

PARKING POLICIES FOR RESURGING CITIES: AN ATLANTA CASE STUDY

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# PARKING POLICIES FOR RESURGING CITIES: AN ATLANTA CASE STUDY

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To my amazing wife Rosie.

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## SUMMARY

Parking policies lie at the intersection of land use and transportation. Although often overlooked by traditional planning and engineering methods, parking can serve as an amplifier for an area's success or failure. The impact of parking can be revealed through a critical look at the history of parking and its role in decentralizing the urban core. The incorporation of parking into zoning regulations, and a commitment to shaping cities to accommodate the automobile, has contributed to the sprawling development patterns seen across the United States. Parking, and the policies that govern parking, are a reflection of a city's priorities. Cities that provide ample free parking incentivize travel by automobile; yet, dense urban cores are capable of efficiently supporting travel by alternative modes. On the other hand, cities that manage parking through regulations, technology, and pricing can achieve a better balance in commute mode choice. As cities across the U.S. experience a resurgence of their urban core, the policies that govern parking should be re-evaluated to reflect those cities' future priorities. This thesis evaluates policies that shape the way parking is managed in cities and assesses the potential impact of these policies in the central business district of Atlanta, GA. The following provides a snapshot of the findings and recommendations detailed in this thesis.

**Continually Assess Existing Conditions.** The central business district of Atlanta has a parking capacity of approximately 154,972 spaces. Parking supply and demand should be monitored and studied on an ongoing basis, especially in light of ongoing changes in land use, travel demand, and the influence of potential transportation disruptors (e.g. automated vehicles, on-demand transportation, etc.).

**Remove Minimum Parking Requirements.** Removing minimum parking requirements can result in denser development, lower development costs, and increase vibrancy throughout the city.

**Set Parking Maximums at TOD Sites and in the Urban Core.** Parking maximums prevent the oversupply of parking in areas that can support increased mode share. Parking maximums also support parking management goals.

**Decouple Parking from Leasing.** Removing parking as a part of lease agreements lets the user pay for the parking they use directly. Decoupling parking also facilitates parking cash out

programs and shared parking which have been demonstrated in other regions to support alternative transportation mode choice.

**Shared Parking Should be the First Approach to Satisfying the Need for Parking.** Shared parking maximizes the usage of existing parking and decreases the need to create new parking facilities. Shared parking is a policy that creates win-win situations for all parties involved.

**Promote Parking Cash Out Programs.** Parking cash out programs require employers to provide the cash equivalent to employees who do not consume free parking provided to other employees. Parking cash out encourages carpooling and helps to lower the cost associated with providing employees parking. Surveys have also indicated that employees believe that parking cash out programs are fair.

**Technology is Critical to the Advancement of All Parking Programs.** Smart parking technology, integration with mobile applications, demand responsive pricing, and intelligent transportation systems are key factors to developing modern parking systems. Exploring different technology options to determine the best fit for the City of Atlanta is important to achieving the City's parking goals.

**Evaluate Potential Impacts of Market Disruptors on Parking.** Rideshare services, car-sharing, on-demand transit, autonomous vehicles, and other technologies will influence the future of travel. Assessment is needed to understand their impact on parking.

**Implement Parking User Fees.** This policy can help to offset the social, environmental, and opportunity costs of parking. A 15% parking user fee could generate approximately \$28.5 million in additional annual revenue in the City. User fees can be allocated to policies and programs that decrease the demand for parking and mitigate the negative effects of parking. Over a 40-year timespan, user fees could raise \$1.14 billion to support urban revitalization and growth.

**Create Neighborhood Parking Benefit Districts.** Treating on-street parking as a neighborhood asset can ensure that parking revenues return to the neighborhood to support local businesses, address residents' concern for parking shortages, and raise revenue for neighborhood specific projects. For example, a Castleberry Hill parking benefit district could generate nearly

\$919,000 a year for revitalization efforts. Similarly, a Grant Park parking benefit district could generate \$588,000 annually for local improvements. During the expansion of on-street parking, the City of Atlanta should implement neighborhood parking benefits districts and assess their impacts on revitalization goals.

**Coordinate Efforts between Public Works and Planning.** Parking management that helps to support revitalization, lower the need for parking, and create alternatives to automobile travel in the City of Atlanta will require a joint effort by the Department of Public Works and the Department of Planning and Community Development. The Department of Public Works should develop legislation that separates revenue generated from parking into a Parking Enterprise Fund. The Department of Public Works should also develop legislation that implements parking user fees and creates neighborhood benefit districts. The Department of Planning and Community Development should remove parking minimums from zoning codes, apply parking maximums where appropriate, require shared parking when constructing new buildings, and investigate ways in which surface parking lots can be converted to their highest and best use. These departments, and the Atlanta City Council, should craft a project list that helps to mitigate the impact that parking has on neighborhood vibrancy and support alternative travel modes. Parking revenue should be used to fund the completion of this project list and leverage parking resources to support urban revitalization and growth.

# CHAPTER 1

## HISTORICAL ROLE OF PARKING IN CITIES

### Origin Story

The practice of parking in the United States started long before the invention of the automobile. Centuries prior to the automobile, people used horses and carriages for rapid mobility. At the end of their journey, people needed a place to keep their horse. Some people used stables, while others tied their horse outside of their destination, and thus began the start of off-street and on-street parking (Parking Network, 2012). While this origin story of parking may seem a bit oversimplified, the practice of using and storing horses shaped the way that cities approach parking.

In the early years of the horseless carriage motorists needed a place to store their vehicles. Early versions of the automobile were highly sensitive to the effects of weather and needed to be kept away from the elements when not in use. Early parking garages were crafted out of buildings and used lift systems to accommodate vehicles (Swope, 2009). As automobiles became resistant to the damaging effects of the weather, drivers were able to park their vehicles outside of their location, using the places where they previously tied up their horses (Durning, 2013; Shoup, 2005). This use of the public right-of-way for parking has been maintained as the common practice to this day. Parking an automobile at the curbside became the norm and as automobile ownership increased more and more drivers required space to park their vehicle (Shoup, 2005). With the increased demand for free parking came a decrease in the available locations drivers could park their car. To meet the demand for free parking, cities began to re-shape the urban landscape around the demand for automobile use.

### Zoning with Parking

During the early 1900s, there was a rapid expansion in automobile ownership in the United States. From 1915 to 1930, vehicle ownership jumped from approximately 25 motor vehicles per 1000 persons to over 200 (Shoup, 2005). One factor in the rapid increase of automobile ownership was the affordability of the Model T and the refinement of assembly line production (History.com Staff, 2010). With an increase in automobile ownership came an increased demand for paved roadways and free parking. The on-street parking supply quickly reached capacity. Without price as a barrier to entry, motorists began to compete for the limited parking resource. To meet this demand for free parking, cities began to require that off-street parking

spaces be developed with each new building to serve the parking demand generated by the building (Shoup, 2005).

With parking requirements now in place, land use and parking became intertwined. Each building provided parking for its use and each parking space increased the space needed to develop buildings (Shoup, 1994). The policy of off-street parking requirements was established but the question of how much parking would be needed for each land use remained unanswered. This pairing became a contributing factor for urban sprawl.

### **Decentralization - 1930s and 1940s**

In the 1930s and 1940s, cities in the U.S. began to shift from densely populated areas, with a mixture of residential dwellings and small business, to a decentralized urban core in which people traveled from suburban homes to the workplace (Fogelson, 2008). Post World War II was accompanied by an increase in family incomes, the emergence of the nuclear family, and the advertised concept of the “American Dream” (Seiler, 2008). American culture became enamored by suburban style living, in which families could own a house with a yard, drive into the city when needed, and then retreat to a bucolic haven (Seiler, 2008). As families moved out to the suburbs, businesses followed. This migration pattern resulted in the decentralization of U.S. cities.

Decentralization is defined as “the redistribution of population and industry from urban centers to outlying areas” (Merriam-Webster, n.d.). Throughout the 1940s, decentralization was identified as a challenge to the survival of the central business district. Businesses and property owners worked to maintain the economic vitality of the urban core. Trends that were seen at the national level also occurred in the City of Atlanta.

In Atlanta, GA the business community rallied together to address concerns related to decentralization. In the 1941 article, “First Aid to Downtown Atlanta” published by the Atlanta Constitution, business owners and prominent community leaders discuss strategies for combating the effects of decentralization. As noted in this article “decentralization, from which central Atlanta has been suffering for some years, is now becoming more acute, and a cure - at least an improvement- is to be sought by the Atlanta Central Improvement Association” (Huddleston, 1941). Issues related traffic congestion, parking facilities, vacancies, appraised values, and income were all connected to the decentralization of Atlanta’s central business district. Robert F. Maddox, the head of the Atlanta Central Improvement Association stated:

To this day, cities throughout the United States are still feeling the effects of decentralization.

I have seen the decentralization of the downtown district owing to the expansion of the city suburbs and the development of business sections in surrounding territory. A similar condition has been found to exist in practically all of the larger cities of the United States owing to the increased use of automobiles, the expansion of paved roads, the extension of water mains and other services emanating from the city. These influences, together with the congestion of traffic in downtown areas, cause central property values to decline. While other cities have formed organizations to protect and improve facilities for doing business in the downtown areas, Atlanta has been laggard in the realization of the necessity for taking some action, but it is not too late and I hope the Central Atlanta Improvement Association will be able to improve the condition of the downtown area, which will be reflected in the improvement of the city as a whole.

Robert F. Maddox, Atlanta Constitution, 1941

As central business districts fought to maintain vitality, the form of the urban core was altered to serve the needs of suburban commuters at the expense of urban communities. In conjunction with decentralization, this alteration of the urban form is rooted in policies related to urban renewal and the migration pattern known as white flight.

### **Urban Renewal - 1950s**

The U.S. Congress and the Federal Housing Administration led the charge to reshape housing in the United States (U.S. Department of Housing and Urban Development, 2016). Legislation that supported the construction of single-family homes in suburban areas also facilitated the decline of populations in the urban core (Shuler, 2012). As residents of the urban core moved out to suburban areas, cities experienced a decline of tax revenue (Collins & Shester, 2011). The disappearing tax base, and lack of public and private investment into central business districts, contributed to the deterioration of neighborhoods in and surrounding the urban core. According to the U.S. Department of Housing and Urban Development:

The exodus to the suburbs led to new housing programs for declining urban areas authorized by the Housing Act of 1949. This Act authorized funds to localities to assist in slum clearance and urban redevelopment, new construction, and activities not directly related to housing construction: open space land, neighborhood facilities, and basic water and sewer facilities (U.S. Department of Housing and Urban Development, 2016)..

Although policies like the National Housing Act of 1934 and the U.S. Housing Act of 1949 intended to increase opportunities for housing and improve the quality of life for citizens, they had the unintended consequence of demolishing urban core areas (Freeman, 1996; Gans, 1965). The U.S. Housing Act of 1949 sought to undo some of the unforeseen consequences of the National Housing Act 1934 by demolishing buildings in the urban core that fell into disrepair and creating opportunities for development (U.S. Department of Housing and Urban Development, 2016). Ultimately, the anticipated construction in many urban areas did not occur. Without

legal provisions guiding how the newly cleared land would be used, cities often used the land for the cheapest and easiest use available to them: parking (Teaford, 2000). Five years after the U.S. Housing Act of 1949 a third piece of legislation was passed by Congress to help address the negative outcomes of previous housing legislations. The Housing Act of 1954 intended to shift the focus from demolition and new construction to the rehabilitation and conservation of deteriorated areas (U.S. Department of Housing and Urban Development, 2016). This process was coined as urban renewal. Urban renewal is defined as “a construction program to replace or restore substandard buildings in an urban area” (Merriam-Webster, n.d.). On paper, the Housing Act of 1954 was set to preserve the urban core and stimulate “urban renewal”, but in reality the demolition of many urban cores continued throughout the 1950s and 1960s (Weiss, n.d.). This is exemplified in the destruction of the Buttermilk Bottom neighborhood in Atlanta, GA (Keating, 2001).

The Buttermilk Bottom neighborhood in Atlanta, GA was an African American community slightly north of Downtown Atlanta. Situated in what is now known as the SoNo district, the Buttermilk Bottom neighborhood offered easy access to the resources of the central business district (Central Atlanta Progress, Inc., 2016; Keating, 2001). The Buttermilk Bottom area was a working class neighborhood that struggled after employment opportunities left the urban core (Pendered, 2012). Infrastructure such as electricity, sewage, and paved roads were inadequately provided to this neighborhood by the City of Atlanta, and the quality of life in the Buttermilk Bottom deteriorated - See Figure 1.1 (Atlanta Days, 2012; Taylor & Hill, 2000). In 1959, Atlanta Mayor William B. Hartsfield visited the Buttermilk Bottom neighborhood to inspect the conditions of the area (Villet, 1959). Subsequently, the neighborhood was considered a “slum” in need of “urban renewal” (Caro, 1975). In the 1960s, the Buttermilk Bottom neighborhood was leveled to make way for new development, most notably the Atlanta Civic Center. With the development of the Atlanta Civic Center came the development of approximately 950 parking spaces (Figure 1.2) on land that was previously used as working class community housing (Payne, 2014). The Buttermilk Bottom example is typical of situations throughout the country (Gotham, 2001; Heathcott, 2008). During the Urban Renewal era countless neighborhoods throughout the United States were leveled to make way for major development projects that rarely materialized (Fas-enfest, 1984; Teaford, 2000). Cleared land that did not experience the promised development was frequently used as surface parking (Teaford, 2000). The projects that did materialize often came with the amount of parking determined through zoning minimums. Throughout the Urban





Figure 1.1. Atlanta Buttermilk Bottoms Area Tour for City Ministers (Jet Magazine, 1956)

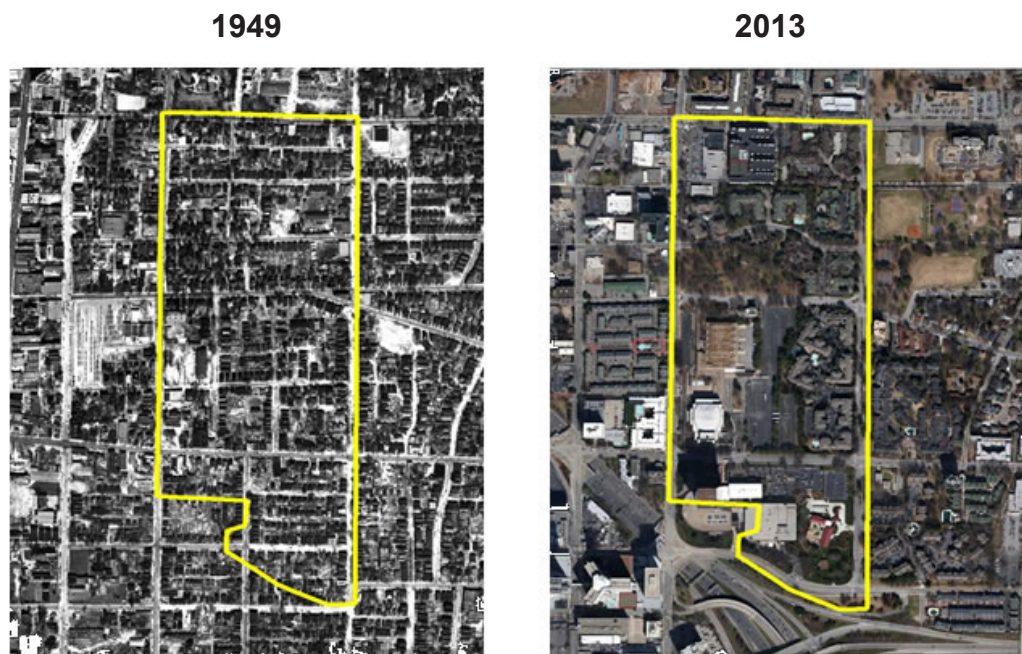


Figure 1.2. Aerial photo Buttermilk Bottoms neighborhood compared to Atlanta Civic Center (Payne, 2014)

Renewal era, parking increased in the urban core. This made it easier for people to live in the suburbs, travel to the urban core on the interstate highway, and park at their destination.

