership experts at the International Downtown Association's Spring Conference in Chicago. These industry leaders praised the many benefits of public/private partnerships as well as the monetization of certain public assets such as toll roads, bridges, and even airports. They agreed that parking programs were a different matter entirely. The bottom line seemed to be that parking systems are actually more complex and tend to get very messy.

Other major parking programs that looked at monetization but backed away include the City of Las Vegas, the City of Memphis, the City of Sacramento, and the City of Tucson among others. Most of these cities came to the realization that parking is an important part of their civic infrastructure, parking was intrinsically linked to many of the critical areas including community and economic development, and giving up control of these assets limited their flexibility and potential management responses in the future.

Another key factor in these decisions is the notion that if these entities can provide such dramatic increases in operating efficiencies and increased revenues to justify such large upfront cash payments, why can't we implement these strategies ourselves and pocket the profits these firms would have realized? This has given rise to a new slogan in the industry "Modernize – not monetize."

There is a growing appreciation of the importance of parking as a tool for economic development as well as critical element of community infrastructure. Key considerations include:

- Who will be responsible for planning and funding future parking needs?
- Think about how many individual "customer touches" parking represents each day.
- Parking is often your customer's first and last impression of downtown.
- Well managed parking is both a responsibility and an opportunity.

In the end, no matter if parking is monetized or not, it is critical that the system be managed well in the interest of downtown development and economic vitality.

10 | Peer City Outreach

One of the quickest ways to measure the success and efficiency of a parking program is to evaluate it in comparison to other similar communities and programs. The peer city review is a quick and meaningful effort that allows the subject community inside the programs of other community parking programs, learning new best management practices and strategies that have strengthened these sister communities.

For this exercise, the project team identified nine communities that are either similar in scale, similar in location, or are looked at as communities that exemplify a high-level of parking management performance. The intent was to provide a comparison of both similar cities from the Mid-Atlantic/Southeast regions, as well as mid-sized cities with well performing parking programs.

Peer City Descriptions

The nine peer cities, shown on the map below, represent a variety of parking program characteristics. Some programs are small scale, while others are very robust and act as a standalone entity within the City. Some of the programs are not departments within the City, but rather a function of the downtown management district. Some programs are holistic departments within the City, while others are composites of several departments managing several aspects of the parking system.



The following sections provide a description of each of the programs, including contact information for the primary parking manager. These individuals represent a core network of peers that can be beneficial to the City of Durham as they implement the recommendations from this study. The City is encouraged to maintain contact with these peers, using this group as a network for idea sharing and implementation support.

Raleigh, NC

Contact Information	
Mr. Gordon Dash	Parking Administrator
Email: Gordon.Dash@raleighnc.gov	Telephone: 919-996-3030
Department Metrics	
<i>Number of Parking Spaces Managed</i>	On-Street: Paid – 1,204; Other – 500 Off-Street: 8,788
<i>Number of Employees</i>	38
<i>Parking Budget</i>	\$12,000,000
Community Metrics	
<i>Population</i>	416,126
<i>Program Type</i>	Management Agreement Operated Programs – City operates and manages the on-street facilities, and off-street facilities are managed by a private company (McLaurin Parking Company)
<i>Services Managed</i>	On-street (City): enforcement, collections, maintenance Off-street: operations and maintenance
<i>On-Street Parking Rate</i>	\$1.00 per hour
<i>Off-Street Hourly Parking Rate</i>	Decks: First 15 minutes free, \$1.00 per 30 minutes, \$12.00 daily maximum Lots: \$1.00 per hour, \$8.00 daily maximum
<i>Off-Street Monthly Parking Rate</i>	Decks: \$100.00 – 125.000 Lots: \$60.00

Greensboro, NC

Contact Information

Ms. Robin Davenport Parking Operations Manager

Email: robin.davenport@greensboro-nc.gov Telephone: 336-373-2156

Department Metrics

Number of Parking Spaces Managed On-Street: Paid – 901; Other – 530
Off-Street: 3,278

Number of Employees 15 Full Time, 4 Part Time

Parking Budget \$3,800,000

Community Metrics

Population 273,419

Program Type City operated

Services Managed Collection, maintenance, and enforcement

On-Street Parking Rate \$0.50 per hour

Off-Street Hourly Parking Rate Decks and Lots: \$0.50 per hour, \$6.00 daily maximum

Off-Street Monthly Parking Rate Decks and Lots: \$50.00

Winston-Salem, NC

Contact Information

Mr. Rodd Ring	Transportation Operations Manager
Email: RODDR@cityofws.org	Telephone: 336-747-6990

Department Metrics

<i>Number of Parking Spaces Managed</i>	On-Street: N/A Off-Street: 2,250
<i>Number of Employees</i>	20
<i>Parking Budget</i>	\$1,500,000

Community Metrics

<i>Population</i>	232,397
<i>Program Type</i>	City operated
<i>Services Managed</i>	Collections, maintenance, and enforcement of on-street parking facilities and 5 garages.
<i>On-Street Parking Rate</i>	Single-Space Meter Rates: \$0.50 per hour maximum Pay Station Rates: varies between \$1.00 per hour to \$1.67 per hour, depending on time period
<i>Off-Street Hourly Parking Rate</i>	Decks and Lots: \$1.00 per hour, \$9.00 daily maximum
<i>Off-Street Monthly Parking Rate</i>	Decks and Lots: \$42.00 – 65.00 typ., \$95.00 reserved

Charlotte, NC

Contact Information

Ms. Doreen Szymanski	Public Service and Communications Division Manager
Email: dszymanski@ci.charlotte.nc.us	Telephone: 704-336-7527
Ms. Clement Gibson	Special Programs Manager for Park It!
Email: cgibson@ci.charlotte.nc.us	Telephone: 704-336-4905

Department Metrics

<i>Number of Parking Spaces Managed</i>	On-Street: Paid – 1,100; Other – 690 Off-Street: 0
<i>Number of Employees</i>	15
<i>Parking Budget</i>	\$1,250,000

Community Metrics (all off-street parking is privately owned and rates vary widely)

<i>Population</i>	751,074
<i>Program Type</i>	On-street parking is outsourced to Central Parking Corporation. Off-street parking is all privately owned.
<i>Services Managed</i>	Collections, management, enforcement
<i>On-Street Parking Rate</i>	\$1.00 per hour
<i>Off-Street Hourly Parking Rate</i>	Decks and Lots: \$5.00 or \$6.00 for first hour, \$4.00 or \$6.00 each additional hour. \$20.00 daily maximum
<i>Off-Street Monthly Parking Rate</i>	Decks and Lots: \$65.00 – 130.00 typ.; \$200.00 reserved

Greenville, SC

Contact Information

Mr. Dennis Garrett	General Manager Parking
Email: dgarrett@greenvillesc.gov	Telephone: 864-467-4900

Department Metrics

<i>Number of Parking Spaces Managed</i>	On-Street: Paid – 0; Other – 750 Off-Street: 5,700
<i>Number of Employees</i>	28 Full Time, 25 Part Time Event
<i>Parking Budget</i>	\$6,000,000

Community Metrics

<i>Population</i>	59,366
<i>Program Type</i>	City operated
<i>Services Managed</i>	Collections, maintenance, enforcement
<i>On-Street Parking Rate</i>	Free
<i>Off-Street Hourly Parking Rate</i>	Decks: \$0.75 per half hour, \$6.00 daily maximum Lots: \$1.00 per hour, \$6.00 daily maximum
<i>Off-Street Monthly Parking Rate</i>	Decks: \$70.00 Lots: \$52.00

Chattanooga, TN

Contact Information

Mr. Brent Matthews	Director of Parking
Email: brentmatthews@gocarta.org	Telephone: 423-629-1411

Department Metrics

<i>Number of Parking Spaces Managed</i>	On-Street: Paid – 2,100; Other – 300 Off-Street: 3,100
<i>Number of Employees</i>	N/A
<i>Parking Budget</i>	N/A

Community Metrics

<i>Population</i>	170,136
<i>Program Type</i>	Hybrid organization managed by Parking Authority staff with contracted operations and maintenance.
<i>Services Managed</i>	Collection, maintenance, and enforcement of on-street meters, 6 surface lots, and 3 garages. Republic handles enforcement in some garages.
<i>On-Street Parking Rate</i>	\$0.75 per hour
<i>Off-Street Hourly Parking Rate</i>	Decks: \$1.00 – 4.00 per hour, \$7.00 daily maximum Lots: \$1.00 per hour, \$5.00 daily maximum
<i>Off-Street Monthly Parking Rate</i>	Decks: \$44.00 – \$60.00 Lots: N/A

Lincoln, NE

Contact Information	
Mr. Ken Smith	Parking Manager
Email: KSmith@lincoln.ne.gov	Telephone: 402-441-4617
Department Metrics	
<i>Number of Parking Spaces Managed</i>	N/A
<i>Number of Employees</i>	N/A
<i>Parking Budget</i>	N/A
Community Metrics	
<i>Population</i>	262,350
<i>Program Type</i>	Hybrid organizational structure managed by City staff with contracted enforcement.
<i>Services Managed</i>	Collections and maintenance. Enforcement is privatized.
<i>On-Street Parking Rate</i>	\$0.50 per hour
<i>Off-Street Hourly Parking Rate</i>	Decks: First Hour Free, \$1.00 per hour after, \$9.00 daily maximum Lots: \$0.50 – 1.00 per hour, \$9.00 daily maximum
<i>Off-Street Monthly Parking Rate</i>	Decks: \$60.00 – 80.00 typical; \$95.00 reserved Lots: \$20.00 – 45.00

Tempe, AZ

Contact Information	
Mr. Adam Jones	Deputy Director
Email: adam@downtowntempe.com	Telephone: 480-355-6070
Department Metrics	
<i>Number of Parking Spaces Managed</i>	On-Street: Paid – 770; Other – 0 Off-Street: 10,090
<i>Number of Employees</i>	31
<i>Parking Budget</i>	\$2,600,000
Community Metrics	
<i>Population</i>	164,264
<i>Program Type</i>	Downtown BID Managed – Downtown Tempe Community Inc. operates on-street, off-street facilities. Planning decisions done by the City
<i>Services Managed</i>	On-street, Off-street maintenance and collections
<i>On-Street Parking Rate</i>	\$1.50 per hour (80 – 180 minute limit)
<i>Off-Street Hourly Parking Rate</i>	Decks: First Hour Free, \$1.50 per hour after, \$12.00 daily maximum Lots: \$1.50 – 2.00/hour, \$8.00 – 12.00 daily maximum
<i>Off-Street Monthly Parking Rate</i>	Decks and Lots: \$40.00 – 45.00

Eugene, OR

Contact Information	
Mr. Jeff Petry	Deputy Director
Email: jeff.t.petry@ci.eugene.or.us	Telephone: 541-682-5079
Department Metrics	
<i>Number of Parking Spaces Managed</i>	On-Street: Paid – 1,400; Other – 4,000 (residential) Off-Street: 2,300
<i>Number of Employees</i>	12
<i>Parking Budget</i>	\$5,000,000
Community Metrics	
<i>Population</i>	156,921
<i>Program Type</i>	City Operated
<i>Services Managed</i>	On-/Off-Street Operations, Enforcement, Marketing
<i>On-Street Parking Rate</i>	\$1.00 per hour (city), \$1.70 per hour (campus)
<i>Off-Street Hourly Parking Rate</i>	Decks and Lots: \$1.00 per hour, \$6.00 daily maximum
<i>Off-Street Monthly Parking Rate</i>	Decks and Lots: \$40.00 – 57.00 (\$20.00 – 28.00 for rideshare)

Interview Results

The following questions were asked of each of the peer cities. The responses below are representative samples of the responses. Full responses can be found in the Appendix of this report.

1. Define the parking management structure within your community. Who operates on-street parking? Who operates off-street parking? Who enforces parking regulations? Who defines parking planning and infrastructure decisions?
 - Greenville, SC – Everything is operated through the Parking Program, which is housed under the Public Works Department.
 - Winston-Salem, NC – Everything is operated through the Transportation Department.
 - Chattanooga, TN – CARTA manages on-street parking, six surface lots, three garages, collections, maintenance, and enforcement. Planning is done in conjunction with the Traffic Engineering department.
 - Tempe, AZ – The Downtown Tempe Community Inc. (DTC) operates the on- and off-street, enforcement, maintenance, and collections. Planning decisions are made at the City but DTC has a seat at the table.

- Lincoln, NE – The City uses a hybrid approach with the Parking Manager and Accountant housed under the Urban Development department and all operations outsourced to a private parking operator who reports back to the Parking Manager.
 - Charlotte, NC – Also uses a hybrid approach with minimal City staff (15 full time staff) overseeing an outsourced parking program. The City indicated the benefits of this approach are more efficient management of the program and a greater flexibility with management decisions.
 - Eugene, OR – The parking department manages everything but planning decisions but they have a seat at the table.
 - Raleigh, NC – Hybrid program with City staff overseeing and staffing the on-street program, and the parking manager overseeing an outsourced off-street program.
2. When was the last time your community did a comprehensive or strategic plan? What are some of the lessons you learned from that exercise? What would you pass on as key strategies or recommendations?
- Lincoln, NE – Last study completed in 2009/2010. The results helped to set a vision for the parking program and began the process for the full outsourcing and management of on-street operations.
 - Tempe, AZ – Last study completed in 2010. The study provided a road map for defining provision of public parking for private demands. The general results were that a provision of parking for private demands should return a 5:1 investment in the downtown area.
 - Greensboro, NC – Last study completed in 2007. The study provided guidance for residential parking programs and promoted a large parking marketing program, including surveys, signage, brochures, websites, etc.
 - Raleigh, NC – Last study completed in 2008. The study concluded that the City could do a much better job handling complaints and responsiveness, by bringing on-street program in house and that there was an abundance of available parking, even though the perception said there wasn't enough.
3. What is your approach to parking pricing? Do your off-street and on-street rates complement one another? How often do you adjust rates?
- Raleigh, NC – The current system has on-street rates at \$1.00 per hour consistently throughout downtown. The off-street rates are higher, but those are based on the outstanding debt service owed on the garages. The hope is to get to performance based pricing at some time in the future.
 - Eugene, OR – The current downtown on-street system is set at \$0.75 to \$1.00-per hour, but there is an impending change to \$1.25 per hour soon. The off-street rates are set at the value at which they balance demand, but are lower than on-street rates.
 - Charlotte, NC – On-street rates have not changed in 15 years. The last rate change took them to \$1.00 per hour. On-street is priced lower than off-street, because off-street parking is privately owned.
 - Greenville, SC – On-street parking is free, while off-street parking is set at \$1.50 per hour. Last rate change was in 2005 or 2006.
 - Winston-Salem, NC – Has recently changed their on-street parking pricing structure to include a form of progressive pricing. In April 2010, the City introduced a new rate structure that allows

for low initial rates and higher rates as the motorist chooses to buy more time. See Table 10.1 for more details.

Table 10.1 – Winston-Salem, NC On-Street Parking Rates

Time Period	< 1 hour	1 hour	2 hours	3 hours	4 hours	5 hours	6 hours	6+ hours
Cost	\$0.25	\$0.50	\$1.00	\$2.00	\$4.00	\$6.00	\$8.00	\$10.00

- Greensboro, NC – On-street parking is set at \$0.50 per hour. Off-street is now set at \$0.75 per hour (as of July 1, 2012).
 - Chattanooga, TN – Now that CARTA has control of the on-street parking, they are making incremental steps to balance parking pricing. As of right now, the on-street rates are \$0.75 per hour, but a new ordinance is set to allow for increase up to \$2.00 per hour. The parking program plans to step rates up at \$0.25 increments.
 - Tempe, AZ – Set rates on-street to allow for 15-20% vacancy of spaces. Recent introduction of credit card meters have allowed for greater acceptance and payment of current rates. Off-street rates are adjusted as supply and demand dictate.
 - Lincoln, NE – The on-street/off-street balance is upside down right now, but a current ordinance intends to raise on-street rates to \$1.00 per hour, with provisions for \$0.25 step ups beyond that.
4. What is your approach to customer service related to parking? How does this occur in the enforcement environment? The management of parking? The marketing of parking?
- Lincoln, NE – The City recognizes that parking is the first experience a downtown consumer makes and tries to make parking a “non-experience.” Their enforcement program uses the ambassador model while their first hour free program provides incentive for users to park off-street.
 - Tempe, AZ – Market parking as easy and seamless. Enforcement is set up to promote compliance over citations.
 - Chattanooga, TN – Enforcement staff are trained as ambassadors, with hospitality training, “causal uniforms,” and an emphasis on “on foot patrols” helping people with directions and parking decisions.
 - Winston-Salem, NC – Approach is to “keep people honest” by promoting education of parking regulations through regular enforcement of downtown.
 - Greenville, SC – Improving education of parking regulations through marketing and educational materials. Created a customer service coordinator position with the intention of improving parking education.
 - Charlotte, NC – Looking to improve customer service. Would like to move to the ambassador model, but hard to find staff who can wear both hats. Motto: *Public Service is our Business.*
 - Eugene, OR – Try to operate in grey area, instead of black and white...using common sense when applying tickets. Motto: *Enhance neighborhood livability and improve economic prosperity.*

- Raleigh, NC – High emphasis is placed on customer service. The City hires people with good approach to customer service and good command of the English language. Like agents to be dressed in police style of uniform – commands more respect. Previous operators used a less formal uniform, which led to more hostility and less respect. Agents are instructed to work as ambassadors and have to pass routine tests about location, directions, destinations, and helping people.
5. What is your approach to using technology? On-street? Off-street? Enforcement?
- Greenville, SC – All garages are fully automated with pay in lane systems and no cashiers.
 - Lincoln, NE – Off-street system is cutting edge (pay-in-lane), but the on-street system needs an upgrade (*RFP on the street now*). Looking to get into license plate recognition for on-street enforcement.
 - Tempe, AZ – Has single space credit card meters on-street, sensors for data collection, and credit card payments off-street. Off-street could use improvement.
 - Chattanooga, TN – Uses a combination of multi-space meters and single-space meters on-street. Also uses License Plate Recognition (LPR) technology for off-street enforcement.
 - Winston-Salem, NC – Multi-space meters on-street and credit card acceptance off-street.
 - Charlotte, NC – Multi-space meters on-street with a pay-by cell add on component.
 - Eugene, OR – Enforcement officers carry iPhones to use scheduling, photo documentation, application (e-park Eugene), ticket/citation issuance, Evernote (screenshots). Uses LPR for on-street enforcement. Single space credit card meters on-street, multi-space meters off-street, with a pay-by-cell component on each.
 - Raleigh, NC – Multi-space meters with sophisticated back-end enforcement software. Pilot study of sensors ongoing.
6. Do you do a first hour free program? What have been the tangible and intangible benefits of this program?
- Greenville, SC – No, because garage occupancy is already high so no need to incentivize.
 - Lincoln, NE – Yes, and have seen the durations of stay increase by one hour. The business community loves the program and it has replaced all validation programs.
 - Tempe, AZ – Yes, and the program has provided good will and added value to the downtown businesses, as well as enticing consumers to park off-street.
 - Greensboro, NC – Have had the program for several years. The trend they have noticed is people trying to get in and out of the garages in an hour or less.
7. What is your approach to parking enforcement (i.e. compliance versus citation issuance)? How do you measure success with enforcement? What are key lessons or strategies you can impart on peer cities?
- Winston-Salem, NC – Success metrics are a tightrope, with some measuring it by tickets, some by complaints, and some by fines. Try to provide the consumer an easy method of payment and a less confusing citation program.
 - Lincoln, NE – Avoids using a stealth approach to enforcement. Encourage staff to “walk and talk,” helping customers with problems. Have seen the number of violations go down since taking over enforcement.

- Tempe, AZ – “Compliance Over Citations.” Using education to help promote proper parking, rather than heavy handed ticketing. As fine revenue goes down, they have seen meter revenue go up.
 - Chattanooga, TN – Takes a “friendly approach” to ticketing. Have removed staff in cars and placed staff on foot. Seen fewer complaints.
 - Greensboro, NC – “Educate through Enforcement”
 - Charlotte, NC – Don’t want to cite people to death. Educate to improve compliance.
 - Eugene, OR – Looking for 5% decrease in the number of tickets annually (improving education for parking compliance). Encourages staff to write “Great Tickets.”
 - Raleigh, NC – Citations issued + revenue generated + complaints generated – less complaints and less citations is a good indicator.
8. What is your #1 priority related to your program? How does that align with the strategic vision of your community?
- Eugene, OR – Marketing and rebranding the program.
 - Raleigh, NC – Pay off debt service.
 - Charlotte, NC – New meters and clear signage.
 - Greenville, SC – Planning for the future.
 - Lincoln, NE – Providing quality service to citizens.
 - Winston-Salem, NC – Promote economic development.
 - Tempe, AZ – Promote a positive image of the downtown and parking program.
 - Chattanooga, TN – Make sure parking is represented well in all functions/decisions.
 - Greensboro, SC – Educate parking consumers.
9. What is the perception of parking in your community? How has that changed since you took over? What were key decisions that improved the perception of parking? What decisions have negatively impacted the perception of parking?
- Greensboro, NC – Parking is a “Catch 22” business; everyone wants it free, but also readily available.
 - Greenville, SC – Not enough parking.
 - Lincoln, NE – Improving the program has provided a “One Stop Shop.”
 - Winston-Salem, NC – It’s “Hard to Find Parking” downtown.
 - Tempe, AZ – The parking experience has become easier.
 - Chattanooga, TN – There isn’t enough parking, even though this perception is false.
 - Charlotte, NC – People love the ParkIT! Program. The Park It! on-street program is a Charlotte Department of Transportation turnkey operation outsourced to Central Parking Corporation.
 - Eugene, OR – Downtown doesn’t have an identity right now but it’s coming. Most people say they don’t care or “it sucks.” Art program has helped to bring in a niche market. It creates a creative culture and excitement in downtown.

- Raleigh, NC – When Gordon came 5 years ago, his neighbors were of the opinion that “no one would come downtown, it would take forever to find a space, and you would likely get a ticket.” In the last 5 years, they have implemented paid parking, and it has become easier to find a space. Downtown has better generators to draw people downtown and the parking has improved in concert with it.

10. If you could change one thing about your program, what would it be?

- Chattanooga, TN – “Wouldn’t change anything.”
- Greensboro, NC – “Added support from top down.”
- Greenville, SC – “Improve education and awareness.”
- Lincoln, NE – “Keep politics out of decision making.”
- Winston-Salem, NC – “Better maintenance of garages through capital budget.”
- Tempe, AZ – “Control of adjudication process.”
- Charlotte, NC – “Up the rates and/or extend the hours.”
- Eugene, OR – “Improve Outdated Signage.”
- Raleigh, NC – “More equitable pay for enforcement staff.”

Peer City Review Key Findings

The following is a summary of the overarching findings from completing each of the peer city interviews.

Use of a Hybrid Management Model

Most of the cities interviewed used some type of hybrid management model. Use of a hybrid management model allows cities to oversee parking operations with minimal staffing and the ability to making planning decisions with regards to the parking program. City staff is typically responsible for overseeing the outsourced program, but the daily operations and management are conducted by the management company that the program was outsourced to. Many of the cities decided to move to a hybrid management model as a means to improve efficiency and scope of operations without committing to additional City manpower.

Use of Newer Technology for On-Street and Off-Street Parking Revenue Control

Most of the cities interviewed have implemented new parking technology within the past five years, including multi-space meters, pay-in-lane systems for off-street facilities, single-space credit card enabled meters, and use of iPhones for enforcement officers. Many cities noted using a combination of each of these technologies or a mixture with their older technologies. In addition to the tangible benefits to consumers and management, the use of newer technology allows cities to take advantage of the streamlined back-end enforcement and management software, enabling them to make more informed parking pricing decisions and streamline revenue collections and enforcement.

First Hour Free for Off-Street Parking Facilities

More than half of the cities interviewed had a first hour free program in their off-street parking facilities. The cities noted that their first hour free programs have had multiple benefits, but most noted the benefits to nearby businesses as the primary reason for implementing and maintaining the program. First hour free programs entice people to park off-street, reducing on-street parking demands. However, one city noted that

their reason for not implementing a first hour free program is that their off-street facilities already have such a high demand that they do not need to have a program to entice people into the garages and lots.

First hour free programs also encourage people to park for longer periods of time, in off-street parking facilities. Since the first hour is free, people are more inclined to park longer than they normally would have if they had to pay for multiple hours, which is beneficial for the surrounding businesses in terms of increased traffic and potential sales. However, one respondent noted that they saw a trend where people park and leave within that one hour window to avoid paying for parking, essentially using off-street facilities as short-term parking. Regardless of this trend, the first hour free program still encourages people to park off-street and visit local businesses for longer.

Parking Enforcement Officers as Ambassadors

Many of the cities are starting to use their parking enforcement officers as city ambassadors, rather than simple enforcers of traffic and parking violations. Many cities are educating their parking enforcement officers on parking management, the city services as a whole, and are having their officers perform their enforcement duties on foot rather than in vehicles so that they are more approachable and able to have conversations with patrons. A face-to-face conversation with an informed parking enforcement officer helps to placate the public because questions can be answered on the spot. Additionally, the officers can help educate the public on parking regulations and how and where to properly park. As a result, these cities have seen a decrease in violations and perceptions towards parking officers and parking programs in general have become more positive. Cities that have taken such an approach with their parking enforcement officers are receiving fewer complaints. As compliance increases with the ambassador approach, revenue from citations will inevitably decrease as well. However, one city noted that they have experienced a decrease in revenue from citations, but also have seen an increase in revenue from the meters because people are paying for the full amount of parking rather than parking illegally. Overall, the consensus from the peer cities interviewed was that parking enforcement officers should be used in a more “customer service” role that promotes a positive image of the Downtown and creates a better experience for the consumer.

Development of Education and Marketing Programs

To improve compliance with parking regulations and to make the perception of parking more positive, many cities developed education and marketing programs to explain the “how and why” of parking regulations. Similar to using parking enforcement officers as ambassadors, cities are taking the approach of improving compliance over violations to increase revenues and improve the perception of their parking program. However, many cities realize that general public education cannot be accomplished simply with ambassadors – there needs to be a wider education and marketing campaign.

Parking in downtown areas has a long standing negative perception. People say that they “cannot find a spot,” “will likely get a ticket no matter where they park,” etc. Education and marketing programs work to dispel these negative perceptions by educating the public on how the parking program works. Additionally, having a brand or some type of persona attached to the parking program helps people identify and relate with it. Many cities have undertaken rebranding for their entire parking program to help standardize parking for the general public and change the public’s perception of parking. However, other cities, like Eugene, OR, which doesn’t have a brand identity, have found an identity organically by encouraging a market for creative culture in their downtown. Improving education and awareness of parking regulations and procedures remains a top priority for many cities as they try to encourage compliance and improve the public perception of parking.

11 | Financial Analysis

A financial analysis of the City of Durham's existing parking revenues and expenses was conducted for the existing parking system. Based on historical financial data provided by the City, assumptions developed through conversations with City staff, and the impact of recommendations presented in this document, projections of revenue and expenses were performed for the next 10 years (see Appendix C); however, 2-, 3-, 5-, and 10-year projections are provided in this section. One recommendation in this study is to redefine the Parking Enterprise Fund with a goal of aligning all parking related items into the Fund and for the Fund to be self-funded by year 2022/2023. This financial analysis provides the qualitative breakdown of the Parking Enterprise Fund to meet that ultimate goal. The following sections document this analysis and provide the results of the projection exercise.

Review of Past Expense and Revenue

Historically, the City of Durham has allocated parking related revenues and expenses to different departments, such as the Department of Transportation and General Services. The summary of past revenues and expenses presented in this section aggregate these values as if they were in one central Parking Fund and are used as the baseline for projecting finances for the recommended Parking Enterprise Fund.

Past Expenses

Actual expense data for the previous three fiscal years (2010/2011, 2011/2012, and 2012/2013) and budgets for the current fiscal year (2013/2014) were provided by the City. This information was provided in three main categories – off-street operating expenses, off-street special event labor, on-street operating expenses, and debt service.

Off-street operating expenses and indirect costs, currently assigned to the Department of Transportation, for City-owned facilities reflect contract amounts that are paid to Lanier Parking Solutions to provide management, operations, and enforcement services to City-owned surface lots, as well as the four main parking garages within the Downtown Loop – Durham Centre, Chapel Hill Street, Church Street, and Corcoran Street. Operating expenses for the North Deck were provided as a separate line item, as the garage is leased to and managed by Blackwell Street Management Company, whereas the other City-owned facilities are managed by Lanier Parking Solutions.

Special event labor, currently assigned to the Department of Transportation, reflects additional costs assumed by Lanier Parking Services for operating off-street facilities outside of typical operating hours. The values categorized as special event labor capture those efforts three parking garages within the Downtown Loop – Durham Centre, Church Street, and Corcoran Street. As part of the contractual agreement between the City and Blackwell Street Management Group, the City is not responsible for additional costs associated with special event labor at the North Deck; however, the City does get a share of the revenue generated, which is captured in the following section.

On-street operating expenses, currently assigned to the Department of Transportation, reflect the amounts that are paid to Lanier Parking Solutions to provide management, operations, and enforcement services for on-street parking including areas within the Downtown study area, as well as residential areas surrounding North Carolina Central University and Duke University.

Parking garage maintenance costs are also provided for 2012/2013, as well as the anticipated budget amount for 2013/2014 for maintenance/improvements projects to parking garages currently underway.

Debt service expenses, currently assigned to the City General Fund, are recurring payments as a result of the original construction of the North Deck, as well as for other general obligation parking debt service, which includes renovations to existing garages.

Refer to Table 11.1 for a summary of past overall parking expenses.

Table 11.1 – Past Expense

	<i>Historical¹</i>			<i>Budget²</i>
	2010/2011	2011/2012	2012/2013	2013/2014
Off-Street Operating Expenses	\$1,542,162	\$1,581,807	\$2,537,091	\$2,399,000
Operating Expenses	\$1,127,619	\$1,184,695	\$1,331,361	\$1,249,000
Indirect Cost	\$16,750	\$16,750	\$453,881	\$454,000
North Deck Operating Expenses	\$307,613	\$316,800	\$326,304	\$336,000
Special Event Labor	\$90,180	\$63,562	\$57,408	\$59,000
Parking Study	-	-	\$227,830	\$2,000
Parking Garage Equipment/Maintenance Cost	-	-	\$140,307	\$299,000
On-Street Operating Expenses	\$309,040	\$318,037	\$337,965	\$329,000
Operating Expenses	\$309,040	\$318,037	\$337,965	\$329,000
Off-Street Debt Service	\$3,257,593	\$2,203,173	\$2,060,299	\$1,999,000
North Deck Debt Service	\$1,280,093	\$1,243,173	\$1,120,299	\$1,077,000
Other General Obligation Parking Debt Service	\$980,000	\$960,000	\$940,000	\$922,000
Old Debt Service – Last Payment	\$997,500	-	-	-
Total Past Expense	\$5,108,795	\$4,103,017	\$4,935,355	\$4,727,000

¹ Historical finances provided by the City

² Budget finances are projections provided by the City, rounded to the nearest \$1,000

Past Revenues

Actual revenue data for the previous three fiscal years (2010/2011, 2011/2012, and 2012/2013) and budgets for the current fiscal year (2013/2014) were provided by the City. This information was provided as Daily Cash Receipts in the following categories:

- Monthly, hourly, and event revenue for each garage (Durham Centre, Chapel Hill Street, Church Street, Corcoran Street, and North Deck)
- Monthly and hourly revenue for the aggregate of City-owned surface lots
- Fines and citations for on-street enforcement

Each category represents the revenue generated from users within that category and is currently assigned to the Department of Transportation. A description of monthly, hourly, and event policies and rates, as well as enforcement policies and fines, are provided in Chapter 6.

In addition, contributions from the debt fund, investment and rental income, and appropriations to fund the remaining balance are included as revenue to the fund as well.

Refer to Table 11.2 for a summary of past overall parking revenues.

Table 11.2 – Past Revenue

	<i>Historical¹</i>			<i>Budget²</i>
	2010/2011	2011/2012	2012/2013	2013/2014
Durham Centre Garage Revenue	\$268,254	\$324,429	\$340,134	\$380,000
Monthly Revenue	\$177,788	\$197,091	\$189,699	\$229,000
Hourly Revenue	\$49,341	\$76,599	\$74,281	\$62,000
Event Revenue	\$41,125	\$50,739	\$76,154	\$89,000
Corcoran Street Garage Revenue	\$404,545	\$436,189	\$432,434	\$493,000
Monthly Revenue	\$337,857	\$361,893	\$347,687	\$413,000
Hourly Revenue	\$52,575	\$53,567	\$64,120	\$55,000
Event Revenue	\$14,113	\$20,729	\$20,627	\$25,000
Chapel Hill Street Garage Revenue	\$280,108	\$264,119	\$284,238	\$323,000
Monthly Revenue	\$212,772	\$190,259	\$212,981	\$249,000
Hourly Revenue	\$67,336	\$73,860	\$71,257	\$74,000
Event Revenue	-	-	-	-
Church Street Garage Revenue	\$339,647	\$327,387	\$266,949	\$229,000
Monthly Revenue	\$162,948	\$137,527	\$126,168	\$137,000
Hourly Revenue	\$173,096	\$181,366	\$129,736	\$78,000
Event Revenue	\$3,603	\$8,494	\$11,045	\$14,000
North Deck Revenue	\$709,102	\$875,176	\$764,682	\$802,000
Monthly Revenue	\$581,445	\$751,440	\$702,300	\$728,000
Hourly Revenue	-	-	-	-
Event Revenue	\$127,657	\$123,736	\$62,382	\$74,000

Table 11.2 – Past Revenue (continued)

	Historical ¹			Budget ²
	2010/2011	2011/2012	2012/2013	2013/2014
Off-Street Surface Lot Revenue	\$410,648	\$389,032	\$288,807	\$206,000
Monthly Revenue	\$174,648	\$151,956	\$146,228	\$166,000
Hourly Revenue (Lot 8)	\$236,000	\$237,076	\$142,579	\$40,000
Fines and Citations	\$367,669	\$300,305	\$253,705	\$250,000
Investment and Rental Income	\$3,504	\$1,803	\$1,292	\$2,000
Total Past Revenue	\$2,783,477	\$2,918,440	\$2,632,240	\$2,685,000

¹ Historical finances provided by the City

² Budget finances are projections provided by the City, rounded to the nearest \$1,000

Past Net Surplus / Deficit

The numerical difference between past revenue and past expense represents the net surplus / deficit of the overall Parking System Fund. Based on Table 11.3, it is evident that parking related activities in the City have been operating at a deficit over the past few years with the expectation of a similar result in the current year.

Table 11.3 – Past Net Surplus / Deficit

	Historical ¹			Budget ²
	2010/2011	2011/2012	2012/2013	2013/2014
Past Expense	\$5,108,795	\$4,103,017	\$4,935,355	\$4,727,000
Past Revenue	\$2,783,477	\$2,918,440	\$2,632,240	\$2,685,000
Past Net Surplus / Deficit	\$(2,325,318)	\$(1,184,577)	\$(2,303,115)	\$(2,041,390)

¹ Historical finances provided by the City

² Budget finances are projections provided by the City, rounded to the nearest \$1,000

Projection of Future Expenses

The next step in the financial analysis was to project the future expenses for the parking system including those items discussed as past expenses, and recommendations outlined within this document. The recommendations generated were developed with a goal of meeting the Guiding Principles set forth at the onset of the project, as well as creating a self-funded Parking Enterprise Fund within the 10-year planning horizon. Assumptions made regarding expenses are a result of knowledge and understanding of similar systems in other locations, as well as collaboration with City staff.

Operating Expenses and Existing Debt Service Obligations

The City of Durham tracks operating expenses into two main categories – off-street and on-street. For off-street expenses, the City distinguishes between typical operating expenses paid to Lanier Parking Services to operate the parking system and staffing for special events.

Similar to past expenses, off-street operating expenses for the North Deck are considered separately, as this facility is operated and managed by Blackwell Street Management Company. Projected operating expenses for North Deck were provided by the City, as projections specific to this facility are monitored and reported by Blackwell Street Management Company. Off-street operating expenses for all other City-owned facilities were estimated to increase at an annual rate of 2%. Similarly, special event labor and on-street operating expenses were also assumed to increase at an annual rate of 2%.

Many recommendations within this study result in the need to increase parking operation efforts beyond the current level including implementation of a paid on-street parking program, dedicated Parking Manager, improved enforcement, additional enforcement and/or management staff, strategic planning studies and other efforts. For this study, it was assumed that this level of additional operating expense would represent an increase over current operating expenses for the off-street parking systems and is captured in the 2013/2014 off-street operating expense budget values. In addition, an increase in security presence at City owned garages is recommended. Additional costs for this recommendation (including \$200,000 beginning in 2014/2015 with a 2% annual increase) are included in the off-street operating expense to account for additional security patrol staff and ongoing operations and maintenance of security systems. The increase in operating expenses for the on-street program are captured in the “Paid On-Street Parking” section of this financial analysis such that all costs associated with that program are considered in aggregate. The resulting additional operating expense was then escalated 2% annually. Additional operating expenses are included in the projections shown in Table 11.4.

The City currently holds debt service related to specific parking projects (North Deck construction and renovation of Durham Centre, Corcoran Street, and Church Street garages). The debt service obligation for these projects is paid out of the General Fund and is scheduled to be paid at decreasing rates over the 10-year planning horizon.

Refer to Table 11.4 for a summary of projected operating expenses and existing debt service obligations.

Table 11.4 – Projected Operating Expenses and Existing Debt Service Obligations

	Budget ¹	Projections			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Off-Street Operating Expenses	\$2,100,000	\$2,334,000	\$2,375,000	\$2,459,000	\$2,689,000
Operating Expenses ²	\$1,249,000	\$1,274,000	\$1,299,000	\$1,352,000	\$1,492,000
Indirect Cost	\$454,000	\$454,000	\$454,000	\$454,000	\$454,000
North Deck Operating Expenses ³	\$336,000	\$346,000	\$357,000	\$378,000	\$439,000
Special Event Labor ⁴	\$59,000	\$60,000	\$61,000	\$63,000	\$70,000
Parking Study	\$2,000	-	-	-	-
Increased Security	-	\$200,000	\$204,000	\$212,000	\$234,000
On-Street Operating Expense⁵	\$329,000	\$335,000	\$342,000	\$356,000	\$393,000
Off-Street Debt Service	\$1,999,000	\$1,929,000	\$1,867,000	\$1,736,000	\$1,451,000
North Deck Debt Service ⁶	\$1,077,000	\$1,030,000	\$988,000	\$897,000	\$666,000
Other General Obligation Debt Service ⁷	\$922,000	\$899,000	\$879,000	\$839,000	\$785,000
Total	\$4,428,000	\$4,598,000	\$4,584,000	\$4,551,000	\$4,533,000

¹ Budget finances are projections provided by the City, rounded to the nearest \$1,000

² Operating Expenses assume 2% annual increase

³ North Deck Operating Expenses are projections provided by the City, based on the agreement with Blackwell Street Management Company, rounded to the nearest \$1,000

⁴ Special Event Labor assumes 2% annual increase

⁵ On-Street Operating Expense assumes 2% annual increase

⁶ North Deck Debt Service is projections provided by the City, rounded to the nearest \$1,000
North Deck Debt Service projected to expire in FY2023

⁷ Other Debt Service are projections provided by the City, rounded to the nearest \$1,000
Other Debt Service projected to expire in FY2031

Off-Street Maintenance

Currently, structural assessments and facility rehabilitation is managed through the City's General Services Department. As such, expenses associated with these endeavors are not paid for using parking funds. However, considering the recommendation to develop a self-funded Parking Enterprise Fund, costs associated with assessing and maintaining City-owned facilities must be considered. To maintain the safety of parking facilities, particularly garages, and to help extend their life expectancy, structural assessments should be performed every 3 – 5 years with rehabilitation projects every 5 – 10 years as needed depending on the age and condition of each facility.

The City is currently in the process of assessing and repairing their parking garages, with the Durham Centre and Corcoran Street garages being renovated within the past several years, the Chapel Hill Street garage currently in

the process of renovation, and the Church Street garage scheduled for renovation. The estimated cost of the Church Street garage renovation is \$1,250,000. This cost is accounted for within the financial analysis as a debt service beginning in 2015/2016. The annual cost with a 10 year payback period and 2% interest rate is approximately \$140,000 per year.

The North garage should undergo assessment and renovation, if needed, within the near future. Maintenance activities for parking garages can be classified into the following three categories: annual routine maintenance, preventative maintenance and repair and restoration. These classifications are described as follows:

- Annual routine maintenance. These are the ongoing activities associated with owning a garage, or any building or structure. This includes maintaining exterior landscaping, garbage removal, maintenance contracts on elevators, trash-pick, and other activities. These maintenance activities are independent of type of garage (cast-in-place or precast) and the age of the garage. For planning purposes, a budget of \$50 per space per year is recommended.
- Preventative maintenance. These activities are intended to help extend the life of the structure and include activities such as expansion joint replacement, repair of leaks, traffic coatings, and other activities. These maintenance activities are independent of garage type and age. These activities typically are recommended as a result of a structural assessment, and for budgeting purposes, occur approximately every three years. For planning purposes, a budget of \$75 per parking space per year is recommended. This budget will not be spent every year, but should be incorporated into the operating expense projections of a parking system in order to set parking rates and fees at an appropriate level.
- Repair and restoration. These maintenance activities represent major activities to repair or replace major components of the garage. This includes repairs to the concrete structure, replacement elevators, replacement of lighting fixtures, and other activities. The costs of these maintenance activities depend significantly on the age and construction type of the garage (For example, a pre-cast garage requires sealant replacement every five to seven years). Varying repair and restoration costs ranging from \$75 - \$175 per space per year were developed for each of the Durham parking garages. These repair and restoration costs were developed based on the age of the garage, a review of recent repairs and a general knowledge of the structures. These budgetary numbers will not be spent every year, but should be incorporated into projections of a parking system in order to set parking rates and fees at an appropriate level.