During the era of Urban Renewal, the urban core faced additional challenges to its survival. The Federal Aid Highway Act of 1956 sparked the development of highways throughout the country (Weingroff, 1996). To provide easy access to central business districts, highways developed in metropolitan areas cut across the center of cities. To make room for “highways of

the future” numerous neighborhoods were destroyed (Jacobs, 1992). Highways cut off the connection between local neighborhoods and the central business district. While this transition was occurring in cities around the country, Jane Jacobs noted the changing relationship between cities and the automobile:

The present relationship between cities and automobiles represents, in short, one of those jokes that history sometimes plays on progress. The interval of the automobiles development as everyday transportation has corresponded precisely with the interval during which the ideal of suburbanization anti-city was developed architecturally, sociologically, legislatively and financially (Jacobs, 1992).

In Atlanta, the “Downtown Connector” was constructed in the 1950s and 1960s (Georgia Department of Transportation, 2015). The Downtown Connector is a segment highway that connects interstate highways I-85 and I-75 as they pass through the heart of Atlanta (Georgia Department of Transportation, 2016). During the construction of this highway, and its subsequent widening in the 1980s, the Sweet Auburn neighborhood was bisected and the Washington-Rawson neighborhood was destroyed (Judt, 2015). The formation of this highway disconnected nearby neighborhoods from Atlanta’s urban core while providing easier access for suburban neighborhoods. The combination of urban renewal and the interstate highway further facilitated the development of the automobile-oriented city and stimulated the formation of parking as a major land use in the urban core (Vargo, 2013).

### **White Flight - 1960s and 1970s**

At the start of the 1960s, multiple factors were in place to facilitate movement away from the urban core. The interstate highway decreased travel time to outer suburbs, ample parking provided access to the urban core, and government funding provided discounts for suburban living (Powell, 2008). The Civil Rights Act of 1964 served as a catalyst for the mass migration of white residents out of the urban core. The Civil Rights Act of 1964 called for the integration of neighborhoods and institutions throughout the United States (History.com Staff, 2010). As integration occurred in cities, many of the white residents of the urban core moved to the suburbs. This migration pattern was coined as White Flight. White Flight is defined as the departure of whites from places (as urban neighborhoods or schools) increasingly or predominantly populated by minorities (Merriam-Webster, n.d.). As white residents left the urban core, blacks moved inward towards the city center (Frey, 1980). This migration pattern was accompanied by a shift of the economic conditions in the urban core. Due in part to a lack of funding by local municipalities, city centers fell into disrepair (Alsop, 1969). With a dwindling tax base, local municipal-

ities had limited capability for preventing the downward spiral of the urban core (Weiss, n.d.). Although wealthier white residents no longer lived in the urban core, many of the white collar jobs were still located in the central business district. White suburban residents would need to commute into the city for work, park their vehicle at work, and then leave once the work day was complete. This commute pattern became commonplace throughout the 1960s and 1970s and is currently the major travel pattern in cities (U.S. Census Bureau, 1990). The increase in commuting between suburban areas and the city center further increased the demand for parking.

### **Office Parks vs. City Centers - 1950s to 1990s**

An underlying factor throughout the formation of housing policies, and the response of city centers to a decreasing population, was the ongoing competition between suburban office parks and urban city centers (Lang, 2000). Office parks were originally created in a post-World War II dynamic where the automobile and suburban living were growing in popularity (Seiler, 2008; Whiston Spirn, 2005). To compete with the rise of the Office Park, central business districts were slowly converted to accommodate the automobile and mirror the development practices of the suburbs (Schuld, 2009; Teaford, 1990).

Urban Renewal and the Interstate Highway System were used as foundation for accommodating the automobile. Land clearing also provided the opportunity to create off-street parking for the increased commuting by Interstate Highway. Zoning policies that required off-street parking facilitated automobile usage (Shoup, 2005). Shoup (2005) argues that many of these policies implemented in urbanized areas over time were based on parking behavior observed in suburban settings, with no access to transit and limited walkability (Shoup, 2005). Policies such as minimum parking rates, employer subsidized parking, and on-site parking for each development increased the number of parking spaces created in the central business district (Shoup, 2005). With increased parking availability, space provision supported longer travel distance between locations. Suburban land use characteristics are not amenable to transit provision, hence driving became a necessity and parking was expected to be available at every destination (Cervero & Gorham, 1995). As travel distances increased, so did the utility of the automobile, and the desire to drive to your destination and park when you arrived. An increase in automobile commuting increased the “demand” for parking, which ultimately increased sprawl and automobile dependency (Litman, 2006; Shoup 2005). Todd Litman (2006) details the Cycle of Automobile Dependency and its impact of the sprawl of cities in Figure 1.3.

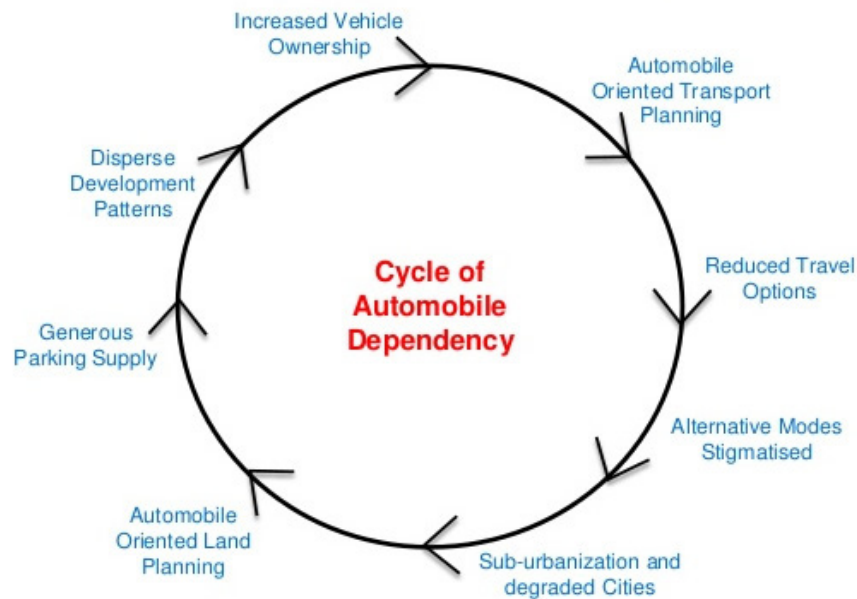


Figure 1.3. Cycle of Automobile Dependency

From the 1950s to the turn of the 21<sup>st</sup> century, the implementation of parking policies transformed the shape of cities. Parking increased as a major land use in city centers. The increase of surface parking supply in the central business district resulted in parking craters (Schmitt, 2014). A parking crater is a depression in the middle of an urban area formed by the absence of buildings (Clarence, 2014). Parking craters (absence of buildings) can be seen in multiple cities throughout the United States. In 2014, Streetsblog USA held a competition to determine which city had the “winning” parking crater (Schmitt, 2014). The continued trend of accommodating the automobile by increasing the number of parking spaces in the urban core has deteriorated city centers to a point where they resemble suburban office parks. Commuters drive into the city center on the Interstate Highway, park their automobiles for free (or nearly free), and then leave the city center when the work day is complete. Once the work day is done, the city center becomes an auto-oriented ghost town.

The competition between Office Parks and City Centers has left both the urban core and suburbs disconnected. Cities and suburbs both have been spread apart, requiring people to drive to their destination. Office Parks have declined in popularity and are now considered to be an obsolete land use form (Newmark Grubb Knight Frank, 2015; Wile, 2013). City centers that are now experiencing a resurgence in popularity must overcome structural problems that have resulted in parallel with decades of auto-oriented development. As cities once again become the place where people choose to live, work, and experience life, the role of parking and the policies that govern land use will be pivotal to the success of the urban core.

## CHAPTER 2

### PARKING NEEDS FOR THE FIRST CHOICE CITY

#### Migration to First Choice Cities - 1990s to Present

Throughout the United States, cities are seeing a resurgence in popularity. Over the past two decades, cities have seen a growth in population (Berg, 2012). According to the U.S. Census Bureau, 62.7% of the nation's population live in cities (U.S. Census Bureau, 2015). Cities are attracting young professionals and companies as the preferred location of choice (Nielsen, 2014). "First Choice Cities" are sprinkled throughout the United States and have unique characteristics.

The demand for urban living has increased. The two largest generational groups, Millennials and Baby Boomers, are seeking a lifestyle that is vibrant, convenient, and car-optional (Flint, 2015; Maciag, 2015; Strongin, 2015). Recent migration trends show that Baby Boomers are moving back into the city (McGarvey, 2013). After Baby Boomers retire many seek to downsize their lifestyle and move into the city for easier access to entertainment and day-to-day needs. As Baby Boomers leave the work force and move back into the city, the number of commuters traveling into the city for work may decrease (McGuckin & Lynott, 2010). This desire for city living has led to market trends that call for density and walkability (Katz & Wagner, 2014). The increase demand for city living is also being influenced by Millennials stated preference for the urban core (Nielsen, 2014). This differs from previous movement trends in which people left the city center for the suburbs. With this changing dynamic, comes a need to rethink how land is used in the city center. When people moved away from the city, land use in the urban core was slowly converted from dense urban development to suburban style office parks. Now that people are moving back to the city, the form of land use may shift to support the needs of the city center.

#### Density

Understanding why cities are increasing in popularity goes beyond the migration trends of Millennials and Baby Boomers. To fully understand what makes a city the first choice for residents and businesses it is important to understand the characteristics of a great city. In a 2010 article, *What Makes a City Great? An American Perspective* by H.V. Savitch, the author discusses four critical elements of a great city (Savitch, 2010). These elements are currency, cosmopolitanism, concentration, and charisma:

- Currency: connotes the value of something and its ability to carry weight in crucial circumstances. It also conveys that a city shapes the world by the value and forwardness of its actions
- Cosmopolitanism: entails an ability to embrace international, multicultural or poly-ethnic features
- Concentration: embraces the dual ideas of demographic density and productive mass. Both high densities and productive mass would lead to the most vibrant cities-first because this kind of city pulsates with human activity all the time and second because it provides material well-being for most inhabitants
- Charisma: is an elusive concept because so much of it is based on perception and is commonly evaluated by examining mass attitudes

(Savitch, 2010)

Of these elements, concentration is directly related to the way cities use land and the way people travel. Land used for parking, particularly in the form of surface parking lots, detracts from a city's ability to increase the population density at the urban core (Manville & Shoup, 2004). Dedicating land to vehicle storage rather than developing land to provide housing, businesses, and retail has a high opportunity costs (U.S. Environmental Protection Agency, 2006). Providing the level of density that enables the walkability and vibrancy demanded by people in cities can be achieved by re-purposing land that is currently being used as parking to its highest and best use (Webster, 2015).

According to U.S. Census Bureau, the City of Atlanta has a population density of 3,154 persons per square mile (United States Census Bureau, 2015). When compared to other major cities in the United States, Atlanta's lack of density becomes apparent (Kahn, 2015). Table 2.1 shows a list of major cities in the United States ordered by population density (U.S. Census Bureau, 2015). This difference in density is influenced by the way Atlanta manages parking and suburban sprawl.

Table 2.1 U.S. Cities by Population Density, 2010

City	Total Population	Population per Sq. Mile
New York City	8,174,959	69,467.5
San Francisco, CA	852,469	17,179.1
Boston, MA	617,680	12,792.7
Chicago, IL	2,695,598	11,841.8
District of Columbia	601,767	9,856.5
Los Angeles, CA	3,928,864	8,092.3
Houston, TX	2,096,661	3,501.5
Atlanta, GA	429,256	3,154.3
Charlotte, NC	735,758	2,457.1
Nashville, TN	603,506	1,265.4

Suburban living, characterized by low density single family homes, comes with multiple tradeoffs. Suburbs, often noted for availability of space at low housing costs, come with the tradeoffs of longer travel commutes, increased travel costs, and lifestyles that are dependent on the automobile (Cervero & Kockelman, 1997; Frank & Pivo, 1994; Litman, 2016). This automobile dependent lifestyle creates an expectation that people will have direct access to all destinations by automobile and trips will incorporate low levels of walking. Automobile dependency also results in suburbs that are unsustainable (Newman & Kenworthy, 2006). Low density development, characteristic of suburban sprawl, results in increased vehicle miles traveled, higher vehicle emissions, and higher rates of environmental degradation (Newman & Kenworthy, 2006). Suburban style development also requires greater investment in public utilities to meet the needs of sprawling communities (Speir & Stephenson, 2007).

Over the past 50 years, suburban sprawl has resulted in undesirable outcomes (Wilson & Chakraborty, 2013). One of the most notable outcomes is congestion along the interstate highway. Each day commuters travel from the surrounding counties and suburbs to the city of Atlanta (Mariano, 2012). This daily commute pattern is the main cause for Atlanta's infamous traffic congestion (Caldwell, 2016). An auto-oriented transportation system can create undesirable land use patterns for both the suburbs and the central city. Commuters who are accustomed to free and plentiful parking in the suburbs may demand the same level of parking in the central city. By accommodating this demand, the central city can undercut its ability to provide the dense urban core associated with cities of first choice. It also prevents the central city from having the vibrancy, travel options, and sustainability desired by people who prefer city living.

### **Technology**

One of the main characteristics of First Choice Cities is the importance of technology in the economy (Roose, 2014). Cities that are the preferred location of businesses and residents use technology to their advantage. Integrating technology into the day-to-day operations of the city and incorporating technological solutions that help meet the needs of the city is critical (Gaspar & Glaesar, 1998). Technological solutions that improve the transportation system are particularly important in first choice cities (U.S. DOT FHWA, 2013). Congestion has been noted as one of the main deterrents for businesses and residents to move to the Atlanta region (Badger, 2013; The Associated Press, 2007). By using technology to minimize congestion and travel delay, cities can improve their desirability. For example, technological solutions such as actuated signal timing and high occupancy toll lanes have helped to improve travel conditions for

motorists, carpools, and bus transit (Pessaro, Turnbull, & Zimmerman, 2013; U.S. DOT FHWA, 2013; U.S. Government Accountability Office, 2012). In cities that have integrated technology with their parking systems, technological solutions such as smart parking apps and demand responsive pricing have improved motorists experience for accessing the city (Pierce & Shoup, 2013; Shasheen, Rodier, & Eaken, 2005). Seamlessly integrating technology into the character of the city will be a benefit to first choice cities. The Millennial generation, and generations to come, have an expectation that technology will be easily accessible and a part of their daily lives. By embracing technology, cities can meet the continued demand for smart city living.

### **Leverage Parking Resources**

In first choice cities, people desire a parking system that meets their needs of access without sacrificing the vibrancy that attract people to the city in the first place. Cities that are vibrant and highly desirable, such as New York City, San Francisco, Washington D.C., Chicago, and Portland, have all diminished the emphases of parking. Providing direct access to destinations with on-site parking is less important than providing vibrant and safe streets. Instead of emphasizing success through parking access they have promoted access through a multimodal transportation system. The parking that is provided typically comes in the form of on-street parking. While providing parking for motorists, these cities have also maximized the utility of parking by developing a dual purpose for their parking supply. On-street parking is used as a buffer between the traffic stream and other modes of travel. In New York, on-street parking is used to create parking protected bike lanes (NYC DOT, 2014). In San Francisco, on-street parking uses smart parking technology to help motorist find parking through the SFpark App (SFMTA, 2016). In Portland, revenue generated from parking was used to fund their streetcar expansion and operations (Griffin-Valade, Kahn, & Guy, 2013). These first choice cities have rethought the role that parking plays in their city and leveraged it as a tool for overall improvement. They have embraced the concept that less is more and access is greater than excess.

### **Mode Choice**

#### **Cycling**

First choice cities also acknowledge the impact that parking has on other modes of travel. Increased parking in the urban core results in decreased travel by other modes. When parking is plentiful the cost of parking is lowered (Shoup, 2005). Underpriced parking promotes automobile travel and undermines travel by transit, walking, and biking (Cervero & Kockel-



man, 1997; Weinberger, 2012). Surface parking lots placed in front of buildings increase the walking distance of pedestrians. It also sandwiches pedestrians between moving automobiles and parked cars. Parking also impacts the cycling experience (Buhler, 2012). The presence of driveways along sidewalks, and turning movement of cars between off-street parking facilities and the roadway, are of particular importance to cyclist. Increase curb cuts result in additional conflict points between cyclists and motorists (Fowler, Ward, & Dance, 2016). Depending on its design and location, on-street parking can have either positive or negative effects on cycling. On-street parking used in the form of parking protected bikelanes with adequate buffer space can increase cyclist's safety (NYC DOT, 2014). On the other hand, on-street parking can degrade cyclist's safety by creating conflicts with cyclists and the open door of parked vehicles (Cumming, 2012; Lindman, Jonsson, Karlsson, Gustafson, & Fredriksson, 2015; Lowry, Callister, Gresham, & Moore, 2012). Lastly, vehicles entering or exiting on-street parking spaces can block the pathway of bike lanes, causing cyclist to swerve into moving traffic (Lindman, Jonsson, Karlsson, Gustafson, & Fredriksson, 2015). For first choice cities, managing the interactions between parking and cyclists will be key to creating the bikeable cities that are preferred by Millennials.

## **Transit**

The cost of parking provides an economic impact that affects how people decide to travel. The impact of parking on transit is of particular importance to first choice cities. The need for transit access and multiple travel options increases in importance with population growth. Parking, particularly free or underpriced parking, can incentive automobile travel. Parking costs that are less than a roundtrip transit fare serve as an incentive for people to drive to their destination and detract choice rides from transit (Mildner, Strathman, & Blanco, 1997; Morrall & Bolger, 1996). Parking can also prevent compact development and create longer travel distances for transit by spreading out the footprint of land uses (Cervero & Kockelman, 1997; Frank & Pivo, 1994). Parking can also burden transit rides by deteriorating the last mile connectivity to transit. Because first choice cities are multimodal cities, minimizing the negative impact that parking has on other modes will be a major priority. Ultimately, the policies that shape parking in the central city will influence if a city if the location of first choice.

## CHAPTER 3

### A REVIEW OF PARKING POLICIES AND STRATEGIES

#### Parking Supply and Demand

From the 1930s to the present, most parking policies have been implemented to create the supply needed to accommodate the demand for free parking (Shoup, 2005). The Institute of Traffic Engineers (ITE) developed the Parking Generation Manual to predict the amount of parking needed for a particular land use (Institute of Transportation Engineers, 2016). Studies for parking generation rates were conducted at multiple land use sites. To assess the amount of parking used for a given land use, study sites were often isolated from other land uses. The study sites were often in a suburban settings with little or no access to transit (Shoup, 2005). This methodology allowed ITE to develop parking generation rates for 106 land uses (Institute of Transportations Engineers, 2010). Parking rates were conveyed as a factor of square footage, residential unit, seats in a theater, etc. Parking rates for a land use were concluded to be the minimum amount of parking necessary to prevent spillover (Shoup, 1999). As automobile ownership increased, municipalities attempted to minimize parking spillover by including minimum parking requirements into zoning (Meth, 2011). The minimum parking rates applied in zoning were often adopted from the ITE Parking Generation manual.

Incorporating minimum parking rates into the zoning helps to ensure that each land use provides the peak amount of parking needed for that land use (Shoup, 1999). Parking minimums therefore increase the supply of parking to meet the expected demand. Because parking generation rates are evaluated at suburban sites, with ample free parking and no transit alternative, the observed parking demand is actually the demand for free parking when no alternative is available (Shoup, 2005). Providing the parking supply for an expected demanded of free parking results urban sprawl, which in turn increases the demand for parking. This cyclical process is described by Donald Shoup as the Six-step Process of Planning for Free Parking (Shoup, 2005). Figure 3.1 shows how parking generation rates, and their adoption into zoning, result in increased automobile trips. A transportations system that is designed for the automobile will spreads destinations further apart. Ultimately, the notion that each land use must supply ample parking to meet future demand becomes a self-fulfilling prophecy.

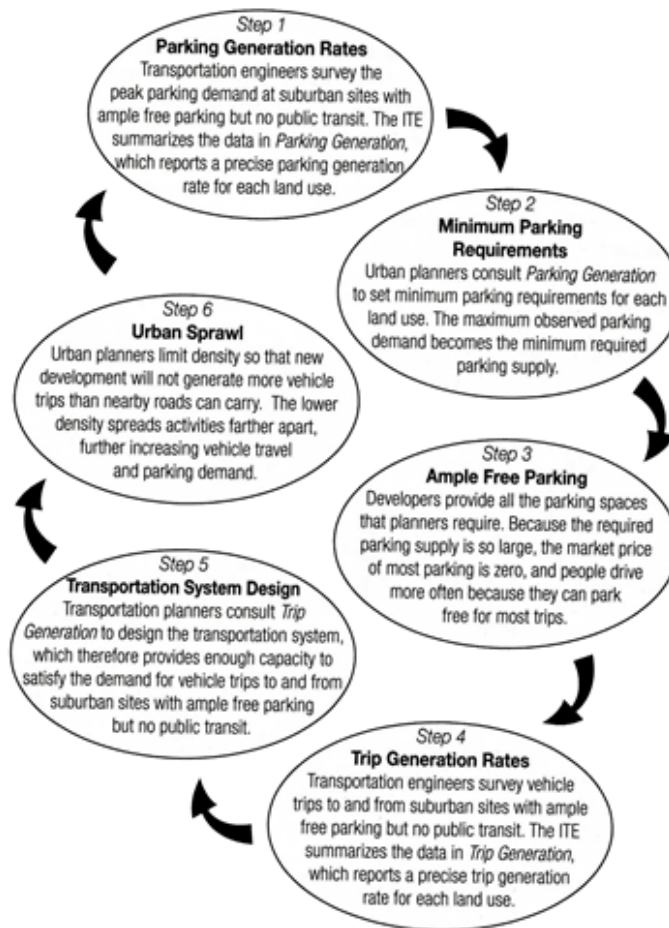


Figure 3.1 Six-step Process of Planning for Free Parking

### Parking Design and Placement

One important strategy related to parking is the design and placement of parking. The design and placement of parking impacts the area around it. Because parking is often the first and last impression that a person has of an area, it can also set the tone for a neighborhood (Shoup, 2005). Evaluating the impact of different forms of parking is important to understanding the role that parking plays for an area. Off-street surface parking lots, parking decks, and on-street parking create a different user experience and therefore impact their surrounding areas in different ways.

#### Off-street Surface Parking

According to the National Institute of Building Sciences, surface parking is defined as a large paved area used for extensive vehicle parking (WBDG Staff, 2009). Surface parking lots have been identified as the least desirable form of parking (Damron, 2013). Surface parking lots create separation between the pedestrian environment and land use and can result in gaps

between businesses (Damron, 2013). Although surface parking lots are cheap to develop, such parking lots produce an environment that disconnects pedestrians and cyclist from their destination (Cervero & Kockelman, 1997). Surface parking has also been associated with the formation of heat islands, storm water runoff, and air pollution (Davis, Pijanowski, Robinson, & Engel, 2010; Hoglund, 2004).

### **Structured Parking Decks**

Structured parking is defined as an above-grade, ramp access, open-air structure specifically designed to accommodate vehicle parking (WBDG Staff, 2009). The design and placement of structured parking facilities affect whether structured parking has positive and/or negative impacts on the pedestrian environment. Facilities that are incorporated into the design of an area, and blend in with the surround developments, can provide for a seamless pedestrian experience. Parking structures that provide ground level retail, active land use, and minimal interruptions to the pedestrian right-of-way can serve as enhancement to the pedestrian environment (Cervero & Kockelman, 1997; Shoup, 2005). On the other hand, structures that have multiple driveways, blank walls, sloping ramps, and inactive ground levels can dominate the pedestrian experience and create a feeling of unsafety (Cervero & Kockelman, 1997; Weinberger, 2012).

### **On-street Parking**

On-street parking can be defined as a location in which a vehicle is parked along the curb of a street (Parking Network, n.d.). On-street parking can provide easy access to businesses, but it is limited to the number of spaces that are near the final destination. On-street parking can come in the form of metered or unmetered parking. In metered parking spaces, the user must pay for the use of the parking space. Metered parking spaces often have time limits on how long a motorist can park their vehicle. Unmetered spaces do not require payment for parking and may or may not have time limits associated with parking in a particular space.

### **Placement**

The placement of parking facilities is a primary determinant of parking's impact on an area. Parking can be located in the front, behind, or between buildings (See Figure 3.2). Parking located in the front of buildings is noted as the most disruptive location to the pedestrian environment (Mukhija & Shoup, 2006). Parking in front of buildings interrupts the pedestrian

right-of-way, creates a barrier between pedestrian space and land use, and orients buildings to motorist (Mukhija & Shoup, 2006). Locating parking between buildings can limit the amount of usable space for buildings. While less intrusive than locating parking in front of buildings, parking located between buildings creates a space that is discontinuous. Parking between buildings can also result in an inconsistent pedestrian experience consisting of multiple curb cuts and empty spaces between buildings. Parking located behind buildings is the least intrusive location for parking (Metropolitan Transportation Commission, 2007). It allows for connection between land uses and the pedestrian right-of-way. Pedestrians are able to see into ground level retail, restaurants, and storefronts (Mukhija & Shoup, 2006). It also provides for a diverse pedestrian experience while still meeting the needs of motorists.

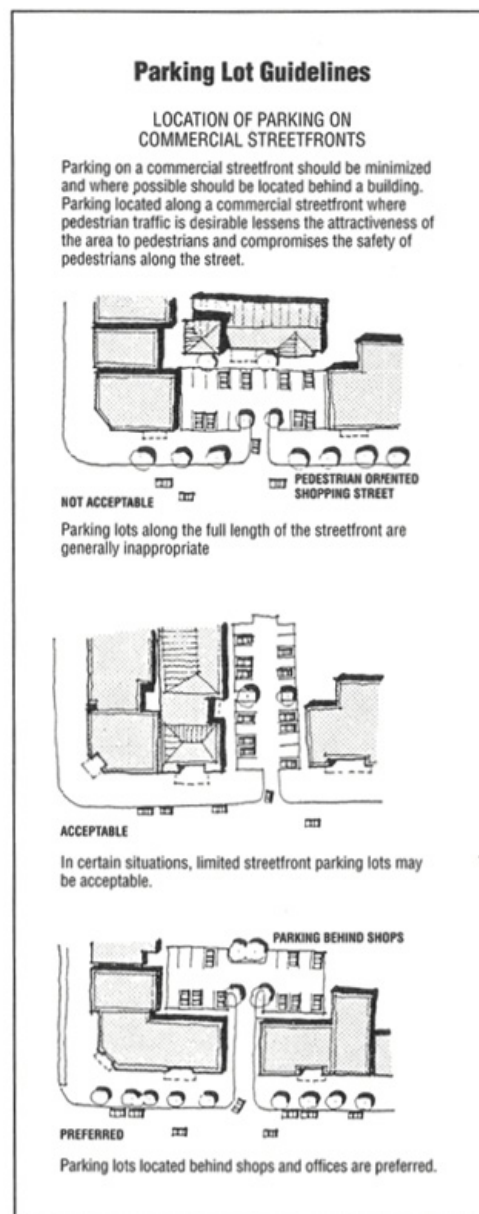


Figure 3.2 Impact of Surface Parking Location on Commercial Storefronts

## **Decoupling Parking**

Parking is tied to land use through lease agreements. Lease agreements tie parking to a land use by entitling residents or businesses to a number of parking spaces based on terms of their lease. In many residential lease agreements, parking is provided as an amenity to the dwelling unit. As an amenity, the cost of parking is bundled with the cost of the dwelling unit. This masking the true cost of a parking space for residents. In business lease agreements, employers are entitled to a designated amount of spaces with their leasing of office space. Since parking spaces are bundled with the cost of office space, employers can use parking as a subsidy to employees. Because parking is often bundled into the lease agreement, residents or employers are not able to pay for the cost of their primary land use, without the built in cost for parking. Removing parking from lease agreements, and charging for parking separately, allows residents and employers to make direct choices about their purchase of parking (Shoup, 2005). Unbundling parking from lease agreements also allows employers the flexibility to provide parking cash out programs.