An estimate of the annual maintenance expense for each garage was developed by multiplying the per space budgetary numbers for each category described by the number of parking spaces in each garage. A 2% annual inflation rate was used to project expenses in future years. It was assumed that the parking garage maintenance expenses would align with the introduction of paid on-street parking, such that a revenue source is introduced concurrently with this expense.

Table 11.5 projects the estimated future maintenance expenses for each of the categories above for each garage in the prescribed projection years. Refer to Appendix C for a detailed breakdown of estimated future garage maintenance expenses for each year in the 10-year projection window.

Table 11.5 – Projected Garage Maintenance Expense

	Budget	Projections			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Parking Garage Maintenance	\$299,000¹	-	\$962,000	\$811,000	\$201,000
Durham Centre	-	-	\$205,000	\$39,000	\$43,000
Routine Maintenance	-	-	\$37,000	\$39,000	\$43,000
Preventative Maintenance	-	-	\$168,000	-	-
Repair and Restoration	-	-	-	-	-
Corcoran Street	-	-	\$159,000	\$660,000	\$33,000
Routine Maintenance	-	-	\$29,000	\$30,000	\$33,000
Preventative Maintenance	-	-	\$130,000	-	-
Repair and Restoration	-	-	-	\$630,000	-
Chapel Hill Street	-	-	\$103,000	\$19,000	\$22,000
Routine Maintenance	-	-	\$19,000	\$19,000	\$22,000
Preventative Maintenance	-	-	\$84,000	-	-
Repair and Restoration	-	-	-	-	-
Church Street	-	-	\$117,000	\$22,000	\$24,000
Routine Maintenance	-	-	\$21,000	\$22,000	\$24,000
Preventative Maintenance	-	-	\$96,000	-	-
Repair and Restoration	-	-	-	-	-
North Deck	-	-	\$378,000	\$71,000	\$79,000
Routine Maintenance	-	-	\$69,000	\$71,000	\$79,000
Preventative Maintenance	-	-	\$309,000	-	-
Repair and Restoration	-	-	-	-	-
Future Debt Service	-	-	\$139,000	\$139,000	\$139,000
Church Street Repair (Phase 2) ²	-	-	\$139,000	\$139,000	\$139,000
Total	\$299,000	-	\$1,101,000	\$950,000	\$340,000

¹ Past parking garage maintenance expense from previous section

² Church Street Repair assumes \$1,250,000 of repair work to be performed, financed over 10 years at a 2% interest rate

A structural assessment should be performed every 5 – 10 years on each garage that identifies the recommended repair and restoration activities. The City of Durham, Department of General Services presently has a project underway to assess all City structures and develop a long range plan to repair and restore these facilities, which include parking garages. That study will include a more detailed review and analysis of the garages and those expense projections should be used to refine the estimated future maintenance expenses.

In addition to maintenance of off-street garages, there is a need for the City to maintain their off-street surface lots as well. Typically, the cost to maintain and repair surface lots is less than that of structured parking. For this exercise, it was assumed that maintenance and repair of the City-owned surface lots would be spread over a five year window; ie, one-fifth of the City-owned lots would be seal coated and restriped every five years. A budget amount of \$100 per space was utilized to estimate the total cost per year to seal coat and restripe one-fifth of the surface lot spaces. This was then escalated by 2% annually. Table 11.6 shows the estimated costs for maintaining and repairing off-street spaces. Similarly to garage maintenance, this expense is projected to begin in 2015/2016.

Table 11.6 – Projected Surface Lot Maintenance Expense

	Budget	Projections			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Surface Lot Maintenance	-	-	\$15,000	\$16,000	\$18,000

Potential Future Garage

In addition to operating expenses for existing parking facilities, projected expenses for a potential future parking garage also were estimated. This projection assumes a 500 space garage that would open for use beginning in 2016/2017. The assumed operating expense associated with this potential future garage was based on the average total operating expense cost per space for existing off-street facilities (\$350/space/year), and then escalated at an annual rate of 2%. In addition to the on-going operating costs, maintenance costs for the facility must also be considered. Since this facility is new construction the maintenance and improvement costs, including equipment, is estimated to be \$100 per space per year beginning in 2016/2017, with a 2% annual increase thereafter. For the purposes of this projection debt service payments were assumed based on a 500 space garage constructed for \$20,000 per space (accounting for hard and soft costs), equating to a total construction cost estimate of \$10,000,000. With an assumed 20 year payback period and a 5% interest rate, the annual debt service commitment is estimated to be approximately \$800,000 per year. The projected annual expense for a potential new City-owned garage is shown in Table 11.7.

Table 11.7 – Potential Future Garage Expense

	Budget	Projections			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Potential Future Garage Expense	-	-	-	\$1,032,000	\$1,055,000
Operations Expense ¹	-	-	-	\$179,000	\$197,000
Annual Maintenance Expense ²	-	-	-	\$51,000	\$56,000
Debt Service ³	-	-	-	\$802,000	\$802,000

¹ Operations Expense assumes \$350 per space for annual operating expenses, increased 2% annually.

Operations expense per space based on operations expense of existing City-owned garage facilities

² Annual Maintenance Expense assumes \$100 per parking spaces per year for facility maintenance and repair

³ Debt Service assumes a \$10,000,000 project cost, financed over 20 years at a 5% interest rate.

Paid On-Street Parking

Implementation of a paid on-street parking program brings additional revenue to a parking system, but also comes with additional operating expenses, primarily related to administration of revenues, maintenance of equipment, and increased enforcement activity. The following table outlines projected annual operating expenses for the paid on-street parking program, which is anticipated to be operational in January 2015. Installation of the paid on-street parking equipment is estimated to be \$10,000 per pay station, financed over five years at a 2% interest rate beginning in 2014/2015. Following installation, it is assumed that each pay station will require approximately \$400 of operating and maintenance expense per year, based on similar programs in other cities. Considering the installed equipment would be under warranty for the first year, it is assumed that this expense will start in 2015/2016 and increase by 2% annually. Finally, the implementation of a paid on-street parking program results in increased operating expenses as enforcement and management measures specific to this program will likely require additional staff. It was estimated that existing on-street operating expense would increase by 25% to account for the impact of a paid on-street parking program and would begin during the installation year 2014/2015. Table 11.8 outlines the estimated expenses associated with the paid on-street program.

Table 11.8 – Paid On-Street Parking Expense

	Budget	Projections			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Paid On-Street Parking Expense	-	\$338,000	\$388,000	\$394,000	\$153,000
Estimated Debt Service Payment ¹	-	\$255,000	\$255,000	\$255,000	-
Annual Maintenance Expense ²	-		\$48,000	\$50,000	\$55,000
Additional Operating Expense ³	-	\$84,000	\$86,000	\$89,000	\$98,000

¹ Estimated Debt Service Payment assumes 120 pay stations at \$10,000 per pay station, financed over 5 year at a 2% interest rate.

² Annual Maintenance Expense assumes \$400 per pay station beginning in the installation year, increased by 2% annually

³ Additional Operating Expense assumes a 25% increase in existing on-street operating expense, increased by 2% annually

Total Projected Expense

Table 11.9 summarizes the projected expenses associated with the assumptions previously described related to on-street and off-street operating expenses, parking garage maintenance, as well as potential future parking garage and paid on-street parking program impacts.

Table 11.9 – Projected Future Expenses

	Budget		Projections		
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Off-Street Operating Expenses	\$2,399,000	\$2,334,000	\$3,352,000	\$3,286,000	\$2,908,000
Operating Expenses	\$1,249,000	\$1,274,000	\$1,299,000	\$1,352,000	\$1,492,000
Indirect Cost	\$454,000	\$454,000	\$454,000	\$454,000	\$454,000
North Deck Operating Expenses	\$336,000	\$346,000	\$357,000	\$378,000	\$439,000
Special Event Labor	\$59,000	\$60,000	\$61,000	\$63,000	\$70,000
Parking Study	\$2,000	-	-	-	-
Increased Security	-	\$200,000	\$204,000	\$212,000	\$234,000
Parking Garage Maintenance Cost	\$299,000	-	\$962,000	\$811,000	\$201,000
Surface Lot Maintenance Cost	-	-	\$15,000	\$16,000	\$18,000
On-Street Operating Expense¹	\$329,000	\$335,000	\$342,000	\$356,000	\$393,000
Off-Street Debt Service	\$1,999,000	\$1,929,000	\$2,006,000	\$1,875,000	\$1,590,000
North Deck Debt Service	\$1,077,000	\$1,030,000	\$988,000	\$897,000	\$666,000
Other General Obligation Debt Service	\$922,000	\$899,000	\$879,000	\$839,000	\$785,000
Church Street Repair (Phase 2)	-	-	\$139,000	\$139,000	\$139,000
Potential Future Garage Expense	-	-	-	\$1,032,000	\$1,055,000
Operations Expense	-	-	-	\$179,000	\$197,000
Annual Maintenance Cost	-	-	-	\$51,000	\$56,000
Debt Service	-	-	-	\$802,000	\$802,000
Paid On-Street Parking Expense	-	\$339,000	\$389,000	\$394,000	\$153,000
Estimated Debt Service Payment	-	\$255,000	\$255,000	\$255,000	-
Annual Maintenance Expense	-	-	\$48,000	\$50,000	\$55,000
Additional Operating Expense	-	\$84,000	\$86,000	\$89,000	\$98,000
Total	\$4,727,000	\$4,937,000	\$6,089,000	\$6,943,000	\$6,099,000

¹ On-Street Operating Expense captures current Operator enforcement costs

Projection of Future Revenues

Future revenues for the parking system were projected including off-street garage and surface lot parking, parking fines and citations, potential future garage and paid on-street parking, as well as other recommendations outlined within this document. Future revenue projections and recommendations were made with the goal of providing a balanced Parking Enterprise Fund within the next 10 years while maintaining and implementing fundamentally strong parking practices. Assumptions made regarding revenues are a result of knowledge and understanding of similar systems in other locations, as well as collaboration with City staff.

Existing Parking Garages

Parking garage revenue is derived from the following three sources:

- Monthly Revenue – This is the total revenue collected from users who lease spaces in the parking garages on a monthly basis.
- Transient Revenue – This is the total revenue collected from users of the garages that pay on an hourly or daily maximum basis.
- Special Event Revenue – This is the total revenue collected from those that use the garage for special event parking. These events are typically held at the Convention Center, Carolina Theater, Durham Performing Arts Center, and/or Durham Bulls Athletic Park. Historically, Lanier Parking Solutions operated all special events for the City; however, as of April 2012 Blackwell Street Management Company began performing these services for the North Deck and the City will receive 35% of all event revenues at the North Deck.

Based on recommendations documented in this report, monthly permit rates are assumed to be increased by \$10.00 per month beginning in 2013/2014 to better align with peer cities and to begin the process toward creating a balanced Parking Enterprise Fund. The City currently has contractual obligations with the American Tobacco Campus ownership that dictate maximum monthly permit rates that can be charged to users of the North Deck. The recommended \$10.00 per month increase exceeds these maximums and as a result, the maximum rates outlined in the agreement between the City and American Tobacco was used. Also within the North Deck, the City has an agreement with Triangle Transit that provides them access to 150 spaces at a current rate of \$20.30 per month. The monthly rate for these spaces is contractually permitted to increase annually at a rate that is equal to the Consumer Price Index (CPI). The CPI increase for the 150 Triangle Transit spaces is assumed to be 2% annually and are projected in future revenues shown in Table 11.11.

As a result of increased development within the study area, it was assumed that monthly and hourly parking revenues should increase in a similar trend. Utilizing the Park+ parking demand model, existing occupancy levels in each City-owned parking facility were compared to projected occupancy levels in 2022/2023, assuming all development projects presented were developed. This comparison projects the existing garages (with the exception of Church Street) will be at or near capacity in 2022/2023. However, since the schedule of the development projects and their on-site parking supply is unknown, for revenue estimation purposes it was assumed that 50% of the projected future parking demand associated with development projects would be satisfied by the existing garages. The Park+ occupancy results, as well as the future occupancy and revenue increase assumptions as a result of the projected development in the study area are shown in Table 11.10.

Table 11.10 – Projected Revenue Increase from Downtown Development

Garage	Existing Occupancy	Projected 2022/2023 Occupancy	10-year Projected Increase in Parking Demand	Revised 2022/2023 Occupancy	Projected 10-year Revenue Increase	Equivalent Annual Revenue Increase
Durham Centre	29%	88%	203%	59%	102%	7.3%
Corcoran Street	65%	95%	46%	80%	23%	2.1% ¹
Chapel Hill Street	70%	95%	36%	83%	18%	1.7%
Church Street	21%	41%	95%	31%	48%	4.1%

¹ Represents hourly revenue increase only. Monthly revenue increase is front-loaded as a result of Sun Trust building hotel development commitment. Resulting monthly revenue increase is 1.5% annually.

Currently the issued monthly permits within the Corcoran Street garage are estimated to increase by 50 in 2013/2014 as a result of the agreements between the City and the Sun Trust building hotel development. Considering this increase in monthly permits in the Corcoran Street garage, the projected equivalent annual revenue increase shown in Table 11.10 of 2.1% was applied only to hourly revenue. The monthly revenue was reduced to an annual percentage increase of 1.5%, as the Sun Trust development impacts “front load” projected development increases in this facility.

Special event rates are currently \$2.00 per vehicle in City-owned garages, with the exception of the North Deck where special event parking is \$4.00 per vehicle. Beginning in 2013/2014, and included in the budget year financials, special event rates are assumed to increase by \$1.00 at each facility bringing rates to \$3.00 and \$5.00 per vehicle.

In addition to this monthly permit and special event rate increases, it was assumed that the overall hourly, monthly, and special event revenue generated from parking in future years would increase by 20% in 2017/2018 over the 2012/2013 value with an additional 20% in 2022/2023. These increases assume parking rates would be increased at approximately three to five year intervals; however, the exact increase and timing of implementation would need to reflect then current conditions. As previously mentioned, the City currently has an agreement with the American Tobacco Campus ownership that dictates maximum monthly permit rates that can be charged to users of the North Deck. The rates outlined in this agreement were used in the financial analysis, therefore the 20% revenue increases in 2017/2018 and 2022/2023 were not applied to the North Deck.

The Durham County Courthouse has recently relocated its operation from the Judicial Building adjacent to Lot 8 to the newly completed Justice Center south of the Downtown Loop. As a result, the City has begun to see an impact to revenue collected in the Church Street garage. It was assumed that hourly revenue generated from the Church Street garage would decrease by 50% during the time in which the Judicial Building is renovated and reopened for use in 2015/2016. At that time, hourly revenue in the Church Street garage is assumed to increase to the levels which were seen in 2012/2013.

Refer to Table 11.11 for the estimated future revenue associated with existing parking garages.

Table 11.11 – Projected Garage Revenue

	Budget	Projections			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Durham Centre Revenue	\$380,000	\$402,000	\$424,000	\$571,000	\$919,000
Monthly Revenue ¹	\$229,000	\$246,000	\$264,000	\$365,000	\$622,000
Hourly Revenue ²	\$62,000	\$67,000	\$71,000	\$99,000	\$168,000
Event Revenue ³	\$89,000	\$89,000	\$89,000	\$107,000	\$129,000
Corcoran Street Revenue	\$493,000	\$500,000	\$508,000	\$628,000	\$811,000
Monthly Revenue ¹	\$413,000	\$419,000	\$426,000	\$526,000	\$680,000
Hourly Revenue ²	\$55,000	\$56,000	\$57,000	\$72,000	\$95,000
Event Revenue ³	\$25,000	\$25,000	\$25,000	\$30,000	\$36,000
Chapel Hill Street Revenue	\$323,000	\$329,000	\$335,000	\$415,000	\$542,000
Monthly Revenue ¹	\$249,000	\$254,000	\$258,000	\$320,000	\$418,000
Hourly Revenue ²	\$74,000	\$75,000	\$77,000	\$95,000	\$124,000
Event Revenue ³	-	-	-	-	-
Church Street Revenue	\$229,000	\$237,000	\$331,000	\$430,000	\$626,000
Monthly Revenue ¹	\$137,000	\$142,000	\$148,000	\$193,000	\$283,000
Hourly Revenue ²	\$78,000	\$81,000	\$169,000	\$220,000	\$323,000
Event Revenue ³	\$14,000	\$14,000	\$14,000	\$17,000	\$20,000
North Deck Revenue	\$802,000	\$859,000	\$882,000	\$944,000	\$1,096,000
Monthly Revenue ⁴	\$728,000	\$785,000	\$808,000	\$856,000	\$990,000
Hourly Revenue	-	-	-	-	-
Event Revenue ³	\$74,000	\$74,000	\$74,000	\$88,000	\$106,000
Investment and Rental Income	\$2,000	\$2,000	\$2,000	\$3,000	\$3,000
Total	\$2,229,000	\$2,329,000	\$2,482,000	\$2,991,000	\$3,997,000

Table 11.11 – Projected Garage Revenue (continued – table footnotes)

- ¹ Monthly Revenue assumes a \$10.00 per month increase in permit rate in 2013/2014, then an increase of 20% in 2017/2018 with another 20% increase in 2022/2023. Monthly revenue also increases based on Equivalent Annual Revenue Increase shown in Table 11.9.
- ² Hourly Revenue increased by 20% in 2017/2018, then another 20% in 2022/2023. Hourly revenue also increases based on Equivalent Annual Revenue Increase shown in Table 11.9.
- ³ Event Revenue assumes a \$1.00 per vehicle increase in special event parking rate
- ⁴ North Deck Monthly revenue assumes the maximum permit rates as outlined in the City agreement with American Tobacco Campus ownership for 1,015 permit spaces and an annual permit increase equal to the Consumer Price Index (CPI) (2%) for 150 Triangle Transit permit spaces.

Surface Lots

Similar to existing parking garages, off-street surface lot revenue is assumed to increase as a result of a \$10.00 increase to existing permit rates, as well as an across the board revenue increase of 20% in 2017/2018 with another 20% increase in 2022/2023. The 20% assumed increases in revenue accounts for the recommended rate increase in all City-owned facilities over the next 10 years with the goal of creating a balanced Parking Enterprise Fund and is in addition to the recommended \$10 rate increase to monthly permits, which begins in 2013/2014. Existing facilities that are time restricted and do not collect revenue are not considered to generate revenue in this projection.

The Durham County Courthouse has recently relocated its operation from the Judicial Building adjacent to Lot 8 to the newly completed Justice Center south of the Downtown Loop. As a result, the City has begun to see an impact to revenue collected in Lot 8. It was assumed that revenue generated from Lot 8 would decrease by 50% during the time in which the Judicial Building is renovated and reopened for use in 2015/2016. At that time, revenue in Lot 8 is assumed to increase to the levels in which were seen in 2012/2013.

Refer to Table 11.12 for the estimated future revenue associated with off-street surface lots.

Table 11.12 – Projected Surface Lot Revenue

	Budget	Projections			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Off-Street Surface Lot Revenue	\$206,000	\$206,000	\$246,000	\$295,000	\$354,000
Monthly Revenue ¹	\$166,000	\$166,000	\$166,000	\$199,000	\$239,000
Hourly Revenue ²	\$40,000	\$40,000	\$80,000	\$96,000	\$115,000

¹ Monthly Revenue assumes a \$10.00 per month increase in permit rate in 2013/2014, then an increase of 20% in 2017/2018 with another 20% increase in 2022/2023

² Hourly Revenue increased by 20% in 2017/2018, then another 20% in 2022/2023

Fines and Citations

The City experienced a near 20% decline in revenue from parking fines and citations in 2011/2012 over 2010/2011. In actuality, the 2010/2011 revenue was abnormally high as a result of a malfunction of citation issuance and uploading of registered owner files from the Department of Motor Vehicles. Due to this malfunction, there were several months late in 2009/2010 where citations were issued, but notification letters never made it to the violators. When the malfunction was repaired, thousands of letters were issued to

violators resulting in a larger than normal influx of revenue in 2010/2011. Nonetheless, a significant portion of revenues generated from the parking system are still borne from this source – \$300,000 in 2011/2012.

For projecting future potential revenue from parking fines and citations, it was assumed that the annual contribution from this line item would remain flat. Relying on an increase in fines and citations to balance a Parking Fund is not an approach that is desirable, as more emphasis should be placed on educating Downtown visitors through the Ambassador program, rather than requiring an increase in citation revenue.

Refer to Table 11.13 for the estimated future revenue associated with fines and citations.

Table 11.13 – Projected Fines and Citations Revenue

	Budget	Projections			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Fines and Citations	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000

Potential Future Garage

For planning purposes, revenues associated with a potential new City-owned parking garage were estimated and projected to similar horizon years. This exercise assumes a 500 space parking garage that would be open for use beginning in year 2016/2017. The assumed revenue for a potential future garage was equal to the average annual revenue per space for the Durham Centre, Corcoran Street, Chapel Hill Street, and Church Street garages in 2016/2017, which is approximately \$835. Similar to other City-owned facilities, revenues are assumed to increase by 20% in 2017/2018 and another 20% in 2022/2023. These increases assume parking rates would be increased at approximately three to five year intervals; however, the exact increase and timing of implementation would need to reflect then current conditions.