## **Parking Cash Outs**

Parking cash out programs require employers to provide the cash equivalent to employees who do not consume free parking provided to other employees. When parking is uncoupled from lease agreements an employer can decide how many parking spaces to purchase. The cost of parking can be paid by the employer as a subsidy to the employee or the employer can offer cash instead of a parking space. Parking cash out programs have been linked to increases in carpools, vanpools, and transit usage (California Environmental Protection Agency, 2009). When combined with transit subsidies, parking cash outs also promote mode shifts (Van Hat-tum, 2000).

Parking cash out programs have been used in California since the early 1990s. When implemented, parking cash out programs benefit both employees and employers (U.S. Environmental Protection Agency, 2005). For employees, they provide a financial incentive to carpool and save employees money. For employers, they lower the financial burden of subsidizing parking and improve parking management strategies. Cash out programs also benefit municipalities as a whole. Offering employees cash instead of free parking creates a taxable alternative to an otherwise untaxed good. Lastly, parking cash out programs have been linked to decreases in vehicle miles traveled and vehicle emissions (Holmes, 1998).

## **Shared Parking**

Shared parking agreements can maximize the usage of the existing parking system. Shared parking takes a systematic approach to parking and pairs land uses that have alternating peak demands for parking (Metropolitan Transportation Commission, 2007). During business hours a parking facility can be used primarily by people who work in offices near the parking facility; whereas during evening hours and weekends parking is used by residents of the neighborhood. While shared parking may be naturally occurring in some communities, others require parking to be associated with each individual land use (Shoup, 2005; Willson, 2005). Shared parking agreements allow for different land uses to meet their parking needs by sharing a common parking stock. This parking strategy allows for the development of less parking.

Shared parking agreements are particularly important for development in historic districts and adaptive reuse projects (Forinash, Millard-Ball, Dougherty, & Tumlin, n.d.; Mukhija & Shoup, 2006). In historic districts that were developed prior to the mass adoption of the automobile, development was geared towards the pedestrian. Streets were often narrow and accommodated people instead of cars. Furthermore, properties lines were not setup with the land area needed to house automobiles. When historic areas are being adapted to modern uses they often face challenges to meet the parking required through zoning for a land use (Shoup, 2005). The additional space needed to house the amount of automobiles believed be a result of parking demand is not typically incorporated into older land footprints. This often results in higher development costs, requires additional land purchasing in order to accommodate parking, or in some cases makes developments unfeasible. Shared parking can provide a way for developments in historic areas or adaptive reuse projects to meet their parking requirements without creating new parking spaces (Department of Community and Environment Division, 2006; Shoup, 1999). Developments can jointly meet their parking needs by agreeing to share the existing parking supply or pay fees in lieu of developing parking. Shared parking can help to increase the feasibility of redevelopment projects, promote development in historic areas, and increase occupancy rates in existing parking facilities.

## **Congestion Pricing and Parking Fees**

Free parking has been associated with increased vehicle trips, vehicle miles traveled, higher levels of car ownership, increased roadway congestion, and deterioration of pedestrian and cyclist infrastructure (Cervero & Kockelman, 1997; Litman, 2013; Shoup, 2006; Shoup, 2005). It has also been connected with increased greenhouse gas emissions, storm water

runoff, and heat islands (Davis, Pijanowski, Robinson, & Engel, 2010). Although these negative outcomes of parking have been identified there is not a standardized way of offsetting these social, environmental, and infrastructure costs. Cities across the world have attempted various methods to offset these type of negative outcomes. Two interesting methods are congestion and parking fees.

### **Congestion Fees**

A congestion fee is the charging of motorist for access to an area of high demand or usage of transportation infrastructure (Orski, 1992). It is aimed at associating a price with access to public goods of high demand. Congestion fees can help to lower traffic congestion in areas such as the central business district or on highways by limiting the amount of motorist that use a public good to those that are willing to pay for that good (Albert & Mahalel, 2006). It also helps to divert people who are not willing to pay for a public good to other modes of transportation (Orski, 1992). Congestion fees have been implemented in cities such as Singapore, Oslo in Norway, and London, England.

In 2003, the City of London began charging a fee to all privately owned vehicles that entered the central district of the city from 7:00 A.M. to 6:30 P.M. (Litman, 2011). This charge was put into place to manage congestion in central London and serve as a revenue source for public transportation improvements. At its start, the charge was priced at £5 per day, approximately \$8 in the United States (Transport for London, 2008). When originally proposed by Mayor Ken Livingstone, it was met with skepticism and opposition. Business owners, citizens, and competing politicians were in disagreement about what impact congestion fees would have on the city (Litman, London Congestion Pricing: Implications for Other Cities, 2011). After 12 years of implementation the congestion fee in London is noted as a success story of how bold policy can impact the development of a city. The congestion fee has increased to £11.50 per day, approximately \$17.50 in U.S. currency (Transport for London, 2016). Central London has seen a 27% decrease in traffic congestion and a 12% increase in bike ridership (Transport for London, 2015). Revenues from the fee continue to fund public transportation improvements in the city and the congestion fee is widely accepted by the citizens of London.

### **Parking User Fees**

In many cities, parking fees are charged to the users and providers of parking. Users pay for parking both in the form of user-paid parking fare and surcharges added to those trans-



actions (Litman, 2006). Of note, 99 percent of parking in the United States is free. Motorists that do pay for parking do not pay the true cost of parking (Shoup, 1999). When motorist pay for parking, the paid amount does not reflect true cost of parking. Adding a surcharge to parking, also known as a parking user fee, can help to close the gap between the paid cost to park and the true cost of parking (Albert & Mahalel, 2006). Parking user fees have been implemented in many cities throughout the United States. Cities like Chicago, New York, Pittsburgh, San Francisco, and Seattle implement a parking occupancy tax/parking surcharge. Parking user fees can range from 6% to 31% of the transaction cost. Table 3.1 provides a list of some of the cities that have implemented parking user fees and corresponding fee rate (Litman, 2013). Revenue generated from parking can be used to fund transportation related project such as improving public transportation, developing pedestrian and bicycle infrastructure, implementing smart parking technology, expanding on-street parking, and landscaping/beautification projects that enhance the pedestrian experience (Shoup, 2004). Parking user fees are typically a percentage of the user-paid parking transaction costs. Analogous to excise fees for alcohol or tobacco sales, parking user fees pass on the social costs of parking to the user instead of the community as a whole. If implemented, parking user fees could be used for projects that provide alternatives to driving and parking. Unlike parking districts that are limited to neighborhood level, parking user fees can be scaled up or down as necessary. Parking user fee zones can be developed for areas that have higher demands for parking and generate vehicle trips. This would be appropriate for central business districts in auto-oriented cities where driving is the predominate form of transportation.

### **Per-Space Levies and Free Parking Levies**

Parking fees that are distributed to the providers of parking can be per-space levies or free parking levies. Per-Space levies are a special property tax on parking facilities (Litman, 2013). This levy is used for non-residential parking spaces and addresses locations that provide parking for a mixture of land uses. (Litman, 2013). Residential parking spaces are typically exempt from the per-space levy while providers of the parking are charge an annual tax for non-residential spaces. Per-space levies can help to encourage parking pricing and

Table 3.1 Parking Taxes in Various Cities\*

City	Parking Tax
Bainbridge Island, WA	12% of revenues on both public and private parking facilities
Bremerton, WA	6% of commercial operator revenues
Burien and SeaTac, WA	\$1.00 per parking transaction (exempt for people with disabilities, government vehicles, and carpools)
Baltimore, MD	\$14 flat fee on monthly parking transactions, 11% on daily and weekly parking
Cleveland, OH	8% tax to fund a new football stadium
Detroit, MI	30% tax on airport commercial parking
Los Angeles, CA	10% of parking revenues
Miami, FL	27.8% of revenues
New York, NY	18.5%, or 10.5% for Manhattan residents
Oakland, CA	10% of revenues
New Orleans, LA	12% of revenues
Pittsburgh, PA	31% of revenues
Santa Monica, CA	10% of revenues

*\*This table summarizes examples of commercial parking taxes in U.S. cities.*

reduce the supply of parking (Litman, 2013). When applied as a parking management tool, per-space levies can be scaled according to the area of implementation. Spaces in the central business district can be valued at a higher annual rate than other districts. This results in denser development in the central business district and lower amounts of land allocated to parking.

A similar levy can be applied to free parking spaces. By charging a levy on free parking spaces, employers are discouraged from providing parking as a subsidy and businesses are encouraged to charge for parking (Litman, 2013; Shoup, 2005). Removing free parking as a subsidy helps to even the costs of different modes of travel (Litman, 2006). Motorists are incentivized to economize their travel and evaluate alternative transportation modes. When combined with discounted transit passes, a free parking levy can help to promote mode shifts (Transit for Livable Communities, 1998). Free parking levies are applied to spaces at parking facilities that do not charge for parking. An annual fee is charged to the property owner. This charge can be scaled based on the location of the parking facility and encourage denser developed in the central business district (Litman, 2013).

## **Parking Districts**

### **Residential Parking Permits**

A residential parking permit district is a way for neighborhoods to dedicate on-street parking spaces to the residents of that neighborhood (Marsden, 2006). This model is used in neighborhoods around the country. It allows neighborhoods to form a district that prevents non-residents from parking in their neighborhood during certain hours. It is predominantly used in residential neighborhoods with free on-street parking and minimal commercial activity. Residents are typically provided a decal or hangtag that denotes they are a member of the parking district (City of Atlanta, 2016). This distinguishes them from visitors that use on-street parking spaces. Members of the residential parking district often pay a membership fee to cover the cost for decals, signage, and other operational costs needed to maintain the district.

While parking permit districts serve the need for residents in the area, they can also create difficulties for people visiting the district. Restrictions for on-street parking may result in additional travel distances for people visiting the area (Marsden, 2006). Residential only restrictions may also serve as a deterrent for people visiting the area. In auto-oriented cities, where driving is the dominant form of transportation, parking restrictions such as residential parking permit districts can result in unexpected behavioral changes for visitors to an area (Shiftan & Burd-Eden, 2001). Neighborhoods that are adjacent or in close proximity to commercial centers may experience a competition for limited parking resources. Ultimately, residential parking permit districts will result in the creation of more off-street parking to compensate for the lack of on-street spaces. Off-street parking, particularly in the form of surface parking lots, has been linked to a deterioration of the pedestrian and cyclist infrastructure. While this member only form of parking districts provides on-street parking for residents of the neighborhood, it can also result in negative outcomes. Residential parking permit district may counter neighborhood goals of vibrancy, pedestrian and cyclists' activity, and economic growth of nearby commercial centers (Manville & Shoup, 2004).

### **Residential Benefit Districts**

An alternative to residential parking permit district is residential benefit districts. This form of a parking district blends residential parking permits with metered on-street parking. Residents are still able to purchase a decal that identifies them as a member of the neighborhood and allows them to park for free on designated streets. Residential benefit districts also make room for visitors through applying metered on-street parking closer to commercial activity

(Shoup, 1994). Revenue generated from metered parking within a parking benefit district is typically earmarked for projects directly in the district where the revenue is generated (Kolozsvari & Shoup, 2003). Such projects may include infrastructure enhancements such as sidewalk improvements, bike lanes, burying utility poles, beautification projects, and other projects deemed desirable to the district. Unlike residential permit parking districts that have residential only restrictions, parking benefit districts can be implemented in areas with a mixture of commercial and residential uses (Shoup, 1994). All users of the parking system, including residents of the district, are required to follow time limitations on streets with metered parking. This is essential to preventing long-term parking. It also assists with stimulating parking turnover and additional revenue generation (Shoup, 2006).

Parking benefit districts allow residents to benefit from revenue generated by their membership fees and from payments of visitors that utilize on-street parking facilities. Unlike residential parking permit districts, parking benefit districts help to stimulate economic activity within the area (Kolozsvari & Shoup, 2003). On-street parking remains available to both residents and visitors, which facilitates commercial activity in the area. Because on-street parking requires payment, people visiting the area will park, shop, and leave the area; making way for new customers for commercial businesses (Caicedo, 2012; Shoup, 2006). Time limitations associated with paid parking prevents residents from storing their cars at metered on-street parking spaces. There is less need for off-street parking because on-street parking remains available to both customers and residents. While off-street parking may be developed for commercial use, it is not intensified by residential parking restrictions, which helps to maintain the pedestrian infrastructure.

Parking districts, both in the form of residential parking permit districts and parking benefit districts can help to serve the aims and purposes of communities. Neighborhoods that are primarily residential can use residential permit parking districts to ensure that residents have an opportunity to park their cars and prevent spillover from nearby commercial centers. For neighborhoods with a mixture of commercial and residential uses, parking benefit districts can facilitate economic vitality while maintaining parking availability for residents. Parking benefit districts have the added benefit of generating revenue to make improvements to the area. The application of parking districts should be neighborhood specific and align with the aims and purposes of that neighborhood.

## CHAPTER 4

### A CASE STUDY OF PARKING IN ATLANTA

#### Background

Founded in 1837, the City of Atlanta has evolved from the terminus point of two railroads to the home of the 2019 Super Bowl. Based on U.S. Census Bureau estimates, Atlanta has a population of approximately 464,000 and a population density of 3,153 persons per square mile (United States Census Bureau, 2015). The City of Atlanta is about 133 square miles in size. The Central Business District (CBD) in the city of Atlanta is comprised of three major areas: Downtown, Midtown, and Buckhead. While all of these areas support the economic vitality of the city, this study focuses on Downtown and Midtown as the CBD of Atlanta. Due to a lack of available information on the parking conditions in Buckhead, this area was excluded from analysis. The remainder of this study is limited to the Downtown and Midtown areas as Atlanta's CBD. The central business district of Atlanta consists of approximately 4 square miles. The City of Atlanta experiences a daily influx of workers from the surrounding areas to the CBD (Hagen, 2016). On a typical business day, the CBD of Atlanta provides over 183,000 jobs for people throughout the Metro Atlanta region (Central Atlanta Progress, Inc., 2013; Midtown Alliance, 2015). About 65,000 of these jobs are located in the Midtown neighborhood (Midtown Alliance, 2015).

The City of Atlanta is a commuter oriented city and the primary mode of travel is single-occupancy vehicles (Freemark, 2010). According to a 2014 American Community Survey, more than 77% of work trips are made using single-occupancy vehicles (Winters, 2015). Additionally, approximately 10% are carpool trips, 3% are public transportation, 1% are walking, 0.2% bicycle, 1% are by other means, and 6% work at home (Winters, 2015). The 2015 Downtown Atlanta Travel Survey evaluated travel behavior for people who worked or went to school in the Downtown area. Based on these findings, 54% of respondents drove alone to their destination (UrbanTrans North America/The Scharipo Group, 2015). In addition, 83% of respondents that made midday trips drove alone while making those trips. While the CBD has a rich collection of transit options including heavy rail, streetcar, commuter bus, and local bus, many of the workers that travel to the CBD elect to use a private automobile. During the work day these automobiles are stored in parking spaces throughout the area. In order to accommodate automobile travel a large portion of the CBD is used for parking.

Based on recent population estimates, the CBD has nearly 38,000 residents (Central Atlanta Progress, Inc., 2013; Midtown Alliance, 2015). Over the past few years the CBD of Atlanta

has seen rapid growth and development. Undeveloped land has been converted from surface parking lots into residential towers. This conversion of land has resulted in increased density and provides additional travel options for CBD residents. While the residential experience continues to evolve, the impact of urban growth on parking, and parking's impact on urban growth, is not fully understood.

In 2013, Central Atlanta Progress and the Atlanta Downtown Improvement District commissioned a parking inventory assessment. This assessment was performed by Kimley-Horn, a national private consulting firm. Based on this evaluation, Downtown Atlanta was concluded to have nearly 93,000 off-street parking spaces and 2,100 on-street spaces (Central Atlanta Progress/Atlanta Downtown Improvement District, 2014). Similarly, in 2014 Midtown Alliance and the Midtown Improvement District commissioned a parking inventory and assessment. This assessment was also performed by Kimley-Horn. Based on the 2014 assessment, Midtown was concluded to have nearly 63,090 off-street parking spaces and 1,705 on-street spaces (Midtown Alliance, Inc., 2015). According to these findings, the central business district of Atlanta had a parking stock of 159,895 spaces. This figure applies to the parking stock available in 2014. However, with continuous growth in the central business district of Atlanta this figure has changed. The overwhelming majority of parking is provided at off-street parking facilities. Off-street parking represented nearly 98% of the parking stock in the central business district, whereas on-street parking only represented 2% of the parking stock.

This case study evaluates parking conditions in the Downtown and Midtown areas Atlanta, GA. The study area is comprised of the land in the Downtown and Midtown Improvement Districts (See Figures 4.1 and 4.2). This geographic location was selected as the study area to allow for comparison between the current parking evaluation and previous parking assessments. While the Buckhead area is a major location for business in the city of Atlanta, it was excluded from this assessment because of its geographic separation from the Downtown and Midtown areas. In addition, parking data for this area was not available at the time of this assessment. Evaluation of the parking conditions in Buckhead should be conducted to enhance the understanding of parking conditions in the CBD of Atlanta.

This study evaluated the current parking conditions of the central business district of Atlanta. Downtown parking was assessed during the 2015 Parking Inventory Update conducted while serving as the Transportation and Sustainability Intern for Central Atlanta Progress, Inc. Parking in Midtown was assessed through a review of the 2015 Midtown Parking Assessment and Action Plan. The 2016 Midtown Parking Review compared previously reported parking

conditions to existing conditions. This review used data provided by Kimley-Horn and Midtown Alliance. Evaluation was conducted using on-site inspection and aerial photography.

Additional evaluation was conducted for park-for-hire parking facilities. According to the City of Atlanta, a park-for-hire is any facility for the parking of motorized vehicles, for which service or facility the operator thereof charges a fee (Atlanta City Council - Transportation Committee, 2003). Assessment was conducted for recent developments in which surface parking was converted to developed land. Evaluation of parking in Atlanta's CBD is categorized into public parking and accessory parking facilities. As defined by Kimley-Horn: "Public parking is defined as: parking, while located on a private property that can be used by anyone, whether they stay on site or walk off site. Accessory parking is defined as: parking that serves the specific uses for a given site" (Midtown Alliance, Inc., 2015). To provide consistency across parking evaluations, these definitions have been adopted for this assessment.

### **Methodology**

The research conducted for the case study of parking in Atlanta consisted of four parts. Firstly, the 2015 Downtown Parking Inventory Update was conducted in conjunction with Central Atlanta Progress, Inc. This parking inventory was used to assess parking in the Downtown neighborhood. Secondly, the 2016 Midtown Parking Review was conducted to evaluate current parking conditions in Midtown Atlanta. Comparison between current parking conditions and previous parking assessments was performed to identify changes and highlight development patterns. The third part of the case study was an assessment of tourism in the central business district. Lastly, a projection of parking based on business as usual and decreased parking rates, was conducted to display how parking may change in the Atlanta area.

#### **2015 Downtown Parking Inventory Update**

In 2015, Central Atlanta Progress, Inc. conducted a parking inventory update of park-for-hire facilities in the Downtown neighborhood of Atlanta, Georgia. This inventory built upon the 2007 Parking Action Plan and the 2014 Parking Inventory Assessment conducted by Central Atlanta Progress, Inc. (Central Atlanta Progress/Atlanta Downtown Improvement District, 2007; Central Atlanta Progress/Atlanta Downtown Improvement District, 2014). To gather information on park-for-hire facilities in the Downtown neighborhood, a survey tool was developed to conduct on-site inventory assessments. The survey tool utilized for the 2015 Downtown Parking Inventory Update can be found in the Appendix 1. This survey contained questions related to

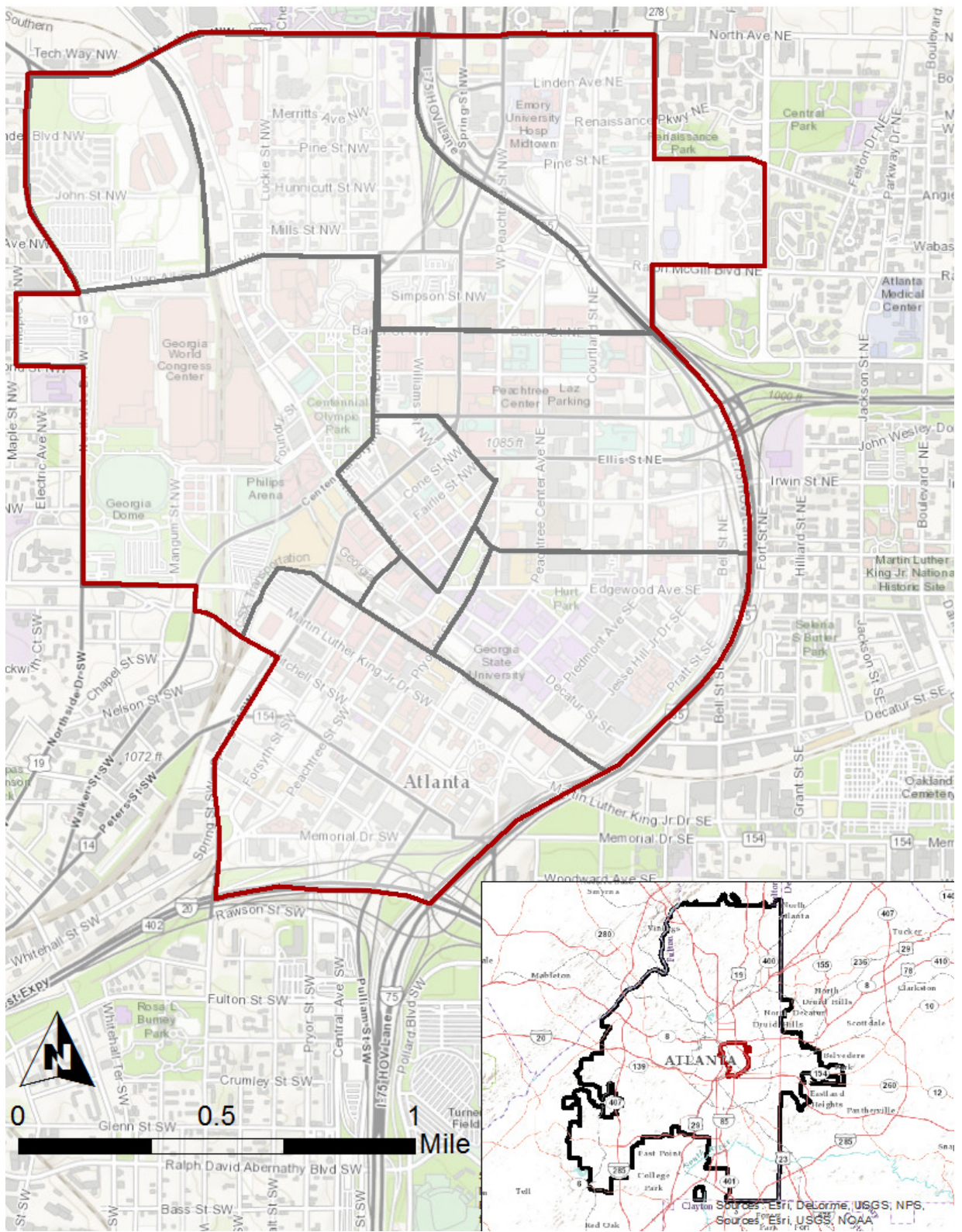


Figure 4.1. Downtown Atlanta Study Area



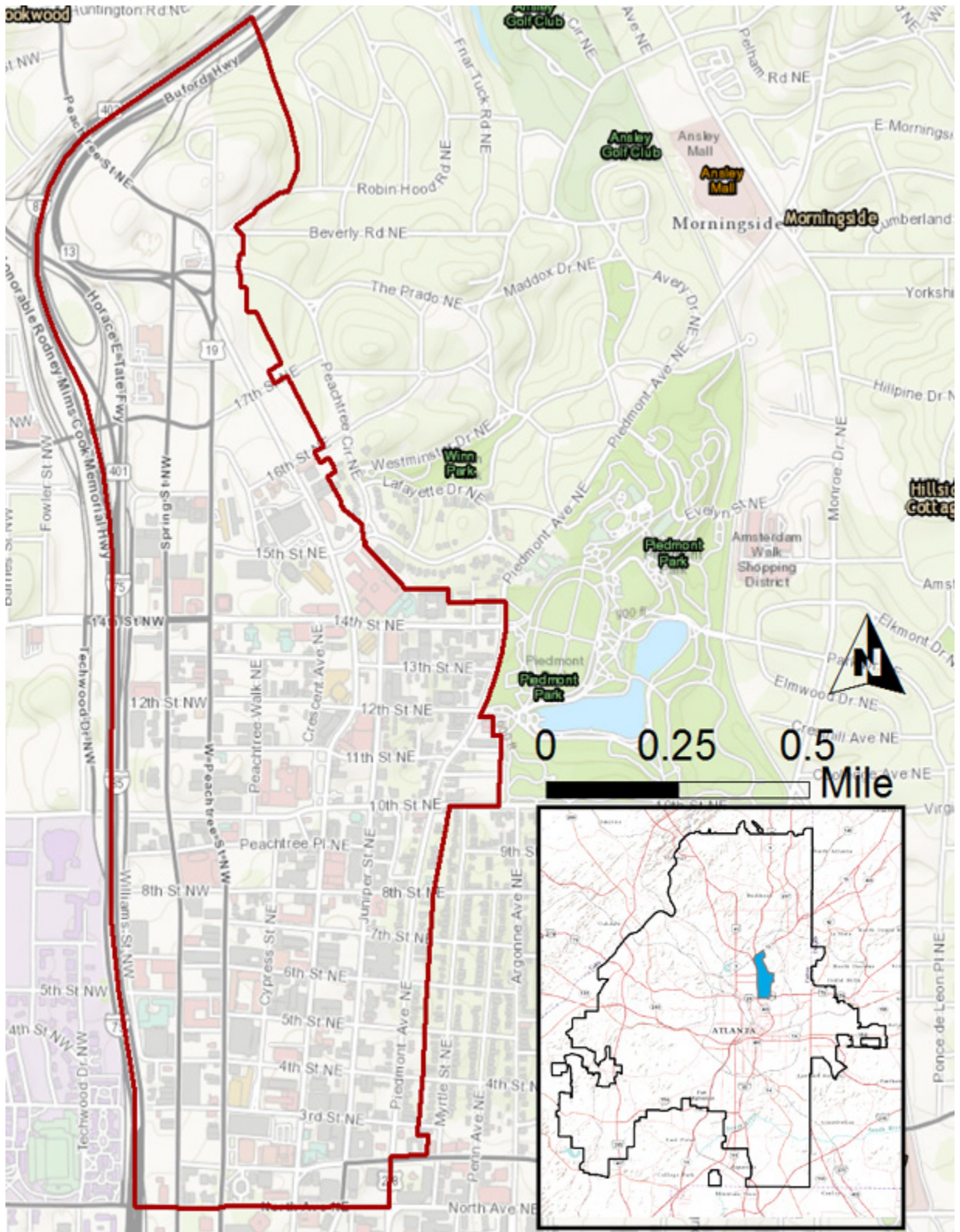


Figure 4.2. Midtown Atlanta Study Area

the location of each park-for-hire facility, parking operator, payment rates, collection methods, parking capacity, observed parking occupancy at time of inventory, and amenities provided at a parking facility. Amenities evaluated included: spaces for persons with varying capabilities, bicycle parking, electric vehicle charging stations, and carpool dedicated spaces. Inventory of park-for-hire facilities were primarily conducted between 10:00 am and 2:00 pm. All inventory assessments were conducted during the Monday to Friday business week. Inventories were not conducted on days when special events occurred in the Downtown area. Data collected during this inventory was entered into a MS Excel spreadsheet and a CityLight central database. The CityLight database was then incorporated into the Atlanta Public Parking Map on the Central Atlanta Progress website.

To further display the data collected during the 2015 Downtown Parking Inventory Update, parking facilities were paired with their geographic location. Shapefiles for park-for-hire facilities were created using Google Maps and ArcGIS. Additional shapefiles for impervious surface parking in the City of Atlanta were obtained from the City of Atlanta GIS repository (City of Atlanta, 2015). These initial shapefiles were limited to the Downtown neighborhood and analyzed by district. The size and shape of impervious surface parking facilities were compared to the corresponding size of parking facilities identified through satellite imagery. Shapefiles were adjusted to match the image seen through satellite imagery and re-evaluated for their area. Based on the initial file obtained from the City of Atlanta GIS repository, structured parking facilities were not included in the impervious surface parking shapefile. These facilities were added to the shapefile layer. Satellite imagery and Google Maps were used to determine the size and number of stories of the structured parking facilities. After the shapefiles were adjusted to better reflect the real world scenario, the size and structure of the accessory parking facility was used to estimate the number of spaces at each facility.

The square footage of each facility was multiplied by the number of stories of parking that facility provided. This product was then divided by 330 square feet, the average size per parking space when aisles needed for circulation within a parking lot are included as a part of each parking space (Shoup, 2005). This calculation yielded an estimated number of parking spaces that could be provided at a parking facility. To further evaluate the average square footage of a parking space in Downtown Atlanta, parking facilities with a known number of spaces were used to determine how the square footage per space at these facilities compared to the 330 square feet used as an estimate. Figure 4.3 shows the distribution variation of square footage used to provide a single parking space. Eighty-nine surface parking lots with a known

geographic footprint were evaluated. The most common square footage per parking space was 450-459 square feet, whereas the average size per parking space was 468 square feet. To reconcile the established square footage per parking space with the most frequently observed square footage per space in Downtown Atlanta, the center point between 330 square feet and 450 square feet was selected as the square footage per space. Parking capacity at accessory parking facilities was estimated using 390 square feet per parking space.