Refer to Table 11.14 for the estimated future revenue associated with a potential future parking garage.

Table 11.14 – Projected Future Parking Garage Revenue

	Budget	Projections			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Future Parking Garage Revenue¹	-	-	-	\$501,000	\$601,000

¹ Future Parking Garage Revenue assumes the average revenue per parking space for the Church Street, Corcoran Street, Chapel Hill Street, and Durham Centre garages in 2016/2017 with 20% revenue increases in 2017/2018 and 2022/2023

Paid On-Street Parking

Currently, the City of Durham does not charge a fee for use of on-street parking. This study ultimately recommends implementing a paid on-street program to encourage turnover of on-street parking spaces and generate revenue to support the parking system. The concept of a paid on-street parking program was discussed and approved by the PST, as well as a large majority of the stakeholders and public respondents of the online survey. Paid on-street parking is recommended to be implemented in the areas as shown in Figure 12.1 within the Recommendations section of this report beginning in 2014/2015. In general, paid on-street parking is recommended to be implemented within and adjacent to the Downtown Loop, the area surrounding the American Tobacco Campus and the Durham Performing Arts Center, West Village, and the southern portion of the Brightleaf District and represent an estimated 756 parking spaces within the study area.

Also discussed and recommended by the PST are the following characteristics of a paid on-street parking program:

- Hourly rate = \$1.25 / hour
- Hours of operation = 8:00am – 6:00 PM
- No operation during weekends and holidays, similar to the garages

To estimate revenue, it was estimated that each space would generate approximately \$1,000 per year. This was determined by assuming each space would be occupied approximately 33% of the time, 10 hours per day, 5 days per week, and 48 weeks per year, at a rate of \$1.25 per hour. It could be argued that the revenue for on-street parking should take into account enforcement revenue and the net impact to the system, meaning on-street parking revenue equals estimated on-street parking revenue minus on-street enforcement revenue. This concept was not utilized for this study, as enforcement revenues will still remain, even with a paid on-street program, as visitors utilizing paid on-street spaces will receive citations for expired parking, thus resulting in an enforcement revenue stream. It is assumed that with the capital expenditure for the paid on-street system will begin in 2014/2015, with actual system start up anticipated in January 2015. As a result, only one half of a year of revenue from paid on-street parking is assumed in 2014/2015. In addition, to maintain consistency with the other components of the parking system, on-street paid parking revenue is estimated to increase by 20% in 2017/2018 with another 20% increase in 2022/2023. These increases assume parking rates would be increased at approximately three to five year intervals; however, the exact increase and timing of implementation would need to reflect then current conditions.

Refer to Table 11.15 for the estimated future revenue associated with a paid on-street parking program.

Table 11.15 – Projected Paid On-Street Parking Revenue

	Budget	Projections			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Paid On-Street Parking Revenue¹	-	\$378,000²	\$756,000	\$907,000	\$1,089,000

¹ Paid On-Street Parking Revenue assumes \$1,000 of revenue per space for 756 on-street spaces within the study area. Revenues are increased by 20% in 2017/2018 with another 20% increase in 2022/2023.

² Given the likely time required to implement the paid on-street parking system, only one half of a year of revenue is assumed in 2014/2015.

Total Projected Revenue

Table 11.16 summarizes the projected revenue associated with off-street garage and surface lot parking, parking fines and citations, potential future garage and paid on-street parking, as well as other recommendations outlined within this document.

Table 11.16 – Projected Future Revenues

	<i>Budget</i>	<i>Projections</i>			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Durham Centre Revenue	\$380,000	\$402,000	\$424,000	\$571,000	\$919,000
Monthly Revenue	\$229,000	\$246,000	\$264,000	\$365,000	\$622,000
Hourly Revenue	\$62,000	\$67,000	\$71,000	\$99,000	\$168,000
Event Revenue	\$89,000	\$89,000	\$89,000	\$107,000	\$129,000
Corcoran Street Revenue	\$493,000	\$500,000	\$508,000	\$628,000	\$811,000
Monthly Revenue	\$413,000	\$419,000	\$426,000	\$526,000	\$680,000
Hourly Revenue	\$55,000	\$56,000	\$57,000	\$72,000	\$95,000
Event Revenue	\$25,000	\$25,000	\$25,000	\$30,000	\$36,000
Chapel Hill Street Revenue	\$323,000	\$329,000	\$335,000	\$415,000	\$542,000
Monthly Revenue	\$249,000	\$254,000	\$258,000	\$320,000	\$418,000
Hourly Revenue	\$74,000	\$75,000	\$77,000	\$95,000	\$124,000
Event Revenue	-	-	-	-	-
Church Street Revenue	\$229,000	\$237,000	\$331,000	\$430,000	\$626,000
Monthly Revenue	\$137,000	\$142,000	\$148,000	\$193,000	\$283,000
Hourly Revenue	\$78,000	\$81,000	\$169,000	\$220,000	\$323,000
Event Revenue	\$14,000	\$14,000	\$14,000	\$17,000	\$20,000
North Deck Revenue	\$802,000	\$859,000	\$882,000	\$944,000	\$1,096,000
Monthly Revenue	\$728,000	\$785,000	\$808,000	\$856,000	\$990,000
Hourly Revenue	-	-	-	-	-
Event Revenue	\$74,000	\$74,000	\$74,000	\$88,000	\$106,000
Investment and Rental Income	\$2,000	\$2,000	\$2,000	\$3,000	\$3,000

Table 11.16 – Projected Future Revenues (continued)

	<i>Budget</i>	<i>Projections</i>			
	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Off-Street Surface Lot Revenue	\$206,000	\$206,000	\$246,000	\$295,000	\$354,000
Monthly Revenue	\$166,000	\$166,000	\$166,000	\$199,000	\$239,000
Hourly Revenue	\$40,000	\$40,000	\$80,000	\$96,000	\$115,000
Fines and Citations	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Future Parking Garage Revenue	-	-	-	\$501,000	\$601,000
Paid On-Street Parking Revenue	-	\$378,000	\$756,000	\$907,000	\$1,089,000
Total	\$2,685,000	\$3,163,000	\$3,734,000	\$4,944,000	\$6,291,000

Summary of Projections

Table 11.17 provides a summary of past and projected expenses and revenues as outlined in this financial analysis. As evidenced in the summary of projections, a Parking Enterprise Fund is estimated to realize a surplus (\$192,000) in the year 2022/2023. The net deficit begins to decrease each year as the revenue from paid on-street parking takes effect, in addition to the two 20% increase in parking revenues shown in years 2017/2018 and 2022/2023; however, implementing appropriate maintenance activities in City-owned facilities negates a portion of the additional annual revenue to the system.

Table 11.17 – Summary of Financial Analysis

	Historical			Budget	Projections			
	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Existing Facilities/Services Expense	\$5,108,795	\$4,103,017	\$4,935,355	\$4,726,000	\$4,598,000	\$5,701,000	\$5,518,000	\$4,891,000
Off-Street Operating Expense	\$1,542,162	\$1,581,807	\$2,168,954	\$2,097,000	\$2,333,000	\$2,374,000	\$2,459,000	\$2,689,000
Off-Street Debt Service	\$3,257,593	\$2,203,173	\$2,060,299	\$1,999,000	\$1,929,000	\$2,007,000	\$1,875,000	\$1,591,000
Off-Street Maintenance	-	-	\$140,307	\$299,000	-	\$977,000	\$827,000	\$218,000
On-Street Operating Expense	\$309,040	\$318,037	\$337,965	\$329,000	\$335,000	\$342,000	\$356,000	\$393,000
Parking Study	-	-	\$227,830	\$2,000	-	-	-	-
Existing Facilities/Services Revenue	\$2,783,477	\$2,918,440	\$2,632,240	\$2,685,000	\$2,785,000	\$2,977,000	\$3,535,000	\$4,602,000
Garages	\$2,001,656	\$2,227,300	\$2,088,436	\$2,227,000	\$2,327,000	\$2,479,000	\$2,987,000	\$3,994,000
Surface Lots	\$410,648	\$389,032	\$288,807	\$206,000	\$206,000	\$246,000	\$295,000	\$354,000
Fines and Citations	\$367,669	\$300,305	\$253,705	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Investment and Rental Income	\$3,504	\$1,803	\$1,292	\$2,000	\$2,000	\$2,000	\$3,000	\$3,000
Existing Facilities/Services Net Surplus/Deficit	\$(2,325,318)	\$(1,184,577)	\$(2,303,115)	\$(2,041,000)	\$(1,813,000)	\$(2,723,000)	\$(1,983,000)	\$(289,000)
Paid On-Street Parking	-	-	-	-	\$40,000	\$368,000	\$514,000	\$935,000
Projected Expense	-	-	-	-	\$338,000	\$388,000	\$394,000	\$153,000
Projected Revenue	-	-	-	-	\$378,000	\$756,000	\$907,000	\$1,089,000

Table 11.17 – Summary of Financial Analysis (continued)

	<i>Historical</i>			<i>Budget</i>	<i>Projections</i>			
	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2017/2018	2022/2023
Potential Future Garage	-	-	-	-	-	-	\$(531,000)	\$(454,000)
Projected Expense	-	-	-	-	-	-	\$1,032,000	\$1,056,000
Projected Revenue	-	-	-	-	-	-	\$501,000	\$601,000
Grand Total System Property Tax Subsidy	\$(2,325,318)	\$(1,184,577)	\$(2,303,115)	\$(2,041,000)	\$(1,774,000)	\$(2,355,000)	\$(2,000,000)	\$192,000

12 | Recommendations

This section draws on the data and information presented in this report to develop a list of potential recommendations for the City of Durham Downtown parking system. The recommendations outlined in this section are generally consistent with the ideas expressed by the public and stakeholders during outreach efforts, the findings of the existing conditions review and parking demand analysis, operations and management assessment, existing wayfinding and parking guidance review, and the results of the financial analysis. The proposed recommendations are grouped based on whether they are improvements to the on-street, off-street, or the overall parking system. Finally, these recommendations are based on planning level analysis and should be investigated further before actual design and construction/implementation are started.

On-Street Parking System

Paid On-Street Parking

As a result of the public and stakeholder outreach, as well as the duration and turnover data that was collected, it became evident that time limits for on-street parking spaces in the Downtown study were being exceeded by visitors and downtown employees. The on-street parking system should be operated and enforced to encourage high turnover of vehicles, resulting in a lively and business friendly Downtown environment. Taking into account the feedback obtained as a result of the outreach process, paired with the assessment of available on-street parking technology and best practices, it is recommended that the City begin to implement a paid on-street parking program in 2014/2015, with the goal of the system being operational approximately January 2015.

Figure 12.1 shows the block-faces that are recommend for paid on-street parking implementation, which represents approximately 750 spaces within the Downtown study area. These block-faces were generally identified as those that exceeded 60% occupancy for at least two consecutive hours. In general, paid on-street parking is recommended to be implemented within and adjacent to the Downtown Loop, the area surrounding the American Tobacco Campus and the Durham Performing Arts Center, West Village, and the southern portion of the Brightleaf District.

The hourly rate for parking in City-owned off-street parking garages is currently at \$1.00 per hour and the recommended rate for on-street parking in the areas identified in Figure 12.1 is \$1.25 per hour. This relationship (higher rate for on-street, lower rate for off-street) encourages those with plans to stay in the area for longer periods of time to use the off-street facilities leaving the on-street spaces for those requiring shorter durations.

Recommendations associated with paid on-street parking locations and technology should be studied and reviewed in more detail to ensure that the appropriate equipment and configurations are obtained prior to implementation. In addition, a phased implementation could be considered, pending the staff availability of the City and the capabilities of the selected equipment manufacturer.

Time Restricted Parking

Time restricted parking was also reviewed as part of this study and was determined that some areas of current restrictions should be revised to complement the on-street parking system as a whole and surrounding land uses. It is important that any time limit that is in effect be actively and consistently enforced to ensure desired levels of turnover. Refer to Figure 12.2 for the recommended time restrictions for on-street parking in the Downtown study area. These time restrictions portray existing on-street time limits along with any time limits on block faces that are recommended for change.

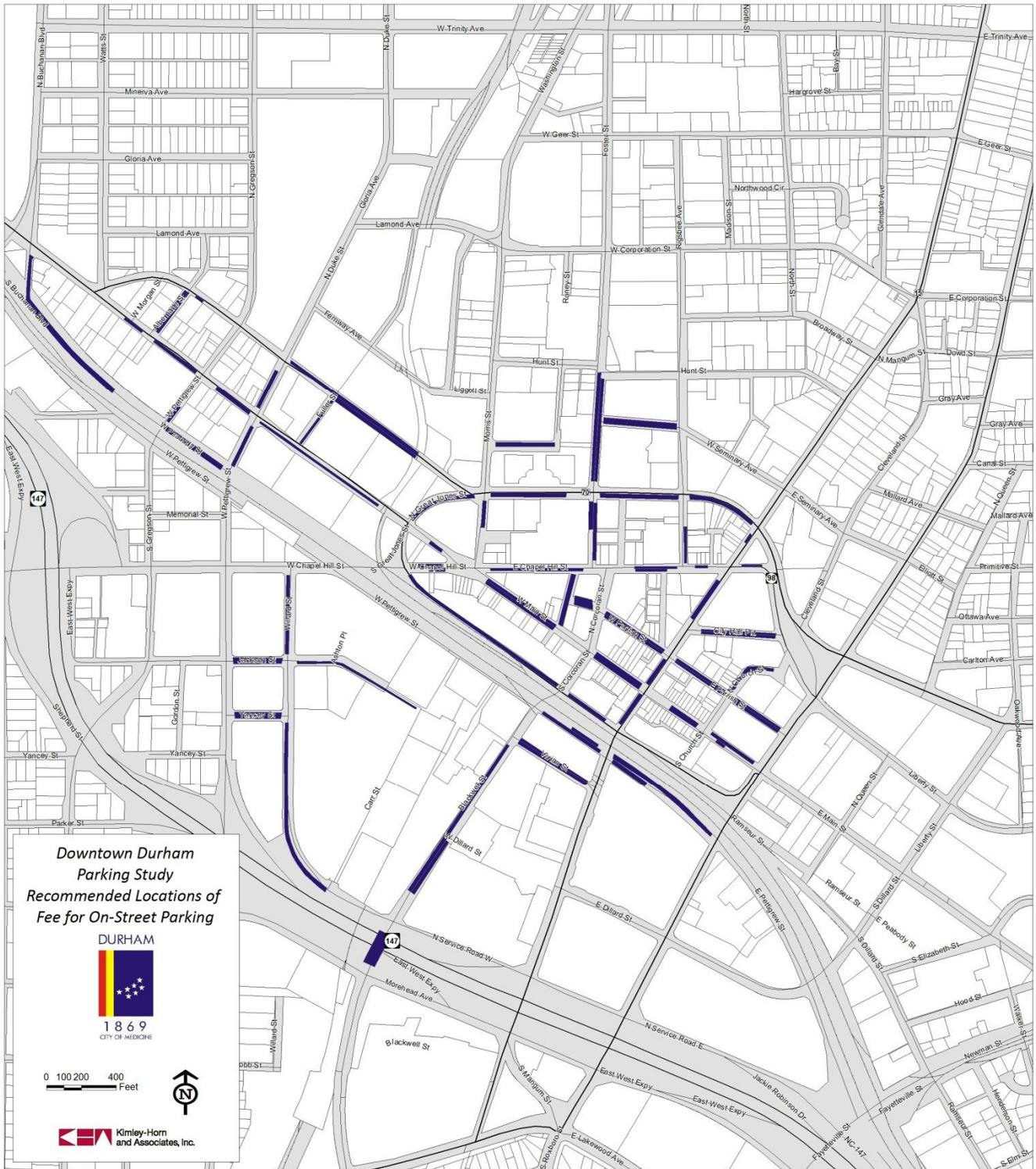


Figure 12.1 – Recommend Locations for Paid On-Street Parking

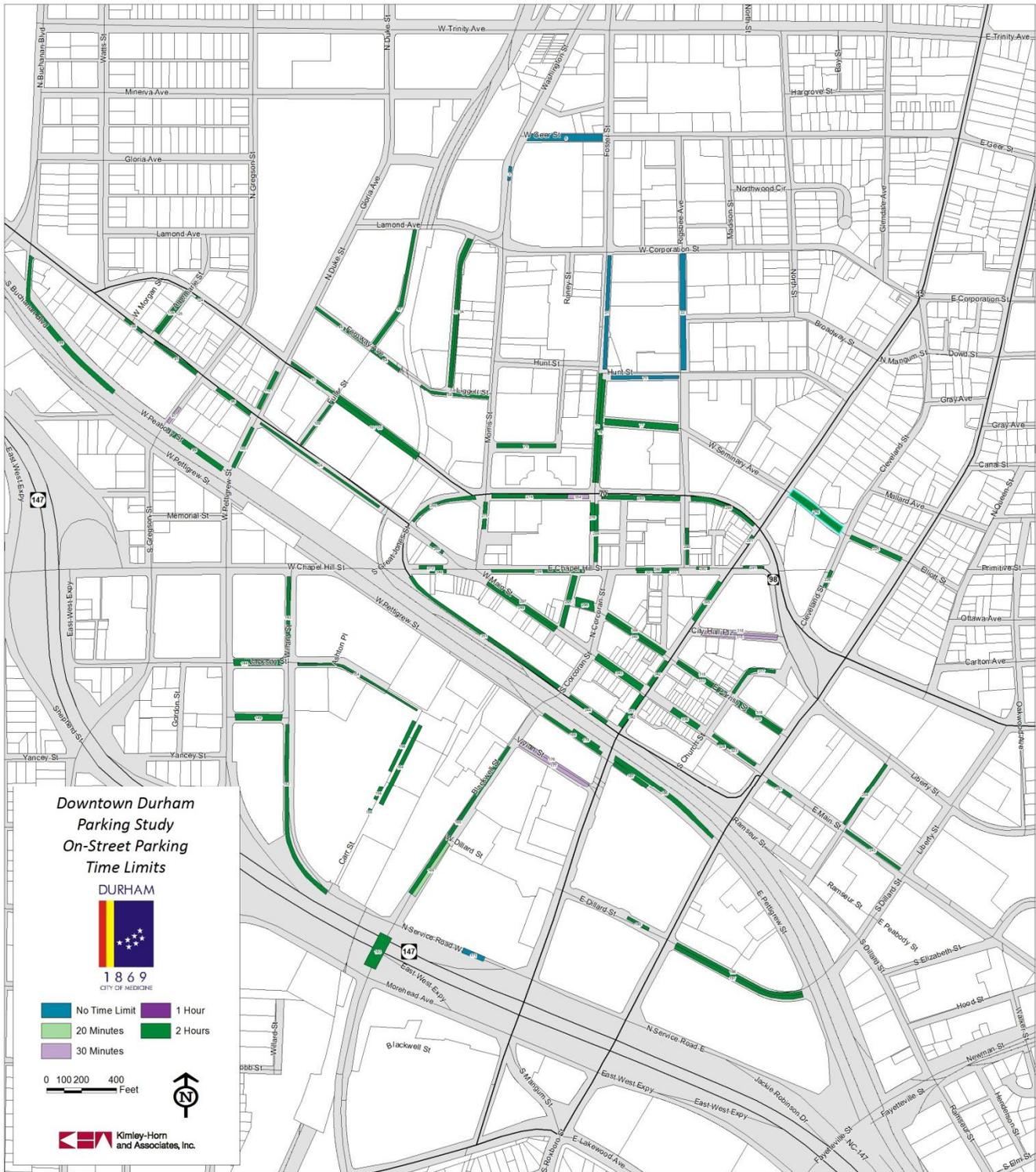


Figure 12.2 – Recommend Time Limit Restrictions for On-Street Parking

On-Street Parking Payment Technology

The available paid on-street parking technology was reviewed and assessed specific to the needs of the City of Durham and were discussed with the Parking Study Team. Options for on-street paid parking technology includes systems such as single space meters (with and without credit card payment options), pay stations including, pay-and-display and pay-by-space, pay-by-license plate, and pay-by-cell. Considering the cross section of users of the Downtown parking system varies widely between younger and older generations, it is recommended to implement a combination of payment technologies that appeal to the larger population.



The primary payment for on-street parking should be via pay-by-cell technology. This option requires a user to call or text a certain phone number when occupying a space and allows users to add time (up to the established time limit) to a virtual meter for that particular space. Mobile phone “apps” are also available for downtown to use with these virtual “parking meters”. This technology allows the flexibility of a user to add time to the meter without returning should they decide to extend their stay. Further, this technology allows for integration with smartphone applications that, with the proper infrastructure, could help direct Downtown visitors to available parking spaces, thus decreasing search times and street congestion.

Realizing that not every visitor to Downtown Durham is technically savvy enough or willing to utilize the pay-by-cell option, pay-by-space pay stations are recommended to be installed to supplement the paid on-street parking system. Pay-by-space allows the user to type their space number into the pay station without requiring the user to return to their vehicle. Once a user activates a certain amount of time within the pay station or through the pay-by-cell option, additional time can be added from any pay station or via cell phone up to the posted time restriction. This configuration provides the most flexibility for users as it makes payment easy and convenient.