### **2016 Midtown Parking Review**

To evaluate the current parking conditions in Midtown Atlanta, data from the 2015 Midtown Parking Assessment and Action Plan was reviewed and updated to reflect recent developments. Through a combination of satellite imagery and on-site assessment, previous parking conditions were compared to existing conditions. Shapefiles utilized in the 2015 Midtown Parking Assessment and Action Plan were updated to reflect real world conditions. The Midtown Alliance Development Tour website was used to identify recently completed developments and ongoing construction project (Midtown Alliance, Inc., 2016). Aerial photograph was used to confirm the location of parking facilities and development projects. To evaluate the changing parking conditions in Midtown Atlanta, Special Administrative Permits were reviewed for development projects that converted surface parking lots to future land uses. In addition, the 2014 Downtown Parking Inventory Assessment and the 2015 Midtown Parking Assessment had overlapping geographical analysis. To avoid duplicative counting of parking facilities, all parking facilities south of North Avenue were considered to be a part of the Downtown area. This resulted in lower parking counts in Midtown Atlanta when compared to the 2015 Midtown Parking Assessment.

### **Tourism Assessment**

Parking facilities associated with the Tourism and Hotel Industry (THI) were subset during the parking analysis. These facilities were identified based on hotels, special event locations, and major attractions identified on the Central Atlanta Progress, Inc. and Midtown Alliance websites. Attributes of THI parking facilities were assessed to determine the number of parking spaces provided in the CBD for tourism. The geographic location of THI parking facilities was also assessed to display their location in the CBD.

### **Parking Projections**

Based on existing conditions in the Atlanta area, an evaluation of future parking con-

ditions was conducted. Projections were conducted for 2020, 2030, and 2040. To project the number of active vehicles in the City of Atlanta and the 10-County Metro Atlanta region, vehicle ownership rates of 1.3 vehicles per household and 1.8 vehicles per household were utilized, respectively. Atlanta Regional Commission population and household projections were used as a basis of future growth. Vehicle per household rates were multiplied by the projected number of households in the City of Atlanta and 10-County Metro Atlanta region. Based on this calculated number of vehicles, parking rates of two, three, and four spaces per vehicle were evaluated to show the growth of parking with population growth. This was classified as the business as usual approach and did not reflect any changes to the rate of vehicle ownership. To project decreases in the parking supply, lower rates of vehicle ownership were used to calculate the number of parking spaces need to accommodate vehicles. Ownership rates of 1, 0.75, and 0.5 vehicles per household was assessed. Once again, the growth of parking spaces was assessed for two, three, and four spaces per vehicle.

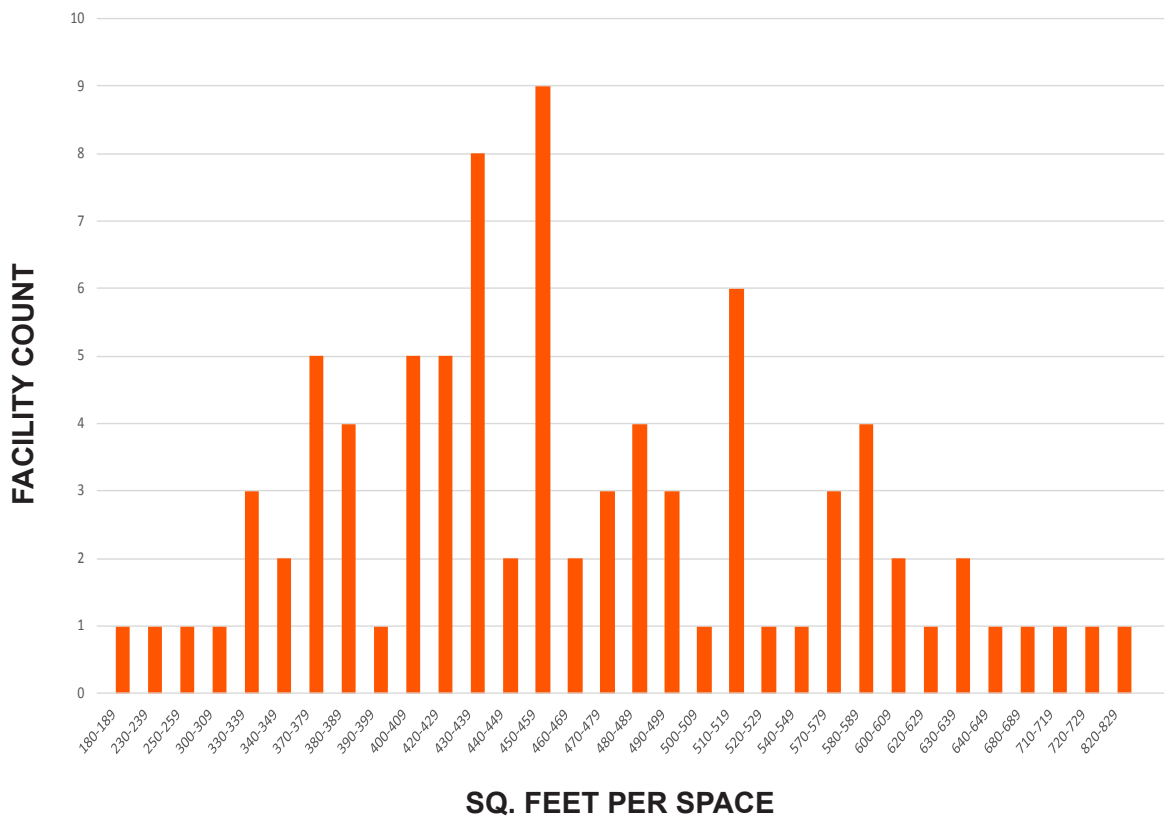


Figure 4.3. Square Feet per Parking Space in Atlanta, GA

## Results

In total, this study identified approximately 155,000 parking spaces in the CBD of Atlanta. These parking spaces are comprised of 151,000 (97.5%) off-street parking spaces and about 4,000 (2.5%) on-street spaces. The study area was comprised of 1,954 acres of land. Within the study area approximately 524 land acres, or 27%, is used to provide off-street parking. While 27% may initially seem like a small amount of parking, the total land dedicated to parking is more than double the amount of green space in the CBD. The 524 land acres used for off-street parking does not reflect the additional land dedicated to on-street parking or multi-level parking. In the Downtown and Midtown Atlanta, parking makes up 29 percent and 23 percent of the land use, respectively. As previously stated, this percentage of land only considers the footprint of parking and does not reflect the vertical space used for parking. The parking spaces provided are intended to serve residents, employees, commercial customers, and visitors (i.e., a much larger population than the CBD population of 38,000 persons). The number of parking spaces provided is about four times greater than the residential population. Table 4.1 provides a breakdown of the parking capacity in the CBD of Atlanta.

Table 4.1. Parking Capacity in the CBD of Atlanta, GA

Parking Type	Downtown	Midtown	CBD Total (%)
# of Facilities	403	364	767
Off-street Accessory	47,381	26,098	73,479 (47.4%)
Off-street Public Access	48,086	29,602	77,688 (50.1%)
On-Street	2,100	1,705	3,805 (2.5%)
<b>Total (%)</b>	<b>97,567 (63%)</b>	<b>57,405 (37%)</b>	<b>154,972</b>

### 2015 Downtown Parking Inventory Update

According to the City of Atlanta, a park-for-hire is any facility used for the parking of motorized vehicles, for which service or facility the operator thereof charges a fee (Atlanta City Council - Transportation Committee, 2003). Amongst the 403 parking facilities in Downtown Atlanta, 195 (48%) have been identified as park-for-hire facilities. These 195 parking-for-hire facilities were assessed across the 9 districts in the Downtown neighborhood and comprise 65,675 parking spaces in the Downtown area. The average cost for parking was \$11.74 per day (\$1.47 per hour). Parking cost ranged from \$2.00 per day to \$33.00 per day.

Data from the 2015 Parking Inventory Update was associated with the geolocation of park-for-hire facilities using ArcGIS. Each parking facility was grouped within their respective districts. Figures 4.4 to 4.13 show the parking for Downtown Atlanta and each of the 9 districts.

All off-street parking is displayed in these maps to provide a full assessment of parking in the CBD. Parking facilities are categorized by access and facility type. These categories include: Accessory (Private) Structure, Accessory (Private) Surface Lot, Publicly Accessible Structure, and Publicly Accessible Surface Lot. These categories are used for easy comparison between the 2015 Parking Inventory Assessment and previous assessments conducted by Kimley-Horn. It is important to note that park-for-hire facilities can have accessory or public access.

Occupancy was assessed at 132 park-for-hire facilities. The average observed occupancy rate was 59%, with occupancy rates ranging from 2% to 101%. Figure 4.14 provides a histogram of occupancy rates at park-for-hire facilities. Occupancy rates have been divided into three categories, underutilized, ideal utilization, and effective capacity. Underutilized facilities have an occupancy rate of <60%. Ideal utilization ranges between 60% and 85% occupancy. Effective capacity is a parking utilization of 85% or above. Figure 4.15 shows parking locations as a factor of occupancy.

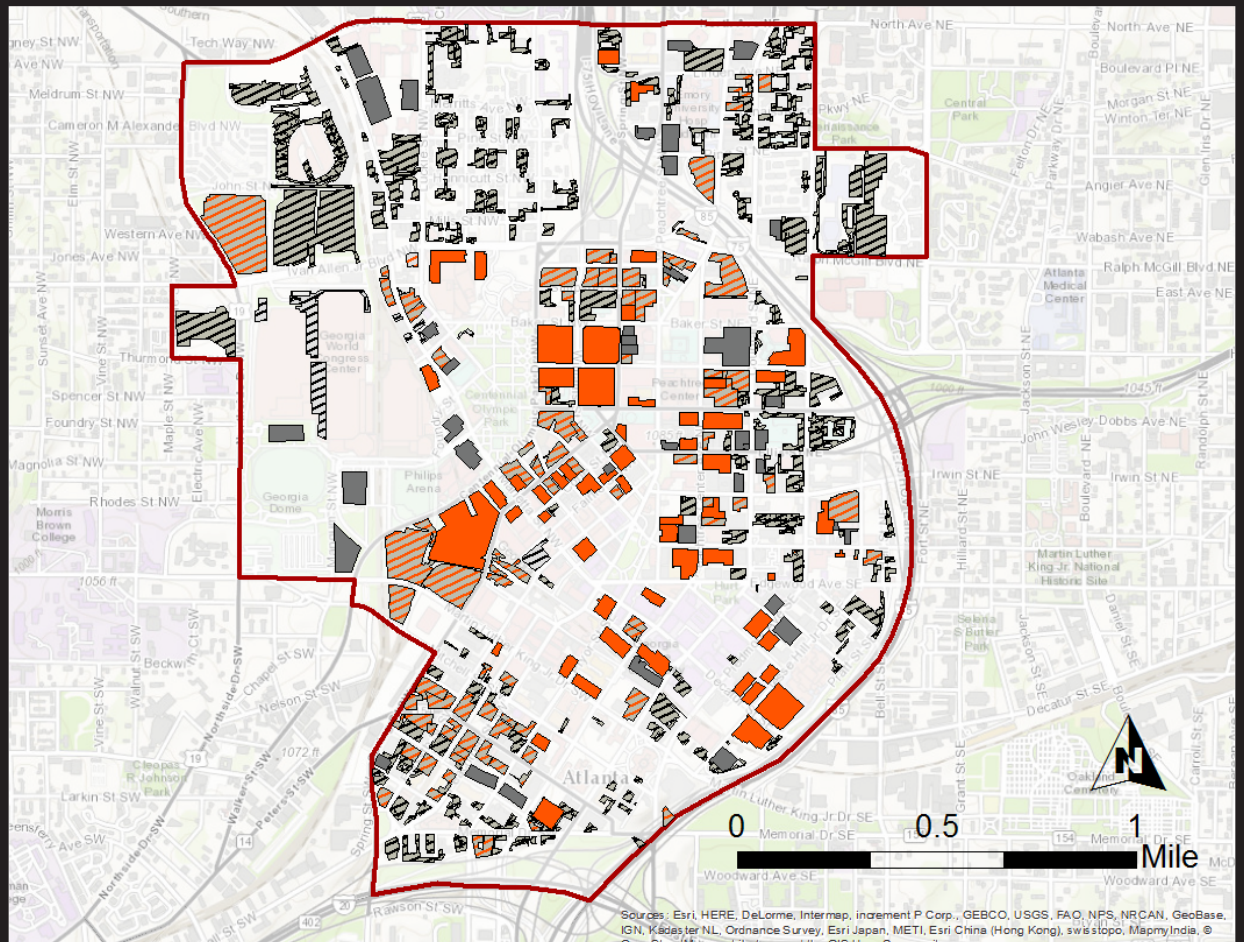
Based on the 2015 Parking Inventory Update and assessment of accessory parking, there are currently 95,467 off-street parking spaces in the Downtown area. This is a net increase of 2,467 parking spaces (1%) when compared to the 2013 parking assessment. Parking spaces are spread across 148 public access parking facilities and 234 accessory parking facilities. Tables 4.2 and 4.3 provide a breakdown of the distribution of parking spaces across facility type.

Table 4.2. Off-street Parking Capacity by District in Downtown Atlanta, GA

District	Public Access Spaces	Accessory Spaces	Total Spaces
Centennial Place	2,516	6,084	8,600
Fairlie-Poplar	4,793	298	5,091
Five Points	498	22	520
Georgia State University	11,978	2,154	14,132
Luckie-Marietta	6,981	5,213	12,194
Northyards	1,284	2,507	3,791
Peachtree Center	12,534	4,347	16,881
SONO	1,364	7,785	9,149
South Downtown	5,433	4,359	9,249
Falcons Stadium*	-	15,317	15,317
<b>Downtown Total</b>	<b>47,381</b>	<b>48,086</b>	<b>95,467</b>

\*Falcons Stadium parking facility is currently under construction. Completion of this parking facility may include surface parking lots on the current Georgia Dome site.

# OFF-STREET PARKING INVENTORY DOWNTOWN



### QUICK FACTS: TOP 10

DOWNTOWN	1,256 ACRES
PARKING ACRES	364 ACRES
PARKING PERCENTAGE	29 PERCENT
AVERAGE PARKING COST	\$11.74 PER DAY
AVERAGE OCCUPANCY	59 PERCENT
PUBLIC ACCESS PARKING	148 FACILITIES
PUBLIC ACCESS SPACES	47,381 SPACES
ACCESSORY PARKING	234 FACILITIES
ACCESSORY SPACES	48,086 SPACES
LARGEST OPERATOR	LAZ PARKING

### LEGEND: PARKING TYPE





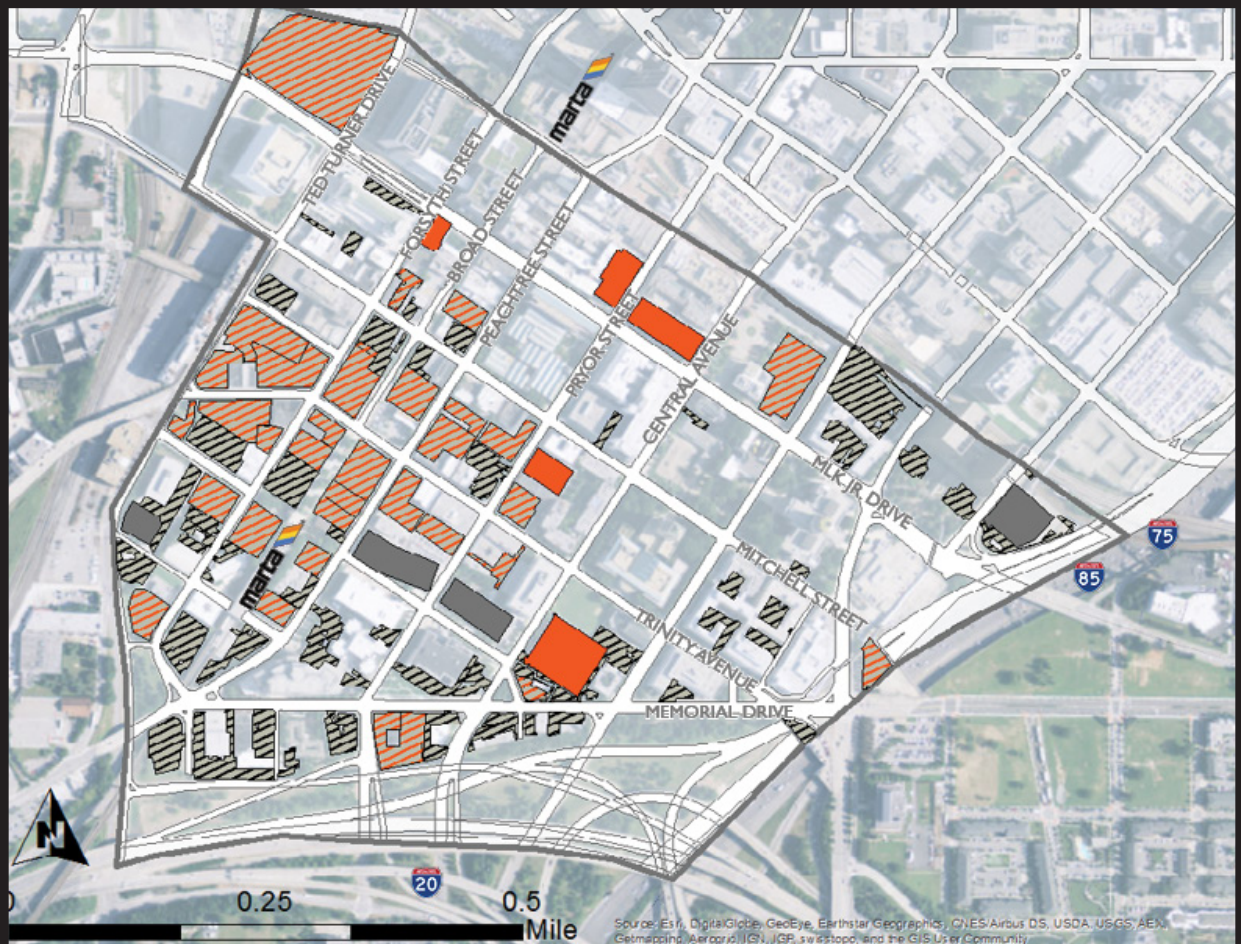
	ACCESSORY (PRIVATE) STRUCTURE
	ACCESSORY (PRIVATE) SURFACE LOT
	PUBLICLY ACCESSIBLE STRUCTURE
	PUBLICLY ACCESSIBLE SURFACE LOT

Figure 4.4. Parking Facilities in Downtown Atlanta

# OFF-STREET PARKING INVENTORY SOUTH DOWNTOWN



### QUICK FACTS: TOP 10

SOUTH DOWNTOWN	307 ACRES
PARKING ACRES	55 ACRES
PARKING PERCENTAGE	18 PERCENT
AVERAGE PARKING COST	\$7.04 PER DAY
AVERAGE OCCUPANCY	54 PERCENT
PUBLIC ACCESS	37 FACILITIES
PUBLIC ACCESS SPACES	5,433 SPACES
ACCESSORY PARKING	61 FACILITIES
ACCESSORY SPACES	3,816 SPACES
LARGEST OPERATOR	PARKING COMPANY OF AMERICA

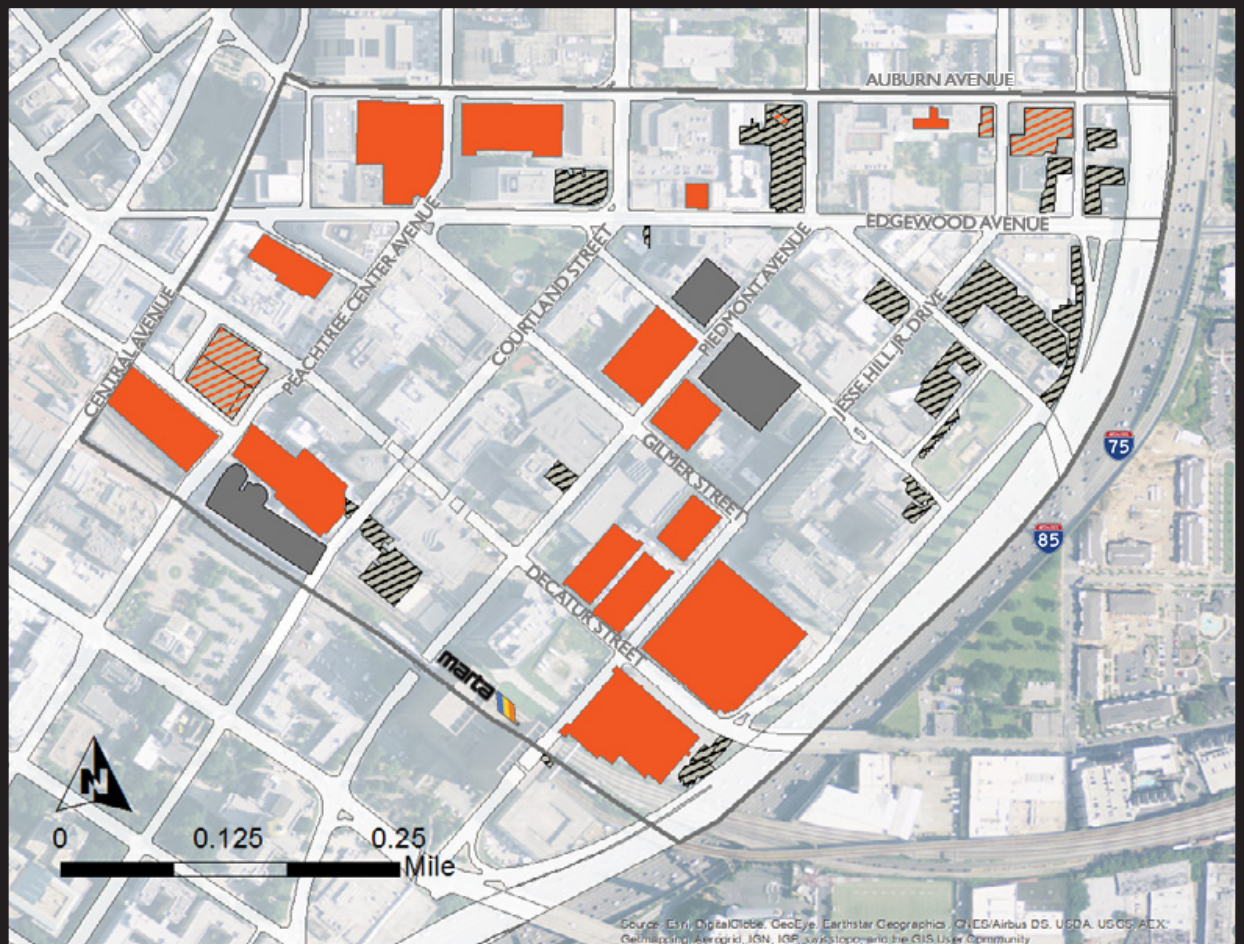
### LEGEND: PARKING TYPE

- ACCESSORY (PRIVATE) STRUCTURE
- ACCESSORY (PRIVATE) SURFACE LOT
- PUBLICLY ACCESSIBLE STRUCTURE
- PUBLICLY ACCESSIBLE SURFACE LOT

Figure 4.5 South Downtown Parking Profile



# OFF-STREET PARKING INVENTORY GEORGIA STATE UNIVERSITY



### QUICK FACTS: TOP 10

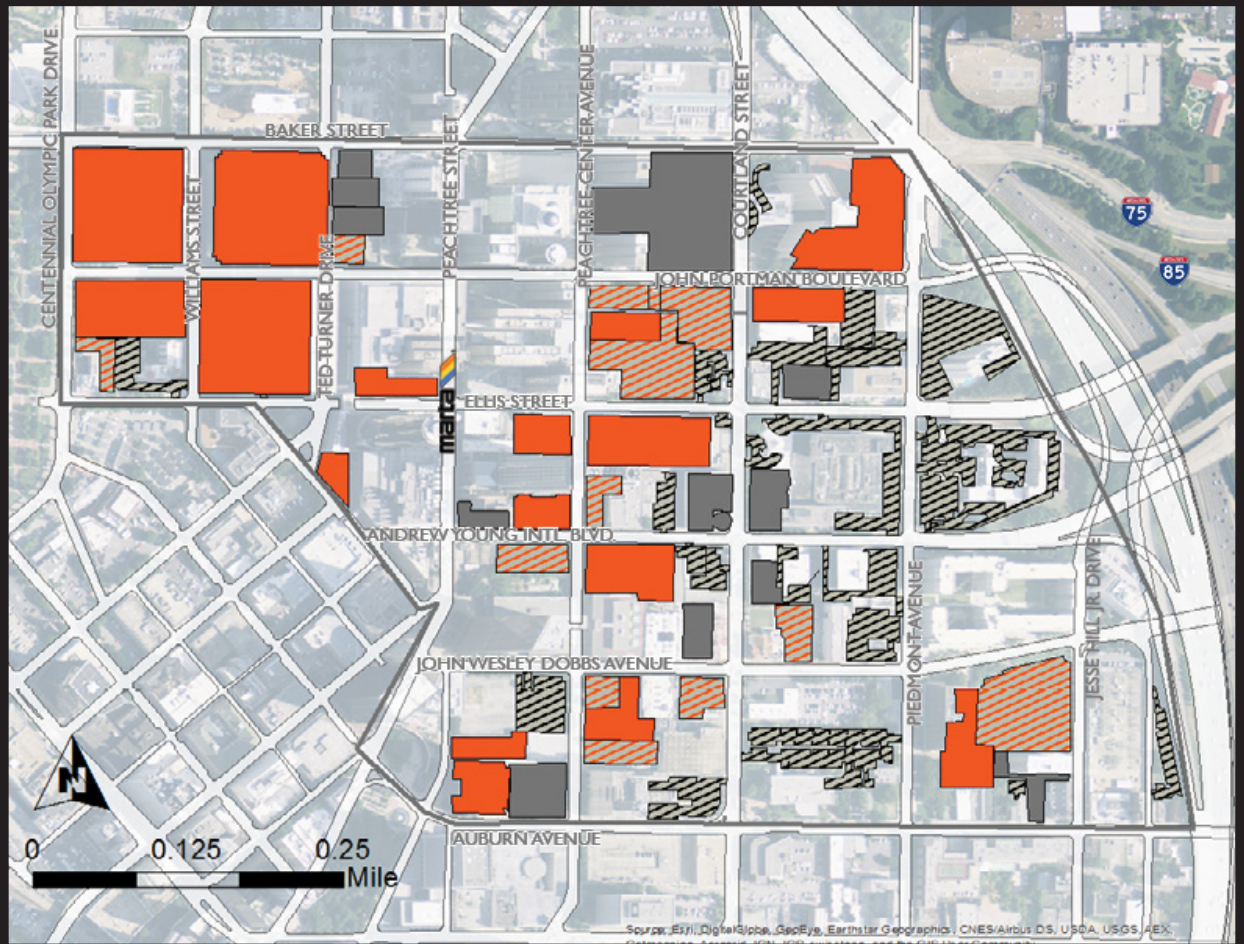
GEORGIA STATE	180 ACRES
PARKING ACRES	34 ACRES
PARKING PERCENTAGE	19 PERCENT
AVERAGE PARKING COST	\$8.30 PER DAY
AVERAGE OCCUPANCY	59 PERCENT
PUBLIC ACCESS PARKING	19 FACILITIES
PUBLIC ACCESS SPACES	11,978 SPACES
ACCESSORY PARKING	20 FACILITIES
ACCESSORY SPACES	2,154 SPACES
LARGEST OPERATOR	GEORGIA STATE UNIVERSITY

### LEGEND: PARKING TYPE

	ACCESSORY (PRIVATE) STRUCTURE
	ACCESSORY (PRIVATE) SURFACE LOT
	PUBLICLY ACCESSIBLE STRUCTURE
	PUBLICLY ACCESSIBLE SURFACE LOT