The implementation of a fee for on-street parking, no matter what approach is used, requires active enforcement. Both the pay-and-display and pay-by-cell options offer tools to aid the enforcement personnel in their efforts. However, either system will require changes to the parking system management contract the City has with Lanier Parking Solutions and the City should be prepared to renegotiate this agreement.

Recommendations associated with paid on-street parking locations and technology should be studied and reviewed in more detail to ensure that the appropriate equipment and configurations are obtained prior to implementation and that ADA regulations are met. In addition, a phased implementation could be considered, pending the staff availability of the City and the capabilities of the selected equipment manufacturer.



On-Street Hours of Operation

Currently, on-street hours of operations are between the hours of 8:00 AM and 6:00 PM, whereas off-street is between the hours of 8:00 AM and 7:00 PM. It is recommended that the City maintain the hours of operation of on-street spaces of 8:00 AM to 6:00 PM, including when the paid on-street system is implemented.

North Carolina General Statute Update

North Carolina General Statutes states that “parking meters may be activated by coins or tokens”; however, the statute remains silent specific to the use of cash or credit cards. It is likely that “coins” is intended to be synonymous with “cash”, but the relationship with “credit cards” is not as straightforward within the policy. This study recommends implementation of a paid on-street parking system that utilizes technological advances for payment that rely on credit card use, either through the pay-by-call or pay station options.

Currently, many cities within North Carolina have already made the transition to credit card payment; however, a potential conflict still could remain with the language as stated in the General Statute. As a result, it is recommended that the City seek partnership with the North Carolina League of Municipalities, to update the North Carolina General Statute, specifically Section 160A-301 Parking, to reflect current parking industry practices and remove ambiguity.

North Carolina General Statute

§ 160A-301. Parking

(a) On-Street Parking. – A city may by ordinance regulate, restrict, and prohibit the parking of vehicles on the public streets, alleys, and bridges within the city. When parking is permitted for a specified period of time at a particular location, a city may install a parking meter at that location and require any person parking a vehicle therein to place the meter in operation for the entire time that the vehicle remains in that location, up to the maximum time allowed for parking there. Parking meters may be activated by coins or tokens. Proceeds from the use of parking meters on public streets must be used to defray the cost of enforcing and administering traffic and parking ordinances and regulations.

Curb-Lane Management

This study provides recommendation to converting existing time limit restricted on-street parking spaces to paid parking. As a result, the nature of on-street parking in the Downtown study area is likely to evolve through implementation of a paid on-street parking program. To ensure that the City is allocating, operating, and managing their Downtown on-street block-faces effectively, it is recommended that a curb-lane management study be performed. This type of study has proven to be very successful to other cities, such as the City of Charlotte, North Carolina, as it provides a plan for the most efficient allocation of parking along each block-face. Types of uses could include hourly parking spaces, commercial and vehicular loading zones, valet stands, taxi lanes, bus stops, and residential parking. In addition to properly allocating parking, the study should also aim to provide consistent, easily understood signage designs that communicate the assigned uses and restrictions along each block-face.

Construction Activity On-Street Parking Loss

Currently, it is fairly common for construction within the downtown area to result in dumpsters being placed in existing on-street parking spaces. When this occurs, the City loses potential revenue, as the space is taken out of service. The City should require contractors and others that block on-street spaces to pay what is equivalent to the maximum daily amount for a full day of hourly parking. This would equate to the recommended hourly rate of \$1.25 per hour over a 9 hour period, or \$11.25 per day. It is recommended that the City implement this fee immediately, rather than waiting for the paid on-street system to be implemented.

Off-Street Parking System

City and State Owned Vehicle

Currently, the top level of the Chapel Hill Street garage is isolated and reserved for the storage of City owned vehicles during evenings. During the day, the space is open to the public for parking though the gates and fences provide the appearance that parking is reserved for City vehicles only.

Considering that the Chapel Hill Street garage is in such high demand (refer to Table 12.1) due to its prime location within the Downtown Loop and adjacency to City Hall and the Post Office, it is recommended that the City relocate the City and State owned vehicles to a less utilized parking facility (potentially the Durham Centre garage).

Chapel Hill Street Parking Lot

The surface parking lot located immediately south of the Chapel Hill Street garage was observed to have high demand during the hours of data collection. This lot is in a prime location; however, during our data collection it was observed that some of the vehicles parked in the lot were there for the entire data collection period. It is recommended that this lot be managed in a manner to achieve higher turnover. To do this, it is recommended that the surface lot be restricted to hourly users only, with monthly users required to park inside the garage.

Table 12.1 –Parking Garage Peak Occupancy

Garage	Peak Occupancy
Chapel Hill Street	100%
Corcoran Street	66%
Church Street	61%
Durham Centre	25%

Lot 8 Hourly Rate

With the recent relocation of the Durham County Courthouse from the Judicial Building adjacent to Lot 8 to the new Justice Center Complex south of the Downtown Loop, the revenues generated from Lot 8 have declined drastically. Currently, Lot 8 is an hourly only surface lot with a rate of \$2.00 for the first hour, then \$1.00 for each additional hour up to a daily maximum of \$10.00. Considering the drastic decrease in hourly revenue generated from Lot 8, it is recommended that the City revise the rates in Lot 8 to be similar to hourly rates in other city-owned facilities – \$1.00 per hour with a daily maximum of \$8.00.

In addition, Lot 8 should be considered to be used for monthly permit parking as well, similar to Lot 14. The City should monitor its hourly parking demand and implement monthly parking if hourly use is down as a result of the County Courthouse relocation.

Monthly Permit Rate Increase

Existing parking rates in the City of Durham are of the lowest in the state based on the peer city review efforts as part of this study. It is recommended that the City increase monthly parking permit rates to a value that is more consistent with regional and peer cities. Considering the desire for the City of Durham to develop a self-funded Parking Enterprise Fund, it is recommended that the City increase monthly permit rates to be in line with local and regional peer cities to boost revenue and bring the system closer to financial stability.

Monthly permit rates for City-owned facilities are \$55.00 per month for a typical space and \$70.00 per month for a reserved space in any of the garages and \$45.00 for a monthly space in a surface lot. Regional peer cities monthly permit rates range from \$60.00 – 130.00 for parking garages and \$40.00 – 60.00 for surface lots. It is recommended that the City immediately implement a \$10.00 per month increase in all monthly permit rates,

including City-owned garages and surface lots. With a total of approximately 1,772 monthly permits currently issued in City-owned facilities, excluding North Deck, this would result in an increase in annual revenue of approximately \$212,000 in 2013/2014. The current contractual agreement with American Tobacco restricts the City from raising rates in the North Deck beyond those of which are outlined in the current agreement between these two entities. These maximum rates are lower than the recommended permit increases at other City owned facilities and as a result it is recommended that the City increase the rate in the North Deck annually to those maximum rates which are outlined in the agreement.

A tiered rate approach could be implemented where monthly permit rates are higher for those facilities that are in higher demand. However, it is our understanding the City desires to maintain a consistent rate between all similar type facilities, and as such an across the board \$10.00 increase to monthly permit rates beginning in 2013/2014 as described is recommended.

Special Event Rate Increase

Currently, special event parking is \$2.00 per vehicle at all City-owned garages with the exception of the North Deck where the rate is \$4.00 per vehicle. To more align Durham events with those of other cities, it is recommended for the City to increase all special event rates by \$1.00 to a total of \$3.00 and \$5.00 depending on the facility. The resulting increase in revenue is estimated to be approximately \$60,000 in 2013/2014.

Residential Permits

The City issues a residential permit to Downtown residents at a current rate of \$10 per month, which allows access to garages outside of normal operating hours. These permit holders assume that the monthly permit should allow access to City-owned facilities at any time of any day of the week. Several complaints from these permit holders have surfaced during public outreach efforts specifically related to the availability of parking in the garages during events when Downtown has its highest number of visitors. In actuality, there are likely Downtown residents that require access to City-owned garages to meet their parking needs.

To be mindful of Downtown residents and their needs, it is recommended that the City develop and advertise a new specific residential permit that provides a 24/7 reserved space. This permit option should provide 24/7 access to a reserved parking space in a parking facility closest to the permit holders place of residence. Considering a typical monthly permit only guarantees access into a City facility during typical weekday work hours and this reserved permit would provide 24/7 access, the monthly rate of the reserved residential permit should be higher than that of a typical monthly permit. It is recommended that the rate for a 24/7 reserved residential permit be \$90 per month.

In addition to the 24/7 reserved space permit, the City should maintain their residential permit that allows access outside of normal operating hours. To be consistent with other permits, this residential permit rate should be increased from \$10 to \$20 per month. The City should consider phasing out this permit at this cost and phasing in residential permit rates across the board that more closely align with current market rates.

It is important that the City take into account residential permit holders, particularly 24/7 reserved space permit, when providing event parking and typical visitor parking, especially on nights and weekends. An appropriate number of spaces equal to the number of 24/7 reserved residential permit holders must be made available and enforced appropriately at all hours of the day.

Long Term Leases

The City is currently obligated to provide 50 spaces in the Corcoran Street garage in a long-term lease agreement with hotel ownership. Considering the current financial deficit at which the Parking Fund operates, it is not

recommended that the City consider long term leases in the future. All monthly leases should be offered on a month-to-month basis, with no bulk or duration discount.

Parking Facility Assessments

As the City-owned infrastructure continues to age it is important that appropriate assessments and maintenance is performed to maximize the life of the facilities. This concept is important for parking garages, but is just as relevant for surface lots as well. The City has recently started a project to assess the long-term maintenance needs of all City-owned garages. The information resulting from that project will provide the City with useful information regarding long-term maintenance costs associated with parking garage improvements. As part of this study, it is recommended that the City also perform a similar assessment for City-owned surface lots. The assessments of the garages paired with the recommended assessment of surface lots will road map a 10 year budget plan for on-going maintenance and future repairs. With benchmark assessments such as this, the Parking Fund can more easily prepare for the inevitable recurring costs associated with facility maintenance. While a system wide assessment is underway for the City-owned garages, specific attention should be paid to the Chapel Hill Street garage, as it has many visible areas of deterioration.

As the City of Durham aims to have a self-funded parking program and implements increases in parking rates, it is important that the City avoids deferring maintenance, as those that pay to park in Downtown will expect well maintained facilities.

Future Garages

To meet future demand in the Downtown study area, the City should begin to plan for the potential need for future City-owned parking garages. Two sites for potential garages were identified within the Downtown Loop to meet the demand in the City Center, while another location is recommended in the Central Park District to support growth in the northern portion of the study area.

The two sites within the Downtown Loop are on existing City-owned property at the southwest and southeast corners of West Morgan Street and Rigsbee Avenue. Each of these sites were studied to determine the number of parking spaces that are attainable within the available space in the existing lots, as well as the potential to incorporate retail space within the structure. One conceptual layout for each site was developed and is included in Appendix B. In addition to these two sites within the Downtown Loop, conceptual plans have been developed by others for Lot 8 (located at Church Street and Parrish Street) as a potential parking development site.

A specific garage site in the Central Park area was not identified, as the location should be driven by the magnitude and mix of future development in the district. It is likely however, that a future garage with retail and possibly even residential units in this district is required to meet potential future demand.

Should existing City-owned parking be removed from the Downtown inventory, the parking demand model should be revisited to analyze the impact of that loss in parking. Potential scenarios where City-owned parking facilities could be removed from the Downtown inventory could include development opportunities on existing surface lot or garage parcels or large-scale garage repair/replacement efforts to remedy structural deterioration. For instance, the parcel within the Downtown Loop that contains the current Chapel Hill Street garage and surface lot is an attractive redevelopment site. Pairing this with the age and condition of the existing Chapel Hill Street garage, the City is considering selling the parcel for the parking garage to be demolished and redeveloped. Should this scenario unfold, it is recommended that the parking supply be replaced in one of the identified sites within the Downtown Loop prior to removing the existing supply from the inventory. In any event, the available parking inventory during each phase of implementation must be considered to ensure adequate parking supply for Downtown visitors, employees, and residents.

Public/Private Partnerships

While the need for the City to plan for and build standalone parking may be required, the City should put priority on building parking infrastructure within the study area through public/private partnerships. This approach maximizes land use within Downtown and minimizes City staffing requirements to plan, facilitate, and construct standalone parking facilities. It also better aligns parking inventory with demand, as additional City supply would be incorporated within the development.

There are two public/private partnership models that could be considered when planning and implementing public parking – City-owned and privately-owned. In the City-owned model (i.e. Asheville, N.C., Aloft Hotel at 51 Biltmore) the City and Developer would jointly contribute financially to fund the construction of the proposed parking garage. Prior to construction of the garage, the parties would agree how many spaces would be needed by the development and how many spaces are needed for public parking. The financial agreement between the City and Developer may be similar to a “condominium” agreement, where the Developer “owns” their parking spaces and they contribute to the ongoing garage maintenance expense. In the City-owned model, the City typically manages, or outsources, the management functions of the garage. However, to the public, the garage operates like other garages owned by the City.

In the privately-owned garage model, the Developer constructs, owns, and manages the parking garages, but agrees to build, and set aside, a number of parking spaces for public use. The City may contribute to the construction cost of the garage and may share in the parking revenues. Due to the construction costs of new parking garages, it is typical for new parking garages to receive some level of public subsidy.

The expense and revenue sharing options available to Cities and Developers are essentially unlimited and dependent upon the parties agreeing to terms that meet their needs. Before pursuing a Public Private Partnership, both parties should understand the needs and limitations of the other party.

A potential project that could fit into this public/private partnership approach that is currently in planning stages is the proposed Woolworth Site within the City Center. This project currently plans for enough parking to support a portion of the needs of the development; however, the City would benefit in many facets if they could partner with the developer to incorporate public parking into the project. In addition to the Woolworth site, a future garage located in the Central Park District could provide an opportunity for a public/private partnership.

Parking Access and Revenue Control Equipment

A review of existing City-owned parking access and revenue control equipment yields mixed results. Most of the parking equipment in City-owned facilities has been upgraded in recent years or is in the process of being upgraded. Part of these upgrades included the use of pay-in-lane technology, which could allow the City to pay upon exiting a facility without the need for an attendant. Considering these fairly recent upgrades, it is not recommended that the City invest resources into the replacement of equipment across all facilities in the near term. As part of this endeavor, the City should emphasize the use of machines able to accept both cash and credit cards, which should enable the collection of additional revenue during weekend and after-hours periods. The City should also put emphasis on machinery with the ability to maintain space counts for use in parking management decisions and potentially in parking wayfinding.

It is also recommended that the City continue to move down their current path of implementing a 24/7 gates down operation. Currently, the parking access control gates are raised at outside of normal operating hours and vehicles are able to enter and exit freely without the need to pull a ticket or pay for the duration of their stay. This method of operation results in the loss of revenue for those that pull a ticket prior to 7:00 PM, but exit, without paying, after 7:00 PM when the gates are up. To capture this loss of revenue, the City plans to operate facilities such that access gates are down 24 hours per day requiring users to pull a ticket no matter the time of

day or day of week they enter. However, upon exit, users will only be required to pay for the portion of time they used the facility during normal operating hours (8:00 AM – 7:00 PM, Monday – Friday).

First Hour Free

Following the implementation of a paid on-street parking program, the City should review on- and off-street user patterns and consider implementing a first hour free program in the off-street facilities, particularly garages. The intent behind a first hour free program in off-street facilities is to incentivize users of the on-street system to park off-street, thus freeing up prime on-street spaces and encouraging turnover where it is most critical.

Armory Surface Lot

The surface lot adjacent and to the south of the Historic Armory and across the street from the main entrance into the Convention Center is currently owned by the County, but managed and operated by the City of Durham. It is recommended that this lot be operated as a fee based lot with a pay station. No gates would be required, but a single pay station would be installed where users of the lot would be required to pay for their stay. This would require coordination between, and approval of, Durham County and the City of Durham.

Surface Lots within Paid On-Street Extents

There are many surface lots within the extents of where paid on-street parking is recommended. In these lots, the City should install pay stations that would require users to pay for time in which they occupy space within these public lots. Similar to the Armory surface lot recommendation, gates would not be required, rather a single pay station per lot would be installed that would provide a location for users to pay for their stay.

Overall Parking System

Improved Parking Management

Currently, parking is managed within the City of Durham through a combination of people and departments. It is recommended that the City either appoint or hire a single staff member as the Parking Manager to oversee all parking related issues from policy, planning and design, construction, maintenance, and management. The Parking Manager would coordinate parking projects and initiatives with other City departments and the business and residential community. The Parking Manager would also be responsible for maintaining and updating the parking inventory and utilization databases (Park+) prepared as part of this study.

Once a dedicated Parking Manager is in place, a larger staff should be developed around this individual to effectively meet the obligations and responsibilities of the parking unit. Recommending an exact staff size is difficult to estimate, as the nuances of each municipality differ. The City should continually examine the roles and responsibilities of the parking unit as the program continues to evolve and adjust staff as necessary.

Parking Enterprise Fund

As the parking program becomes more developed and sophisticated, including the implementation of paid on-street parking and off-street rate increases, it is recommended that the City fully implement a Parking Enterprise Fund. This policy would ensure that all net revenues collected from the parking system, including both on- and off-street parking, would be allocated to a specific fund that would be used to pay for public improvements in the area in which the revenues were collected. For instance, parking revenues obtained from paid parking in the Downtown study area could be used to provide improved street lighting, updated wayfinding, or parking garage

maintenance and repair items. Cities with Parking Enterprise Funds typically also use parking revenues to fund debt service and maintenance associated with new and existing parking facilities. This type of arrangement is typically well received by the public, as the rates they are paying for parking is being reallocated to improve their experience when visiting Downtown in the future. Future parking garage maintenance is projected in the financial analysis section of this document and was estimated to be \$250 per space per year, taking into account aesthetics and maintenance of the various systems including structural, mechanical, electrical, plumbing, and parking control equipment.

Improve Security

Based on results of the public and stakeholder outreach efforts, security in and around City-owned parking facilities is lacking, with specific concern at night. The main complaints were centered on lighting in main paths of travel between parking facilities and Downtown business and entertainment destinations. The City has recently improved lighting conditions in the Durham Centre, Corcoran Street, and Church Street garages as part of larger renovation projects. It is recommended that the City investigate upgrading lighting in their remaining parking facilities, including surface lots and the Chapel Hill Street garage.

Currently, security guards patrol the City-owned parking garages from 5:00 PM – 12:00 PM, seven days per week. The Durham Centre and Chapel Hill Street garages each have a dedicated security guard during this time and the Corcoran Street and Church Street garages share one security guard that patrols both facilities. Between the hours of 12:00 PM and 8:00 AM there are no security guards on duty; however, the police department patrols periodically. Considering the uncertainty that the public and stakeholders communicated regarding security in parking facilities and along public ways from these facilities, it is recommended that the City elevate security guard or ambassador presence at these locations, such that there is at least a patrol presence 24 hours per day.

Security cameras provide a sense of security, as it passively communicates that someone is watching users of a facility to keep them safe. In reality, that sense of security is perceived as higher than actuality since a majority of security systems in parking facilities are not monitored 24 hours per day. Specific to security cameras, it is recommended that the City Attorney and City Manager review the risks and benefits associated with the installation of security cameras in parking facilities prior to making a decision regarding installation. CCTV surveillance capabilities should be considered for installation at all garages.

Parking Wayfinding

The City's existing parking wayfinding attempts to direct parkers to available parking facilities. However, the signage lacks consistency and frequency to effectively guide visitors to parking destinations. In the past several years, the City performed a pedestrian level wayfinding program implementation providing signage with small font and graphics focused on directing those walking through Downtown. This program effectively uses color coding and district naming to delineate the several areas of Downtown. It is recommended that the City implement a signage system focused on vehicular movements throughout the study area utilizing larger signage, font, and graphics, as well as similar color coding and district delineation as used in the pedestrian signage.

In addition, the City should investigate technology based solutions to help parkers navigate the Downtown parking system, including implementing a parking guidance system that would indicate available spaces by parking garage on dynamic signage placed throughout the City. These signs would be located at key entrance points to the City, which are primary access points to Downtown. These signs would enhance driver navigation to available parking, reduce vehicular congestion on Downtown streets, and working with the City's updated wayfinding signage, should lead to much lower driver confusion and a more even utilization of the off-street

parking supply. This recommendation would require that the City's new revenue collection equipment be equipped with space counting capabilities, which would need to be coordinated with the signage system.

The above wayfinding recommendation should be implemented in a phased approach. Static wayfinding similar to existing pedestrian signage should be the primary focus of the City. Once this signage system is in place and appropriate parking access equipment has been upgraded at City-owned facilities, the City should then begin the process of incorporating City-wide parking guidance capabilities. Implementation of this technology could then be integrated with website and mobile applications that could allow Downtown visitors to visually see available parking on their computer or smartphone.

Parking Brand

Many cities including Raleigh, NC, Eugene, OR, and San Francisco, CA, have developed a specific brand for the experience of parking in their facilities that markets and communicates to the community the range and variety of parking and transportation service options, as well as the standard of quality service, facility up-keep, consistent equipment and features that can be found at their facilities. This focus on communication of services and standard of quality of facilities is typically branded by consistent signage in each City-owned facility. It is typical that branding a parking system will impact and elevate the quality of private facilities, providing an overall boost to the impression of parking, transportation, and safety in a community.

It is recommended that the City develop a brand for public parking in Durham. Once a brand is developed the associated logo and name should be consistently used on all City-owned facility identifying signage, as well as the City parking website. Consistent marketing and advertisement should improve the perception of parking in Downtown Durham.

Parking Ambassador Model

The City, with Downtown Durham, Inc. as a partner, should implement a parking ambassador model to parking enforcement in Durham. In general, the public perceives paid on-street parking as an unnecessary need for a City to collect revenue and issue citations. To combat this common perception, many communities have implemented an ambassador approach to enforcement. This typically equates to a staff of parking officers that patrol Durham offering visitors advice and answers regarding parking policies and limitations. In addition, parking ambassadors should be knowledgeable of the City and be available to those that seek direction to local businesses and venues. Generally, a parking ambassador model focuses on education of the public regarding the parking system, rather than stalking parked vehicles and issuing citations the minute a paid space expires. This approach goes a long way to provide a positive perception of parking in communities and considering the implementation of a paid on-street parking system, it is recommended that the City investigate this option of enforcement.

Parking Ambassadors could either be City employees or employees of Lanier Parking Solutions, who currently enforces on-street parking. Either approach would require a list of expectations and requirements of the ambassadors. For this reason, the City and Downtown Durham, Inc. should jointly be involved in the development of these requirements, as the result will impact the overall image of Durham.

Lanier Parking Solutions currently equips their enforcement officers with maps of Downtown such that they can assist the public; however, this characteristic as implemented should be revisited and expanded to be a focus of on-street enforcement presence.

Electric Vehicle Charging Stations

The City of Durham and Durham County have jointly developed a plan specifically related to the goal of providing electric vehicle charging stations in the *Durham City-County Electric Vehicle and Charging Station Plan* (December 2011). The plan outlines triggers and associated responses by the City and County for implementation of charging stations at several facilities throughout the study area. This study did not provide a comprehensive review of the City-County electric vehicle charging station plan, including the details associated with implementation; however, some recommendations are provided.

The implementation of electric vehicle charging stations should be driven on a demand bases, rather than installing equipment with the hopes that they will be used. The City should provide a means for the public to communicate this desire by providing a link on their website with directions on how to do so. When electric vehicle charging stations are installed, it is recommended that the following concepts remain at the forefront when finalizing policy and limitations associated with use of these spaces:

- Users of an electrical vehicle charging station space should be required to pay for the use of the space in a manner that is consistent with the facility in which it is located.
- Electric vehicle charging station spaces should be reserved for electric vehicle use only. Use of this space by non-electric vehicles should be cited.
- Use of an electric vehicle charging station space should be time restricted, to minimize the situation of one vehicle occupying the space for an entire day. The time limit should be determined on a case by case basis and be based on the charging duration requirements of the equipment being installed.

Periodic Parking Rate Increases

This study recommends a paid on-street parking program with hourly rates of \$1.25 per hour. The desired relationship between parking rates is for on-street spaces to be higher than that of off-street spaces, encouraging the use of parking garages and surface lots. Considering current hourly rates within City garages is \$1.00 per hour, this ideal relationship is achieved and as such, an increase to garage hourly rates is not recommended at this time.

It is recommended that the City increase hourly, monthly permit, and special event parking rates by 20% in 2017/2018 with an additional 20% increase in 2022/2023 to maintain consistency with inflation and the growth of the parking system and parking department. These increases assume parking rates would be increased at approximately five year intervals; however, the exact increase and timing of implementation would need to be based on actual revenues and reflect then current conditions. The City should continue to investigate rate increases every few years to maintain a healthy parking system budget, allowing appropriate maintenance of facilities and their surroundings. This recommended rate increase is in addition to the \$10.00 monthly permit rate increase previously described. In addition, this recommendation does not apply to the North Deck, as maximum monthly permit rates are dictated by current contractual agreements between the City and American Tobacco Campus ownership, as well as Triangle Transit. The City should increase monthly permit rates in the North Deck by the maximum allowed per those agreements.

Motorcycle Parking

Currently, the City has minimal, if any, dedicated spaces for motorcycle parking. In an effort to minimize the situation where a single motorcycle occupies an entire space sized for a typical vehicle, rather than several motorcycle, it is recommended that the City consider locating motorcycle parking in on- and off-street facilities

in a manner that minimizes the impact to the existing parking supply (e.g., using “dead corners” or other area that are not accessible by typical vehicles).

APPENDICES

Appendix A:

CITY OF DURHAM MUNICIPAL CODE EXCERPTS

Listed below are excerpts from the City of Durham Municipal Code, specific to parking related ordinances found in Chapter 66, Articles IV and VI. Particular articles of interest, as documented on the City of Durham website, are listed below.

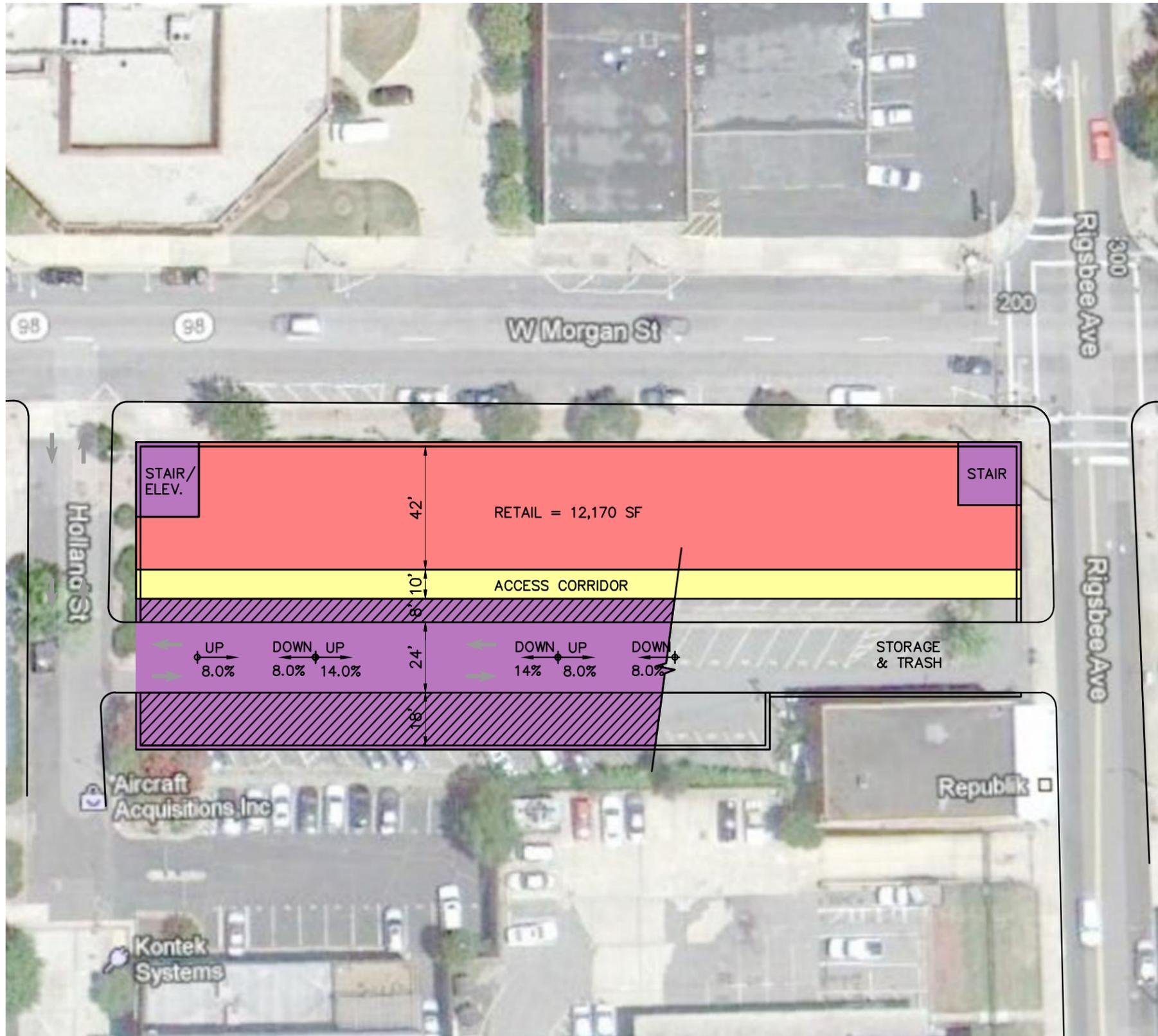
- **Article IV, Division I, Section 20-95.** This section discusses general parking. “No person shall stand or park a vehicle in a roadway other than parallel with the edge of the roadway headed in the direction of traffic and with the curbside wheels of the vehicle within 12” of the edge of the roadway, and with such vehicle entirely within the lines marking the space, except that upon those streets which have been marked or signed for angle parking vehicles...”
- **Article IV, Division I, Section 20-104.** This section prohibits parking on sidewalks; “It shall be unlawful for any person to stop, stand, or park any vehicle upon any sidewalk of the city.”
- **Article IV, Division I, Section 20-105.** This section prohibits parking in a particular city block for a cumulative time to exceed the posted limit. This means that someone parking for 30 minutes in the morning, who returns to the same block for an additional 45 minutes in the afternoon, where there is a one hour limit, can be issued a parking citation.
- **Article IV, Division I, Section 20-109.** This section defines the use of loading zones as follows: “...the parking of vehicles is restricted to parking for the purpose of loading or unloading passengers or property shall be construed to apply only during the period in which the operation of loading and unloading is being engaged in and such provision of this chapter or other ordinance of the city shall not be construed so as to authorize the parking of vehicles in such area for any other purpose or duration of time.”
- **Article IV, Division I, Section 20-160 & 161.** These sections deal with bus and taxi provisions of the ordinances. 160: “The driver of a bus or taxicab shall not stand or park upon any street in any business district at any place other than at a bus stop or taxicab stand, respectively, except that this provision shall not prevent the driver of any such vehicle from temporarily stopping, in accordance with other stopping or parking regulations, at any place for the purpose of and while actually engaged in the loading or unloading of passengers.” 161: “No person shall stop, stand, or park a vehicle other than a bus in a bus stand or other than a taxicab in a taxicab stand, when any such stop or stand has been officially designated and appropriately signed, except that the driver of a passenger vehicle may temporarily stop therein, for the purpose of and while actually engaged in loading or unloading passengers, when such stopping does not interfere with any bus or taxicab waiting to enter or about to enter or already within such zone.”



Appendix B:

PARKING GARAGE CONCEPTS

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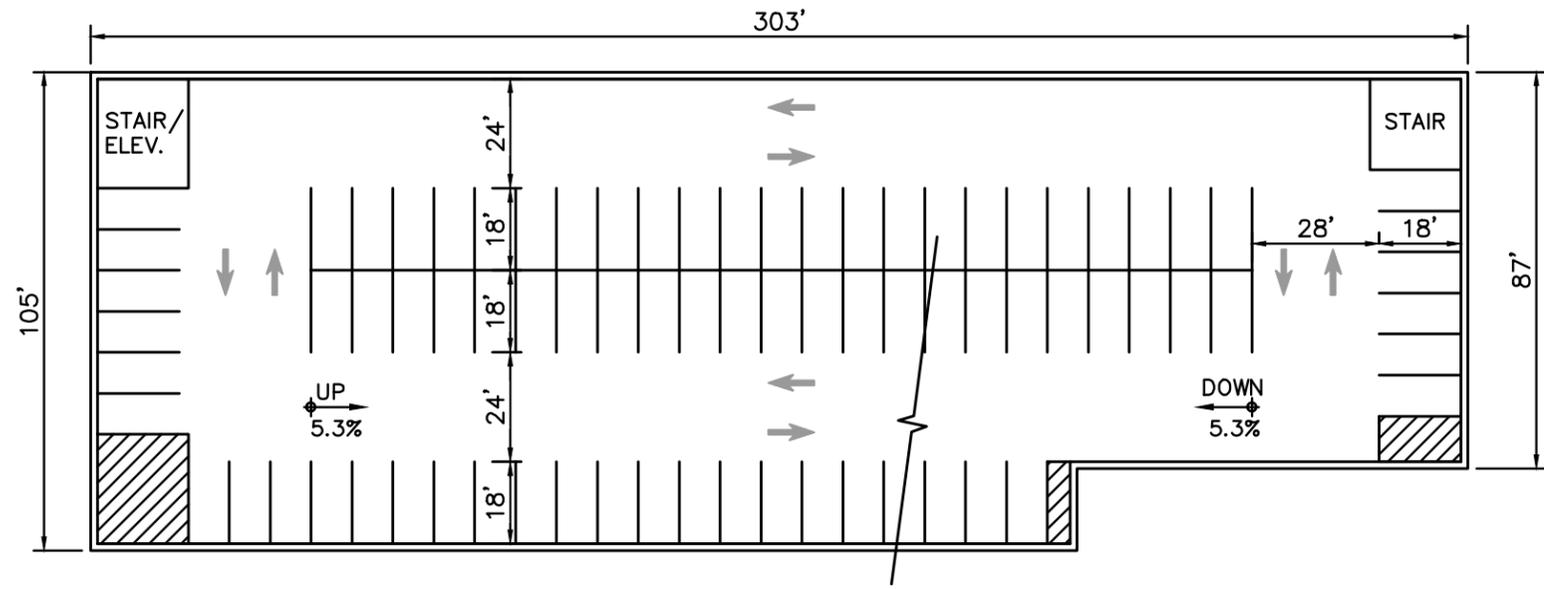


GROUND LEVEL

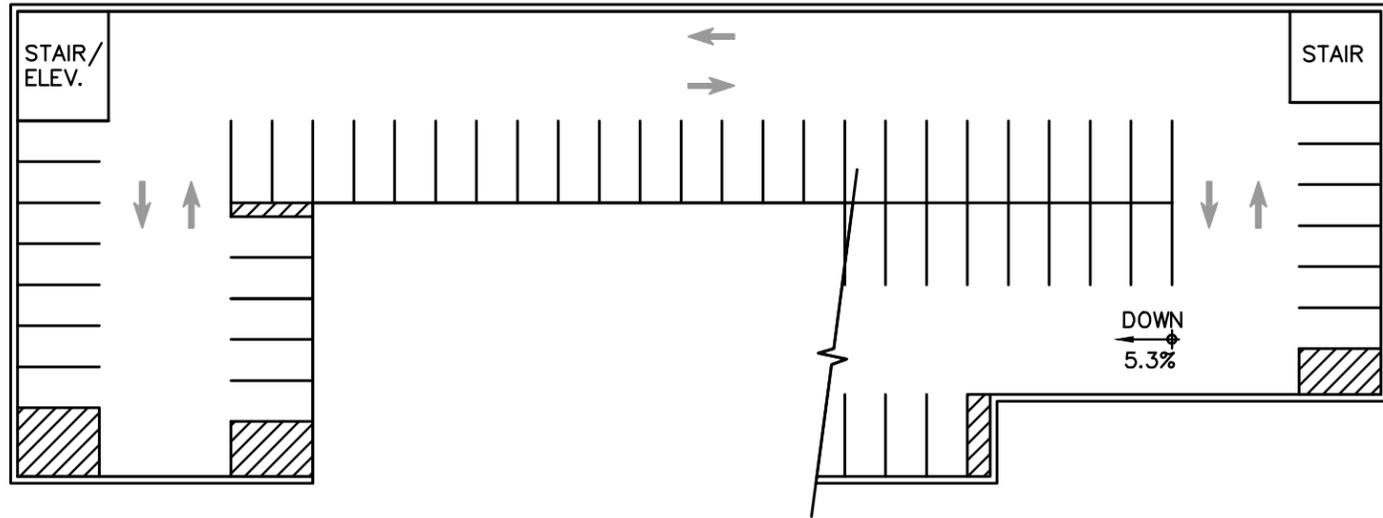
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GROUND	0	10334	0
2	79	30701	18
3	79	30701	29
4	79	30701	40
5	79	30701	51
6	79	30701	62
7	53	23211	73
TOTAL	453	187050	

PARKING EFFICIENCY = 413 SF/SPACE
(EXCLUDES RETAIL AND ACCESS CORRIDOR SF)

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TYPICAL LEVEL



ROOF

SWC OF WEST MORGAN STREET AND RIGSBEE AVENUE

COMPREHENSIVE PARKING STUDY

DURHAM, NORTH CAROLINA

SCALE (H): 1"=20'

SCALE (V):

DRAWN BY:

DESIGN BY:

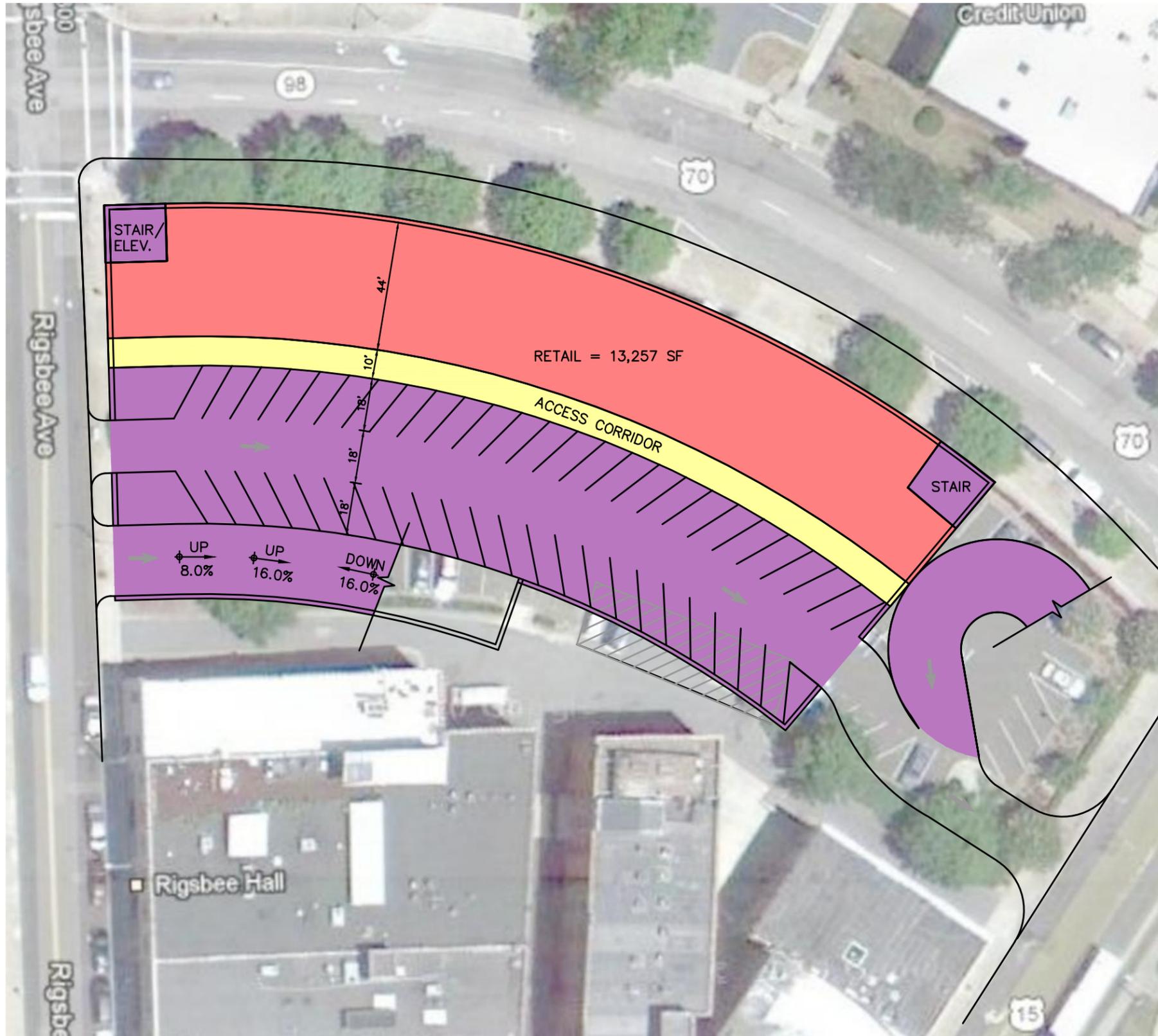
CHECK BY:

DATE: 1/29/2013

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Raleigh, North Carolina 27601 (919) 835-1494

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GROUND LEVEL

LEVEL	# SPACES	AREA (SF)	ELEVATION (FT)
GROUND	47	20122	0
2	92	40073	18
3	92	40073	29
4	92	40073	40
5	92	40073	51
6	93	35253	62
TOTAL	508	215667	

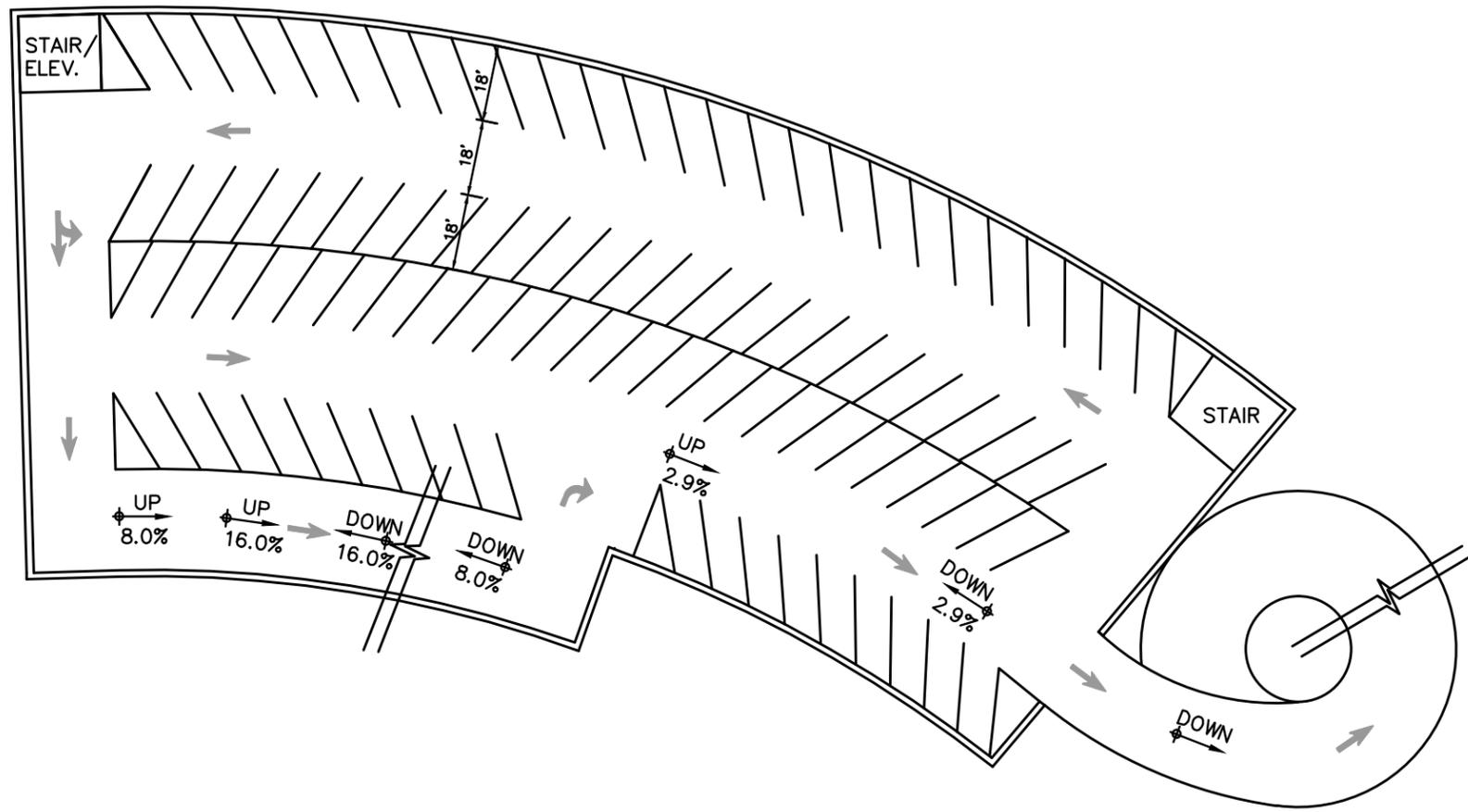
PARKING EFFICIENCY = 425 SF/SPACE
(EXCLUDES RETAIL AND ACCESS CORRIDOR SF)

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SEC OF WEST MORGAN STREET AND RIGSBEE AVENUE
COMPREHENSIVE PARKING STUDY
DURHAM, NORTH CAROLINA

SCALE (H): 1"=20'
SCALE (V):
DRAWN BY:
DESIGN BY:
CHECK BY:
DATE: 1/29/2013

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2ND LEVEL

SWC OF WEST MORGAN STREET AND RIGSBEE AVENUE

COMPREHENSIVE PARKING STUDY

DURHAM, NORTH CAROLINA

SCALE (H): 1"=20'

SCALE (V):

DRAWN BY:

DESIGN BY:

CHECK BY:

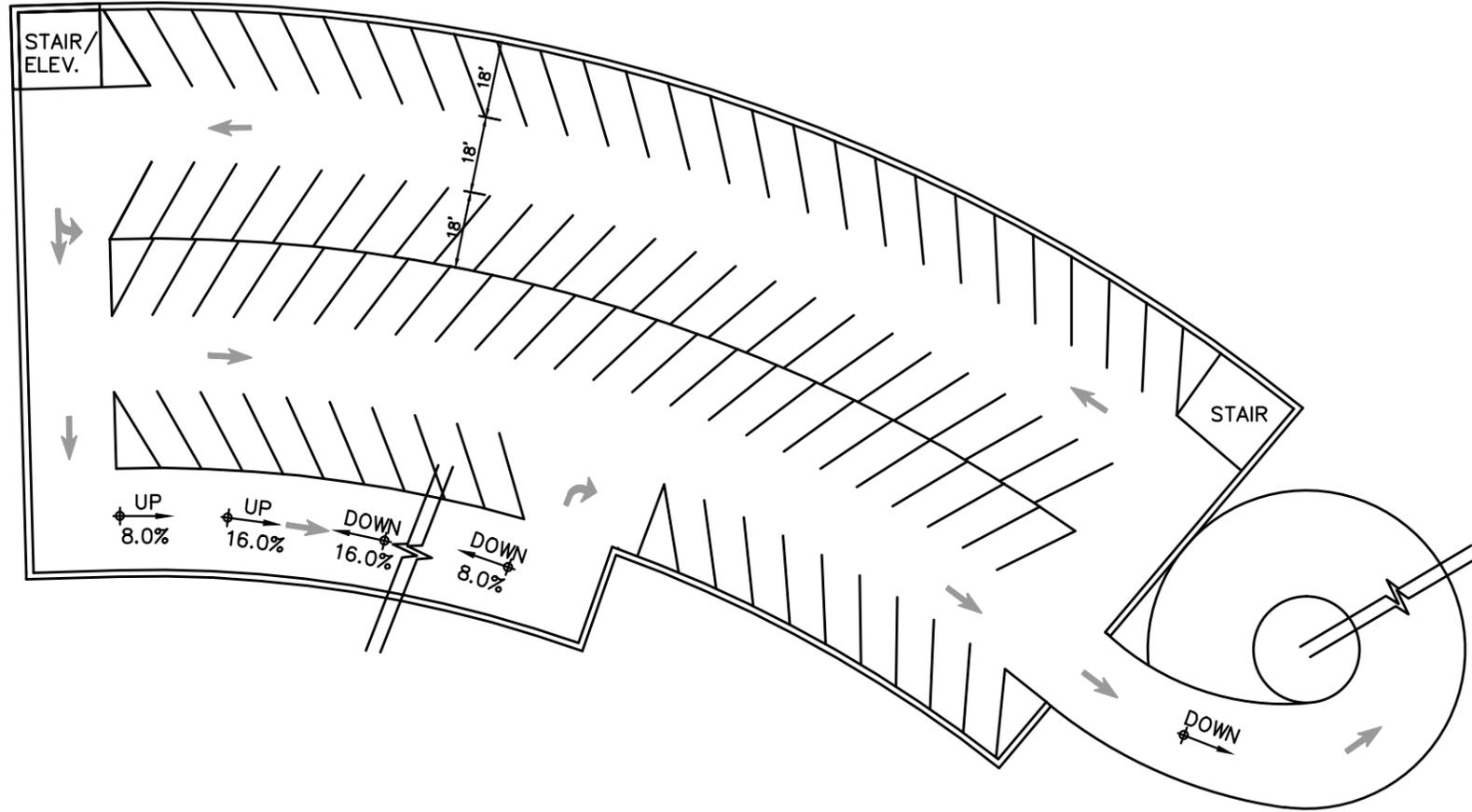
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TYPICAL LEVEL

SWC OF WEST MORGAN STREET AND RIGSBEE AVENUE

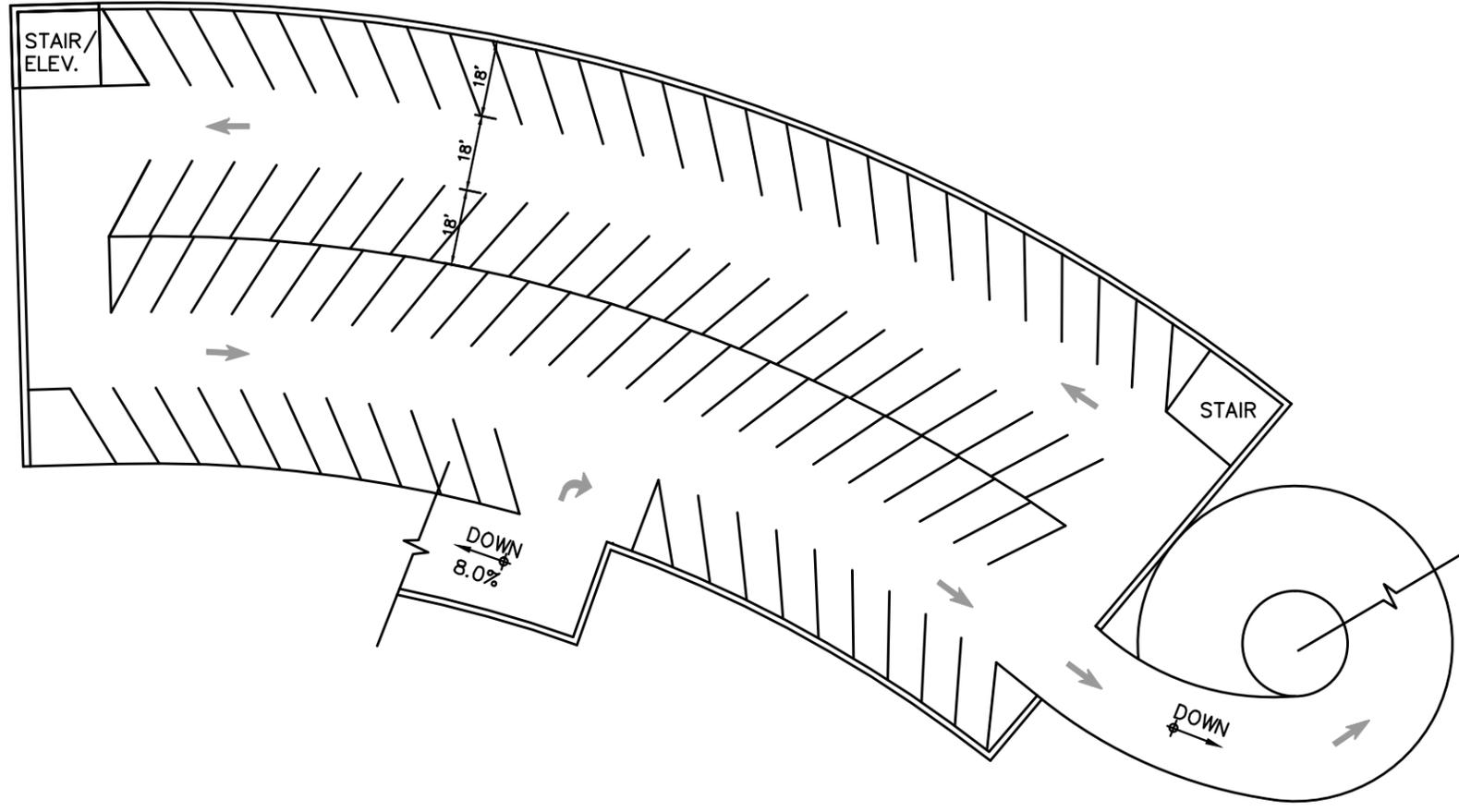
COMPREHENSIVE PARKING STUDY

DURHAM, NORTH CAROLINA

SCALE (H): 1"=20'
SCALE (V):
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DESIGN BY:
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DATE: 1/29/2013

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ROOF

SWC OF WEST MORGAN STREET AND RIGSBEE AVENUE

COMPREHENSIVE PARKING STUDY

DURHAM, NORTH CAROLINA

SCALE (H): 1"=20'
SCALE (V):
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DATE: 1/29/2013



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Appendix C:

10-YEAR FINANCIAL ANALYSIS DETAIL

City of Durham Comprehensive Parking Study

Financial Analysis and Summary of Revenue and Expense

	Historical			Budget	2-year Projection	3-year Projection	5-year Projection			10-year Projection			
	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023
Existing Facilities/Services Expense													
Off-Street Operating Expense	\$ 1,542,162	\$ 1,581,807	\$ 2,168,954	\$ 2,097,123	\$ 2,333,349	\$ 2,374,400	\$ 2,416,376	\$ 2,459,299	\$ 2,503,190	\$ 2,548,072	\$ 2,593,969	\$ 2,640,905	\$ 2,688,902
Off-Street Debt Service	\$ 3,257,593	\$ 2,203,173	\$ 2,060,299	\$ 1,999,039	\$ 1,928,945	\$ 2,006,933	\$ 1,940,122	\$ 1,875,222	\$ 1,864,600	\$ 1,801,104	\$ 1,728,952	\$ 1,657,174	\$ 1,590,515
Off-Street Maintenance	\$ -	\$ -	\$ 140,307	\$ 299,248	\$ -	\$ 977,162	\$ 929,371	\$ 827,484	\$ 2,009,419	\$ 882,987	\$ 209,942	\$ 1,100,443	\$ 218,424
On-Street Operating Expense	\$ 309,040	\$ 318,037	\$ 337,965	\$ 328,835	\$ 335,412	\$ 342,120	\$ 348,962	\$ 355,942	\$ 363,060	\$ 370,322	\$ 377,728	\$ 385,283	\$ 392,988
Parking Study	\$ -	\$ -	\$ 227,830	\$ 1,777	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Expense	\$ 5,108,795	\$ 4,103,017	\$ 4,935,355	\$ 4,726,022	\$ 4,597,705	\$ 5,700,614	\$ 5,634,832	\$ 5,517,946	\$ 6,740,269	\$ 5,602,486	\$ 4,910,591	\$ 5,783,804	\$ 4,890,830
Existing Facilities/Services Revenue													
Garages	\$ 2,001,656	\$ 2,227,300	\$ 2,088,436	\$ 2,227,251	\$ 2,326,508	\$ 2,479,265	\$ 2,553,834	\$ 2,986,799	\$ 3,079,276	\$ 3,175,924	\$ 3,277,079	\$ 3,382,725	\$ 3,994,105
Surface Lot	\$ 410,648	\$ 389,032	\$ 288,807	\$ 205,955	\$ 205,955	\$ 245,955	\$ 245,955	\$ 295,146	\$ 295,146	\$ 295,146	\$ 295,146	\$ 295,146	\$ 354,175
Fines and Citations	\$ 367,669	\$ 300,305	\$ 253,705	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000
Investment and Rental Income	\$ 3,504	\$ 1,803	\$ 1,292	\$ 2,000	\$ 2,040	\$ 2,081	\$ 2,122	\$ 2,598	\$ 2,650	\$ 2,703	\$ 2,757	\$ 2,812	\$ 3,442
Total Revenue	\$ 2,783,477	\$ 2,918,440	\$ 2,632,240	\$ 2,685,206	\$ 2,784,503	\$ 2,977,301	\$ 3,051,911	\$ 3,534,543	\$ 3,627,072	\$ 3,723,773	\$ 3,824,981	\$ 3,930,683	\$ 4,601,722
Existing Facilities/Services Net Surplus/Deficit	\$ (2,325,318)	\$ (1,184,577)	\$ (2,303,115)	\$ (2,040,816)	\$ (1,813,203)	\$ (2,723,314)	\$ (2,582,920)	\$ (1,983,403)	\$ (3,113,197)	\$ (1,878,712)	\$ (1,085,610)	\$ (1,853,121)	\$ (289,108)
Paid On-Street Parking	\$ -	\$ -											
Projected Expense	\$ -	\$ -	\$ -	\$ -	\$ 338,443	\$ 388,120	\$ 390,791	\$ 393,515	\$ 396,293	\$ 144,537	\$ 147,428	\$ 150,376	\$ 153,384
Projected Revenue	\$ -	\$ -	\$ -	\$ -	\$ 378,000	\$ 756,000	\$ 756,000	\$ 907,200	\$ 907,200	\$ 907,200	\$ 907,200	\$ 907,200	\$ 1,088,640
Net Revenue/Expense	\$ -	\$ -	\$ -	\$ -	\$ 39,557	\$ 367,880	\$ 365,209	\$ 513,685	\$ 510,907	\$ 762,663	\$ 759,772	\$ 756,824	\$ 935,256
Potential Future Garage	\$ -	\$ -											
Projected Expense	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,027,426	\$ 1,031,926	\$ 1,036,516	\$ 1,041,198	\$ 1,045,973	\$ 1,050,844	\$ 1,055,812
Projected Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 417,636	\$ 501,163	\$ 501,163	\$ 501,163	\$ 501,163	\$ 501,163	\$ 601,395
Net Revenue/Expense	\$ -	\$ (609,790)	\$ (530,763)	\$ (535,353)	\$ (540,035)	\$ (544,810)	\$ (549,681)	\$ (454,417)					
Total Potential New Revenue/Expense	\$ -	\$ -	\$ -	\$ -	\$ 39,557	\$ 367,880	\$ (244,581)	\$ (17,078)	\$ (24,446)	\$ 222,628	\$ 214,962	\$ 207,142	\$ 480,839
Grand Total System Property Tax Subsidy	\$ (2,325,318)	\$ (1,184,577)	\$ (2,303,115)	\$ (2,040,816)	\$ (1,773,646)	\$ (2,355,434)	\$ (2,827,501)	\$ (2,000,481)	\$ (3,137,643)	\$ (1,656,085)	\$ (870,648)	\$ (1,645,979)	\$ 191,731

	Historical			Budget	3-year Projection			5-year Projection			10-year Projection			Comments
	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	
Off-Street Operating Expenses	\$ 1,542,162	\$ 1,581,807	\$ 2,537,091	\$ 2,398,148	\$ 2,333,349	\$ 3,351,562	\$ 3,345,748	\$ 3,286,783	\$ 4,512,608	\$ 3,431,060	\$ 2,803,911	\$ 3,741,348	\$ 2,907,326	
Operating Expenses	\$ 1,127,619	\$ 1,184,695	\$ 1,331,361	\$ 1,248,593	\$ 1,273,565	\$ 1,299,036	\$ 1,325,017	\$ 1,351,517	\$ 1,378,548	\$ 1,406,119	\$ 1,434,241	\$ 1,462,926	\$ 1,492,184	2% annual increase
Indirect Cost	\$ 16,750	\$ 16,750	\$ 453,881	\$ 453,881	\$ 453,881	\$ 453,881	\$ 453,881	\$ 453,881	\$ 453,881	\$ 453,881	\$ 453,881	\$ 453,881	\$ 453,881	provided by City
North Deck Operating Expenses	\$ 307,613	\$ 316,800	\$ 326,304	\$ 336,093	\$ 346,176	\$ 356,561	\$ 367,258	\$ 378,276	\$ 389,624	\$ 401,313	\$ 413,352	\$ 425,753	\$ 438,525	provided by City
Special Event Labor	\$ 90,180	\$ 63,562	\$ 57,408	\$ 58,556	\$ 59,727	\$ 60,922	\$ 62,140	\$ 63,383	\$ 64,651	\$ 65,944	\$ 67,263	\$ 68,608	\$ 69,980	2% annual increase
Parking Study	\$ -	\$ -	\$ 227,830	\$ 1,777	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Increased Security	\$ -	\$ -	\$ -	\$ -	\$ 200,000	\$ 204,000	\$ 208,080	\$ 212,242	\$ 216,486	\$ 220,816	\$ 225,232	\$ 229,737	\$ 234,332	2 additional FTE, infrastructure, maint., increased @ 2% per year
Surface Lot Maintenance	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,260	\$ 15,565	\$ 15,877	\$ 16,194	\$ 16,518	\$ 16,848	\$ 17,185	\$ 17,529	\$ 100 per space (resurface 1/5 of inventory every 5 years, 2% increase)
Parking Garage Equipment/Maintenance Cost	\$ -	\$ -	\$ 140,307	\$ 299,248	\$ -	\$ 961,902	\$ 913,806	\$ 811,608	\$ 1,993,225	\$ 866,469	\$ 193,094	\$ 1,083,258	\$ 200,895	see "Garage Maintenance Expense Projections" matrix
Off-Street Debt Service	\$ 3,257,593	\$ 2,203,173	\$ 2,060,299	\$ 1,999,039	\$ 1,928,945	\$ 2,006,933	\$ 1,940,122	\$ 1,875,222	\$ 1,864,600	\$ 1,801,104	\$ 1,728,952	\$ 1,657,174	\$ 1,590,515	
North Deck Debt Service	\$ 1,280,093	\$ 1,243,173	\$ 1,120,299	\$ 1,076,963	\$ 1,029,825	\$ 988,338	\$ 942,338	\$ 896,988	\$ 852,288	\$ 803,238	\$ 755,000	\$ 707,575	\$ 665,963	provided by City
Other General Obligation Parking Debt Service	\$ 980,000	\$ 960,000	\$ 940,000	\$ 922,076	\$ 899,120	\$ 879,437	\$ 858,626	\$ 839,076	\$ 813,154	\$ 788,709	\$ 764,394	\$ 740,441	\$ 716,995	provided by City
Old Debt Service - Last Payment	\$ 997,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Church Street Garage Repairs Future Debt Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 139,158	\$ 139,158	\$ 139,158	\$ 139,158	\$ 139,158	\$ 139,158	\$ 139,158	\$ 139,158	\$1.25M over 10 yrs @ 2% interest rate
Total Existing Off-Street Parking Expenses	\$ 4,799,755	\$ 3,784,980	\$ 4,597,390	\$ 4,397,187	\$ 4,262,294	\$ 5,358,494	\$ 5,285,869	\$ 5,162,005	\$ 6,377,208	\$ 5,232,164	\$ 4,532,863	\$ 5,398,522	\$ 4,497,842	
Off-Street Garage Revenue	\$ 2,001,656	\$ 2,227,300	\$ 2,088,436	\$ 2,227,251	\$ 2,326,508	\$ 2,479,265	\$ 2,553,834	\$ 2,986,799	\$ 3,079,276	\$ 3,175,924	\$ 3,277,079	\$ 3,382,725	\$ 3,994,105	
Monthly Revenue	\$ 1,472,810	\$ 1,638,210	\$ 1,578,834	\$ 1,756,751	\$ 1,845,871	\$ 1,903,457	\$ 1,963,378	\$ 2,259,821	\$ 2,332,964	\$ 2,409,325	\$ 2,489,182	\$ 2,572,464	\$ 2,993,601	
Hourly Revenue	\$ 342,348	\$ 385,392	\$ 339,393	\$ 269,000	\$ 279,137	\$ 374,308	\$ 388,956	\$ 485,178	\$ 504,512	\$ 524,800	\$ 546,097	\$ 568,461	\$ 710,344	
Event Revenue	\$ 186,498	\$ 203,698	\$ 170,208	\$ 201,500	\$ 201,500	\$ 201,500	\$ 201,500	\$ 241,800	\$ 241,800	\$ 241,800	\$ 241,800	\$ 241,800	\$ 290,160	
Durham Centre														
Total # of Spaces	719	719	719	719	719	719	719	719	719	719	719	719	719	
# of Monthly Permits Issued	229	229	280	403	403	403	403	403	403	403	403	403	403	
Monthly Revenue	\$ 177,788	\$ 197,091	\$ 189,699	\$ 229,175	\$ 245,905	\$ 263,856	\$ 283,117	\$ 364,542	\$ 391,153	\$ 419,708	\$ 450,346	\$ 483,222	\$ 622,196	7.3% "Downtown Development" revenue increase
Hourly Revenue	\$ 49,341	\$ 76,599	\$ 74,281	\$ 62,000	\$ 66,526	\$ 71,382	\$ 76,593	\$ 98,622	\$ 105,821	\$ 113,546	\$ 121,835	\$ 130,729	\$ 168,326	7.3% "Downtown Development" revenue increase
Event Revenue	\$ 41,125	\$ 50,739	\$ 76,154	\$ 89,375	\$ 89,375	\$ 89,375	\$ 89,375	\$ 107,250	\$ 107,250	\$ 107,250	\$ 107,250	\$ 107,250	\$ 128,700	
Total Annual Revenue	\$ 268,254	\$ 324,429	\$ 340,134	\$ 380,550	\$ 401,806	\$ 424,613	\$ 449,086	\$ 570,413	\$ 604,224	\$ 640,503	\$ 679,431	\$ 721,200	\$ 919,222	
Annual Revenue per Space	\$ 373	\$ 451	\$ 473	\$ 529	\$ 559	\$ 591	\$ 625	\$ 793	\$ 840	\$ 891	\$ 945	\$ 1,003	\$ 1,278	
Corcoran Street														
Total # of Spaces	554	554	554	554	554	554	554	554	554	554	554	554	554	
# of Monthly Permits Issued	626	626	600	685	685	685	685	685	685	685	685	685	685	
Monthly Revenue	\$ 337,857	\$ 361,893	\$ 347,687	\$ 413,088	\$ 419,284	\$ 425,574	\$ 431,957	\$ 526,124	\$ 534,016	\$ 542,026	\$ 550,156	\$ 558,409	\$ 680,142	1.5% "Downtown Development" revenue increase***
Hourly Revenue	\$ 52,575	\$ 53,567	\$ 64,120	\$ 55,000	\$ 56,155	\$ 57,334	\$ 58,538	\$ 71,721	\$ 73,227	\$ 74,765	\$ 76,335	\$ 77,938	\$ 95,490	2.1% "Downtown Development" revenue increase
Event Revenue	\$ 14,113	\$ 20,729	\$ 20,627	\$ 24,750	\$ 24,750	\$ 24,750	\$ 24,750	\$ 29,700	\$ 29,700	\$ 29,700	\$ 29,700	\$ 29,700	\$ 35,640	
Total Annual Revenue	\$ 404,545	\$ 436,189	\$ 432,434	\$ 492,838	\$ 500,189	\$ 507,658	\$ 515,245	\$ 627,545	\$ 636,943	\$ 646,491	\$ 656,191	\$ 666,047	\$ 811,272	
Annual Revenue per Space	\$ 730	\$ 787	\$ 781	\$ 890	\$ 903	\$ 916	\$ 930	\$ 1,133	\$ 1,150	\$ 1,167	\$ 1,184	\$ 1,202	\$ 1,464	
Chapel Hill Street														
Total # of Spaces	360	360	360	360	360	360	360	360	360	360	360	360	360	
# of Monthly Permits Issued	365	365	365	435	435	435	435	435	435	435	435	435	435	
Monthly Revenue	\$ 212,772	\$ 190,259	\$ 212,981	\$ 249,450	\$ 253,691	\$ 258,003	\$ 262,389	\$ 320,220	\$ 325,664	\$ 331,200	\$ 336,831	\$ 342,557	\$ 418,056	1.7% "Downtown Development" revenue increase
Hourly Revenue	\$ 67,336	\$ 73,860	\$ 71,257	\$ 74,000	\$ 75,258	\$ 76,537	\$ 77,839	\$ 94,994	\$ 96,609	\$ 98,251	\$ 99,922	\$ 101,620	\$ 124,017	1.7% "Downtown Development" revenue increase
Event Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Annual Revenue	\$ 280,108	\$ 264,119	\$ 284,238	\$ 323,450	\$ 328,949	\$ 334,541	\$ 340,228	\$ 415,214	\$ 422,273	\$ 429,451	\$ 436,752	\$ 444,177	\$ 542,074	
Annual Revenue per Space	\$ 778	\$ 734	\$ 790	\$ 898	\$ 914	\$ 929	\$ 945	\$ 1,153	\$ 1,173	\$ 1,193	\$ 1,213	\$ 1,234	\$ 1,506	
Church Street														
Total # of Spaces	409	409	409	409	409	409	409	409	409	409	409	409	409	
# of Monthly Permits Issued	305	305	200	275	275	275	275	275	275	275	275	275	275	
Monthly Revenue	\$ 162,948	\$ 137,527	\$ 126,168	\$ 136,850	\$ 142,461	\$ 148,302	\$ 154,382	\$ 192,854	\$ 200,761	\$ 208,992	\$ 217,561	\$ 226,481	\$ 282,920	4.1% "Downtown Development" revenue increase
Hourly Revenue	\$ 173,096	\$ 181,366	\$ 129,736	\$ 78,000	\$ 81,198	\$ 169,054	\$ 175,985	\$ 219,841	\$ 228,855	\$ 238,238	\$ 248,005	\$ 258,174	\$ 322,510	4.1% "Downtown Development" revenue increase
Event Revenue	\$ 3,603	\$ 8,494	\$ 11,045	\$ 13,750	\$ 13,750	\$ 13,750	\$ 13,750	\$ 16,500	\$ 16,500	\$ 16,500	\$ 16,500	\$ 16,500	\$ 19,800	
Total Annual Revenue	\$ 339,647	\$ 327,387	\$ 266,949	\$ 228,600	\$ 237,409	\$ 331,106	\$ 344,118	\$ 429,195	\$ 446,116	\$ 463,730	\$ 482,066	\$ 501,155	\$ 625,230	
Annual Revenue per Space	\$ 830	\$ 800	\$ 653	\$ 559	\$ 580	\$ 810	\$ 841	\$ 1,049	\$ 1,091	\$ 1,134	\$ 1,179	\$ 1,225	\$ 1,529	
North Deck														
Total # of Spaces	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320	
# of Monthly Permits Issued	1005	1005	1005	1005	1005	1005	1005	1005	1005	1005	1005	1005	1005	
# of TTA Monthly Permits	150	150	150	150	150	150	150	150	150	150	150	150	150	
Monthly Revenue	\$ 581,445	\$ 751,440	\$ 702,300	\$ 728,188	\$ 784,530	\$ 807,722	\$ 831,532	\$ 856,082	\$ 881,370	\$ 907,399	\$ 934,288	\$ 961,796	\$ 990,287	2% estimated CPI annual rate increase for TTA spaces
Hourly Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Event Revenue	\$ 127,657	\$ 123,736	\$ 62,382	\$ 73,625	\$ 73,625	\$ 73,625	\$ 73,625	\$ 88,350	\$ 88,350	\$ 88,350	\$ 88,350	\$ 88,350	\$ 106,020	
Total Annual Revenue	\$ 709,102	\$ 875,176	\$ 764,682	\$ 801,813	\$ 858,155	\$ 881,347	\$ 905,157	\$ 944,432	\$ 969,720	\$ 995,749	\$ 1,022,638	\$ 1,050,146	\$ 1,096,307	
Annual Revenue per Space	\$ 537	\$ 663	\$ 579	\$ 607	\$ 650	\$ 668	\$ 686	\$ 715	\$ 735	\$ 754	\$ 775	\$ 796	\$ 831	
Off-Street Surface Lot Revenue	\$ 410,648	\$ 389,032	\$ 288,807	\$ 205,955	\$ 205,955	\$ 245,955	\$ 245,955	\$ 295,146	\$ 295,146	\$ 295,146	\$ 295,146	\$ 295,146	\$ 354,175	
Total # of Spaces														
(Lots 5, 8, 14, 20, 29, 37, 38, 40, Hotel @ Holland Mall, Manning Place)	763	763	763	763	763	763	763	763	763	763	763	763	763	
# of Monthly Permits Issued	327	327	327	327	327	327	327	327	327	327	327	327	327	
(Lots 5, 14, 20, 29, 40, Hotel @ Holland Mall)														
Monthly Revenue	\$ 174,648	\$ 151,956	\$ 146,228	\$ 165,955	\$ 165,955	\$ 165,955	\$ 165,955	\$ 199,146	\$ 199,146	\$ 199,146	\$ 199,146	\$ 199,146	\$ 238,975	
Hourly Revenue (Lot 8)	\$ 236,000	\$ 237,076	\$ 142,579	\$ 40,000	\$ 40,000	\$ 80,000	\$ 80,000	\$ 96,000	\$ 96,000	\$ 96,000	\$ 96,000	\$ 96,000	\$ 115,200	
Event Revenue	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Annual Revenue	\$ 410,648	\$ 389,032	\$ 288,807	\$ 205,955	\$ 205,955	\$ 245,955	\$ 245,955	\$ 295,146	\$ 295,146	\$ 295,146	\$ 295,1			

City of Durham Comprehensive Parking Study

Financial Analysis and Summary of Revenue and Expense

	Historical			Budget	3-year Projection			5-year Projection			10-year Projection			Comments
	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	
On-Street Operating Expense	\$ 309,040	\$ 318,037	\$ 337,965	\$ 328,835	\$ 335,412	\$ 342,120	\$ 348,962	\$ 355,942	\$ 363,060	\$ 370,322	\$ 377,728	\$ 385,283	\$ 392,988	
Operating Expenses	\$ 309,040	\$ 318,037	\$ 337,965	\$ 328,835	\$ 335,412	\$ 342,120	\$ 348,962	\$ 355,942	\$ 363,060	\$ 370,322	\$ 377,728	\$ 385,283	\$ 392,988	2% annual increase
Special Event Labor	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
On-Street Revenue	\$ 367,669	\$ 300,305	\$ 253,705	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	
Fines and Citations	\$ 367,669	\$ 300,305	\$ 253,705	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	\$ 250,000	no increase in citation revenue assumed
Total Existing On-Street Parking Net Surplus/Deficit	\$ 58,629	\$ (17,732)	\$ (84,260)	\$ (78,835)	\$ (85,412)	\$ (92,120)	\$ (98,962)	\$ (105,942)	\$ (113,060)	\$ (120,322)	\$ (127,728)	\$ (135,283)	\$ (142,988)	

ADDITIONAL ASSUMPTIONS

City of Durham Comprehensive Parking Study
Financial Analysis and Summary of Revenue and Expense

Potential Future Garage

	Historical			Budget	3-year Projection			5-year Projection			10-year Projection			Comments
	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	
Potential Future Garage Expense							\$ 1,027,426	\$ 1,031,926	\$ 1,036,516	\$ 1,041,198	\$ 1,045,973	\$ 1,050,844	\$ 1,055,812	
Number of Spaces							500	500	500	500	500	500	500	
Total Operations Expense							\$ 175,000	\$ 178,500	\$ 182,070	\$ 185,711	\$ 189,426	\$ 193,214	\$ 197,078	\$ 350 per space based on existing garages w/ 2% annual increase
Total Maintenance Expense							\$ 50,000	\$ 51,000	\$ 52,020	\$ 53,060	\$ 54,122	\$ 55,204	\$ 56,308	\$ 100 per space per year w/ 2% annual increase
Debt Service							\$ 802,426	\$ 802,426	\$ 802,426	\$ 802,426	\$ 802,426	\$ 802,426	\$ 802,426	see "Additional Assumptions" below
Potential Future Garage Revenue							\$ 417,636	\$ 501,163	\$ 501,163	\$ 501,163	\$ 501,163	\$ 501,163	\$ 601,395	
Number of Spaces							500	500	500	500	500	500	500	
Estimated Revenue per Space							\$ 835	\$ 1,002	\$ 1,002	\$ 1,002	\$ 1,002	\$ 1,002	\$ 1,203	based on Church, Corcoran, Chapel Hill, Centre w/ consistent increase in 2017/2018 and 2022/2023
Total Potential Future Garage Net Surplus/Deficit	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (609,790)	\$ (530,763)	\$ (535,353)	\$ (540,035)	\$ (544,810)	\$ (549,681)	\$ (454,417)	

ADDITIONAL ASSUMPTIONS	
Construction Cost per Space	\$ 20,000
Number of Spaces	500
Total Construction Cost	\$ 10,000,000
Payback Period	20 years
Interest Rate	5%
Estimated Debt Service Payment	\$802,426 per year

City of Durham Comprehensive Parking Study
Financial Analysis and Summary of Revenue and Expense

Paid On-Street Parking

	Historical			Budget	3-year Projection			5-year Projection			10-year Projection			Comments
	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	
Projected Paid On-Street Parking Expense	\$ -	\$ -	\$ -	\$ -	\$ 338,443	\$ 388,120	\$ 390,791	\$ 393,515	\$ 396,293	\$ 144,537	\$ 147,428	\$ 150,376	\$ 153,384	
# of Pay Stations					120	120	120	120	120	120	120	120	120	
Estimated Debt Service Payment					\$ 254,590	\$ 254,590	\$ 254,590	\$ 254,590	\$ 254,590					assumes \$10,000 per pay station, financed over 5 years @ 2% interest
Annual Maintenance Expense per Pay Station					\$ 400	\$ 408	\$ 416	\$ 424	\$ 433	\$ 442	\$ 450	\$ 459		2% annual increase
Total Annual Maintenance Expense					\$ 48,000	\$ 48,960	\$ 49,939	\$ 50,938	\$ 51,957	\$ 52,996	\$ 54,056	\$ 55,137		
Estimated Additional Operating Expense					\$ 83,853	\$ 85,530	\$ 87,241	\$ 88,985	\$ 90,765	\$ 92,580	\$ 94,432	\$ 96,321	\$ 98,247	25% of existing on-street operating expense for improved enforcement/additional staff
Projected Paid On-Street Parking Revenue	\$ -	\$ -	\$ -	\$ -	\$ 378,000	\$ 756,000	\$ 756,000	\$ 907,200	\$ 907,200	\$ 907,200	\$ 907,200	\$ 907,200	\$ 1,088,640	
# of Spaces					756	756	756	756	756	756	756	756	756	
Estimated Annual Revenue per Space					\$ 500	\$ 1,000	\$ 1,000	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,200	\$ 1,440	20% rate increase in 2017/2018 and 2022/2023
Total Potential Future Garage Net Surplus/Deficit	\$ -	\$ -	\$ -	\$ -	\$ 39,557	\$ 367,880	\$ 365,209	\$ 513,685	\$ 510,907	\$ 762,663	\$ 759,772	\$ 756,824	\$ 935,256	

ADDITIONAL ASSUMPTIONS	
Installation Cost	\$ 1,200,000
Payback Period	5 years
Interest Rate	2%
Estimated Debt Service Payment	\$254,590

City of Durham Comprehensive Parking Study

Garage Maintenance Expense Projections

Financial Analysis and Summary of Revenue and Expense

	2010/2011	Historical		Budget	3-year Projection			5-year Projection			10-year Projection		
		2011/2012	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023
Estimated Annual Maintenance Expense					\$ -	\$ 961,902	\$ 913,806	\$ 811,608	\$ 1,993,225	\$ 866,469	\$ 193,094	\$ 1,083,258	\$ 200,895
<i>Annual Inflation Rate 2%</i>													
Durham Centre													
Total # of Spaces	719												
Annual Routine Maintenance Budget/Space	\$ 50				\$ 37,402	\$ 38,150	\$ 38,913	\$ 39,692	\$ 40,486	\$ 41,295	\$ 42,121	\$ 42,964	\$ 42,964
Preventative Maintenance (~ every 3 years)/Space	\$ 75				\$ 168,311			\$ 178,613		\$ 189,545			
Repair and Restoration (~ every 7 years)/Space	\$ 175							\$ 972,447					
Total Annual expense Budget/space	\$ 300												
Corcoran Street													
Total # of Spaces	554												
Annual Routine Maintenance Budget/Space	\$ 50				\$ 28,819	\$ 29,395	\$ 29,983	\$ 30,583	\$ 31,195	\$ 31,819	\$ 32,455	\$ 33,104	\$ 33,104
Preventative Maintenance (~ every 3 years)/Space	\$ 75				\$ 129,686			\$ 137,624		\$ 146,047			
Repair and Restoration (~ every 7 years)/Space	\$ 150						\$ 629,651						
Total Annual expense Budget/space	\$ 275												
Chapel Hill Street													
Total # of Spaces	360												
Annual Routine Maintenance Budget/Space	\$ 50				\$ 18,727	\$ 19,102	\$ 19,484	\$ 19,873	\$ 20,271	\$ 20,676	\$ 21,090	\$ 21,512	\$ 21,512
Preventative Maintenance (~ every 3 years)/Space	\$ 75				\$ 84,272			\$ 89,431		\$ 94,904			
Repair and Restoration (~ every 7 years)/Space	\$ 125							\$ 354,741					
Total Annual expense Budget/space	\$ 250												
Church Street													
Total # of Spaces	409												
Annual Routine Maintenance Budget/Space	\$ 50				\$ 21,276	\$ 21,702	\$ 22,136	\$ 22,578	\$ 23,030	\$ 23,491	\$ 23,960	\$ 24,440	\$ 24,440
Preventative Maintenance (~ every 3 years)/Space	\$ 75				\$ 95,743			\$ 101,603		\$ 107,822			
Repair and Restoration (~ every 7 years)/Space	\$ 100							\$ 322,420					
Total Annual expense Budget/space	\$ 225												
North Deck													
Total # of Spaces	1320												
Annual Routine Maintenance Budget/Space	\$ 50				\$ 68,666	\$ 70,040	\$ 71,441	\$ 72,869	\$ 74,327	\$ 75,813	\$ 77,330	\$ 78,876	\$ 78,876
Preventative Maintenance (~ every 3 years)/Space	\$ 75				\$ 308,999			\$ 327,912		\$ 347,983			
Repair and Restoration (~ every 7 years)/Space	\$ 75						\$ 735,417						
Total Annual expense Budget/space	\$ 200												

Parking Garage Maintenance Assumptions	
- Annual Routine Maintenance - (e.g. cleaning, landscaping, sweeping, trash pick-up, etc.)	
- Preventative Maintenance - (e.g. joint repairs, leaks, traffic sealants, etc.)	
- Repair/Restoration - (e.g. elevator replacement, relamping, concrete repairs, etc.)	
- Durham Centre repair and restoration complete in 2010/2011	
- Church Street and Chapel Hill Street repair and restoration complete in 2013/2014	
- Corcoran Street repair and restoration complete in 2011/2012	