Figure 4.6 Georgia State University Parking Profile

# OFF-STREET PARKING INVENTORY PEACHTREE CENTER



### QUICK FACTS: TOP 10

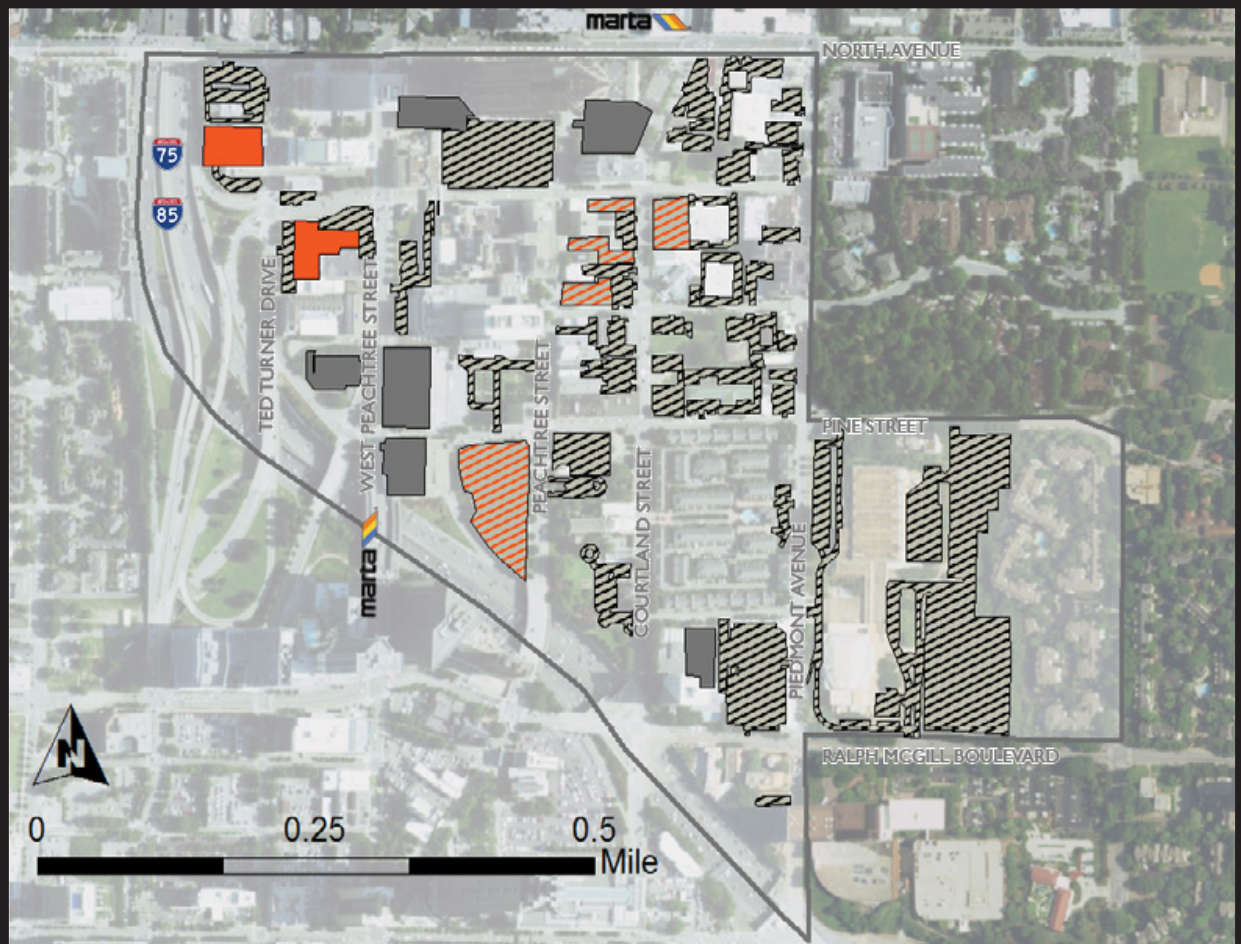
PEACHTREE CENTER	238 ACRES
PARKING ACRES	75 ACRES
PARKING PERCENTAGE	32 PERCENT
AVERAGE PARKING COST	\$16.48 PER DAY
AVERAGE OCCUPANCY	75 PERCENT
PUBLIC ACCESS PARKING	29 FACILITIES
PUBLIC ACCESS SPACES	12,534 SPACES
ACCESSORY PARKING	41 FACILITIES
ACCESSORY SPACES	4,347 SPACES
LARGEST OPERATOR	LANIER PARKING

### LEGEND: PARKING TYPE

	ACCESSORY (PRIVATE) STRUCTURE
	ACCESSORY (PRIVATE) SURFACE LOT
	PUBLICLY ACCESSIBLE STRUCTURE
	PUBLICLY ACCESSIBLE SURFACE LOT

Figure 4.7 Peachtree Center Parking Profile

# OFF-STREET PARKING INVENTORY SONO DISTRICT



## QUICK FACTS: TOP 10

SONO DISTRICT	190 ACRES
PARKING ACRES	31 ACRES
PARKING PERCENTAGE	16 PERCENT
AVERAGE PARKING COST	\$12.00 PER DAY
AVERAGE OCCUPANCY	54 PERCENT
PUBLIC ACCESS PARKING	7 FACILITIES
PUBLIC ACCESS SPACES	1,364 SPACES
ACCESSORY PARKING	46 FACILITIES
ACCESSORY SPACES	7,785 SPACES
LARGEST OPERATOR	EMORY UNIVERSITY HOSPITAL MIDTOWN

## LEGEND: PARKING TYPE





	ACCESSORY (PRIVATE) STRUCTURE
	ACCESSORY (PRIVATE) SURFACE LOT
	PUBLICLY ACCESSIBLE STRUCTURE
	PUBLICLY ACCESSIBLE SURFACE LOT

Figure 4.8 SONO District Parking Profile

# OFF-STREET PARKING INVENTORY NORTHYARDS DISTRICT



### QUICK FACTS: TOP 10

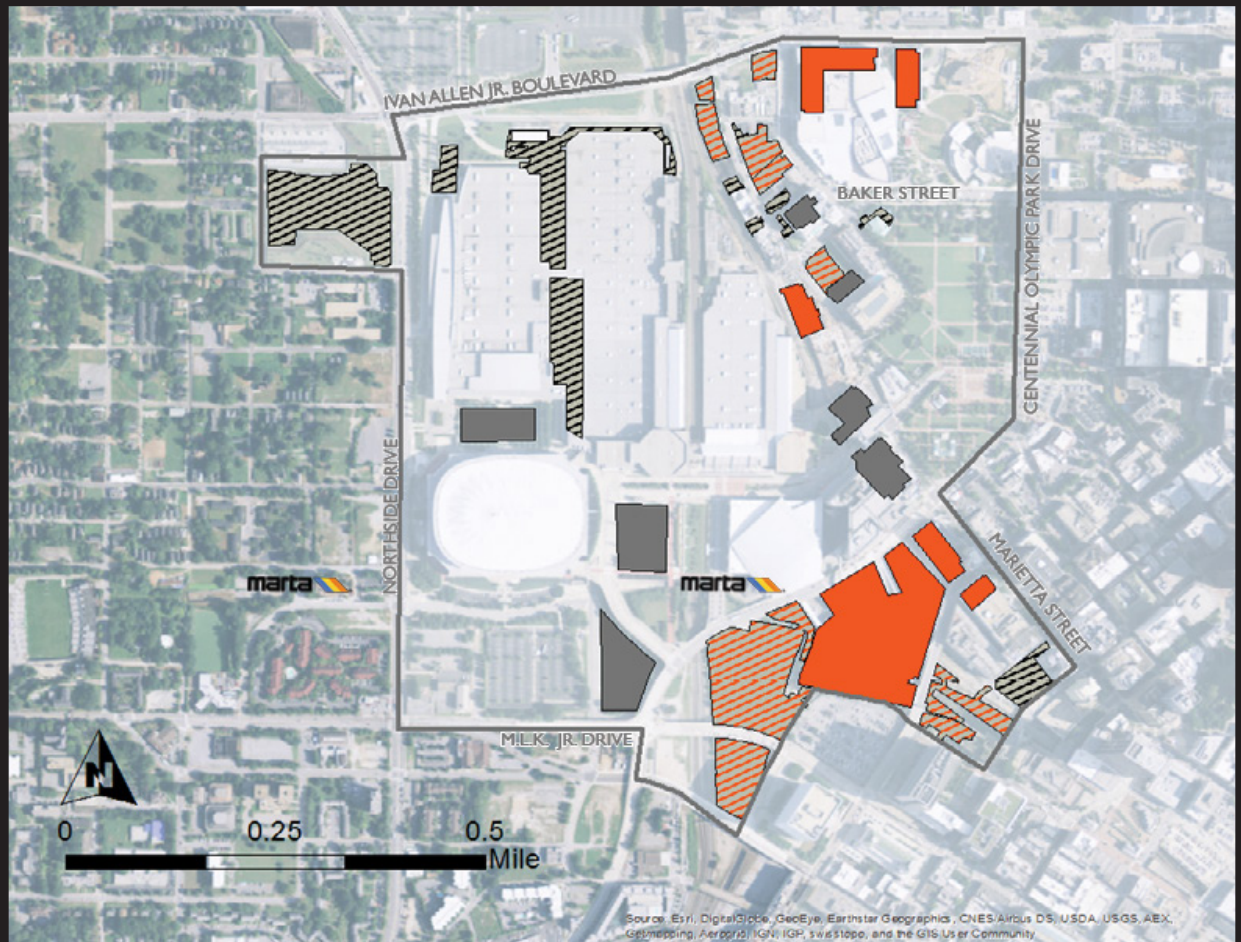
NORTHYARDS DISTRICT	138 ACRES
PARKING ACRES	46 ACRES
PARKING PERCENTAGE	33 PERCENT
AVERAGE PARKING COST	\$10.00 PER DAY
AVERAGE OCCUPANCY	UNDETERMINED
PUBLIC ACCESS PARKING	1 FACILITY
PUBLIC ACCESS SPACES	1,284 SPACES
ACCESSORY PARKING	3 FACILITIES
ACCESSORY SPACES	2,507 SPACES
LARGEST OPERATOR	GWCC/AAA PARKING

### LEGEND: PARKING TYPE

- ACCESSORY (PRIVATE) STRUCTURE
- ACCESSORY (PRIVATE) SURFACE LOT
- PUBLICLY ACCESSIBLE STRUCTURE
- PUBLICLY ACCESSIBLE SURFACE LOT

Figure 4.9 Northyards District Parking Profile

# OFF-STREET PARKING INVENTORY LUCKIE-MARIETTA DISTRICT



### QUICK FACTS: TOP 10

LUCKIE-MARIETTA	396 ACRES
PARKING ACRES	67 ACRES
PARKING PERCENTAGE	17 PERCENT
AVERAGE PARKING COST	\$17.27 PER DAY
AVERAGE OCCUPANCY	35 PERCENT
PUBLIC ACCESS PARKING	15 FACILITIES
PUBLIC ACCESS SPACES	6,981 SPACES
ACCESSORY PARKING	19 FACILITIES
ACCESSORY SPACES	20,530 SPACES
LARGEST OPERATOR	GWCC/AAA PARKING

### LEGEND: PARKING TYPE





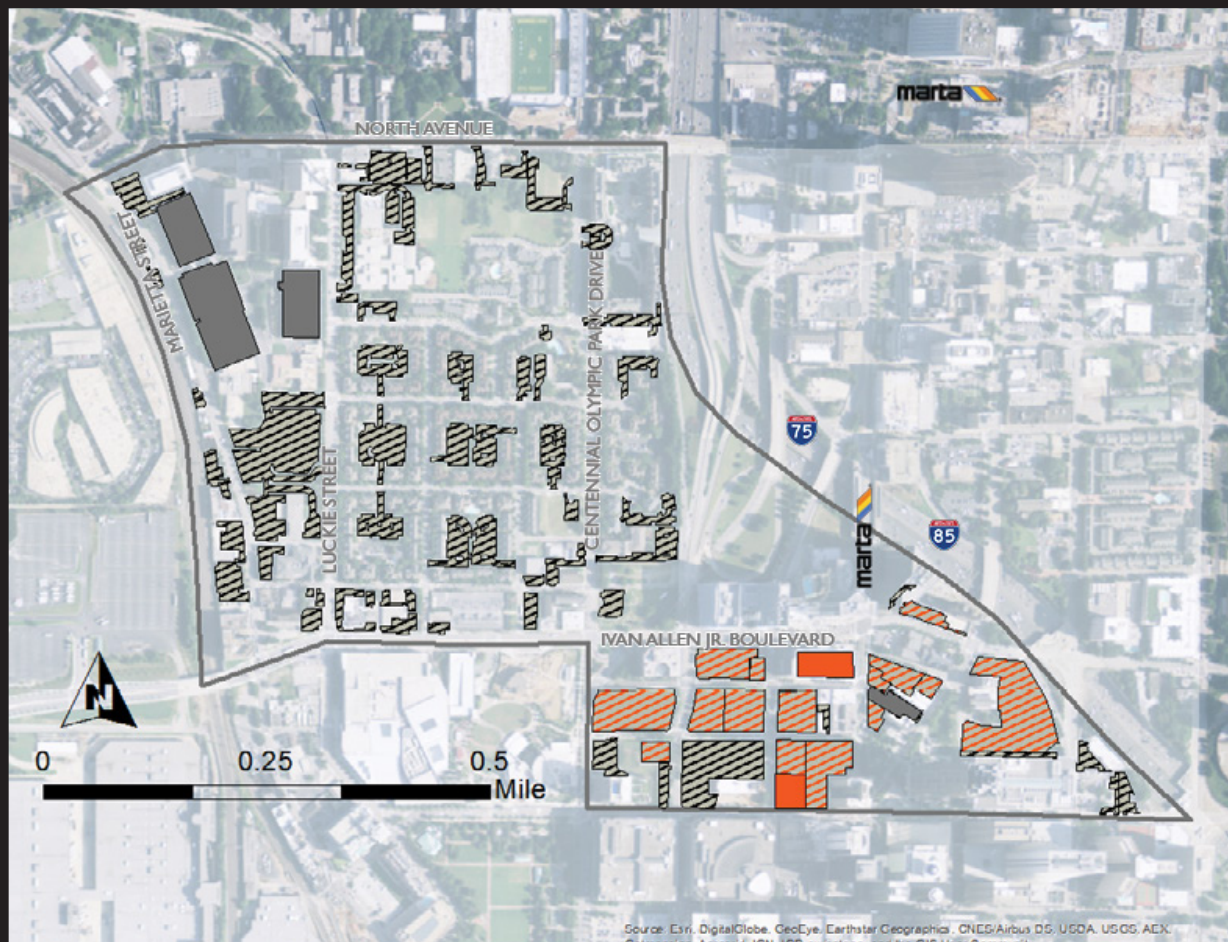
	ACCESSORY (PRIVATE) STRUCTURE
	ACCESSORY (PRIVATE) SURFACE LOT
	PUBLICLY ACCESSIBLE STRUCTURE
	PUBLICLY ACCESSIBLE SURFACE LOT

Figure 4.10 Luckie-Marietta District Parking Profile

# OFF-STREET PARKING INVENTORY CENTENNIAL PLACE



### QUICK FACTS: TOP 10

CENTENNIAL PLACE	313 ACRES
PARKING ACRES	52 ACRES
PARKING PERCENTAGE	17 PERCENT
AVERAGE PARKING COST	\$11.33 PER DAY
AVERAGE OCCUPANCY	70 PERCENT
PUBLIC ACCESS PARKING	17 FACILITIES
PUBLIC ACCESS SPACES	2,516 SPACES
ACCESSORY PARKING	62 FACILITIES
ACCESSORY SPACES	6,084 SPACES
LARGEST OPERATOR	PARKING COMPANY OF AMERICA

### LEGEND: PARKING TYPE



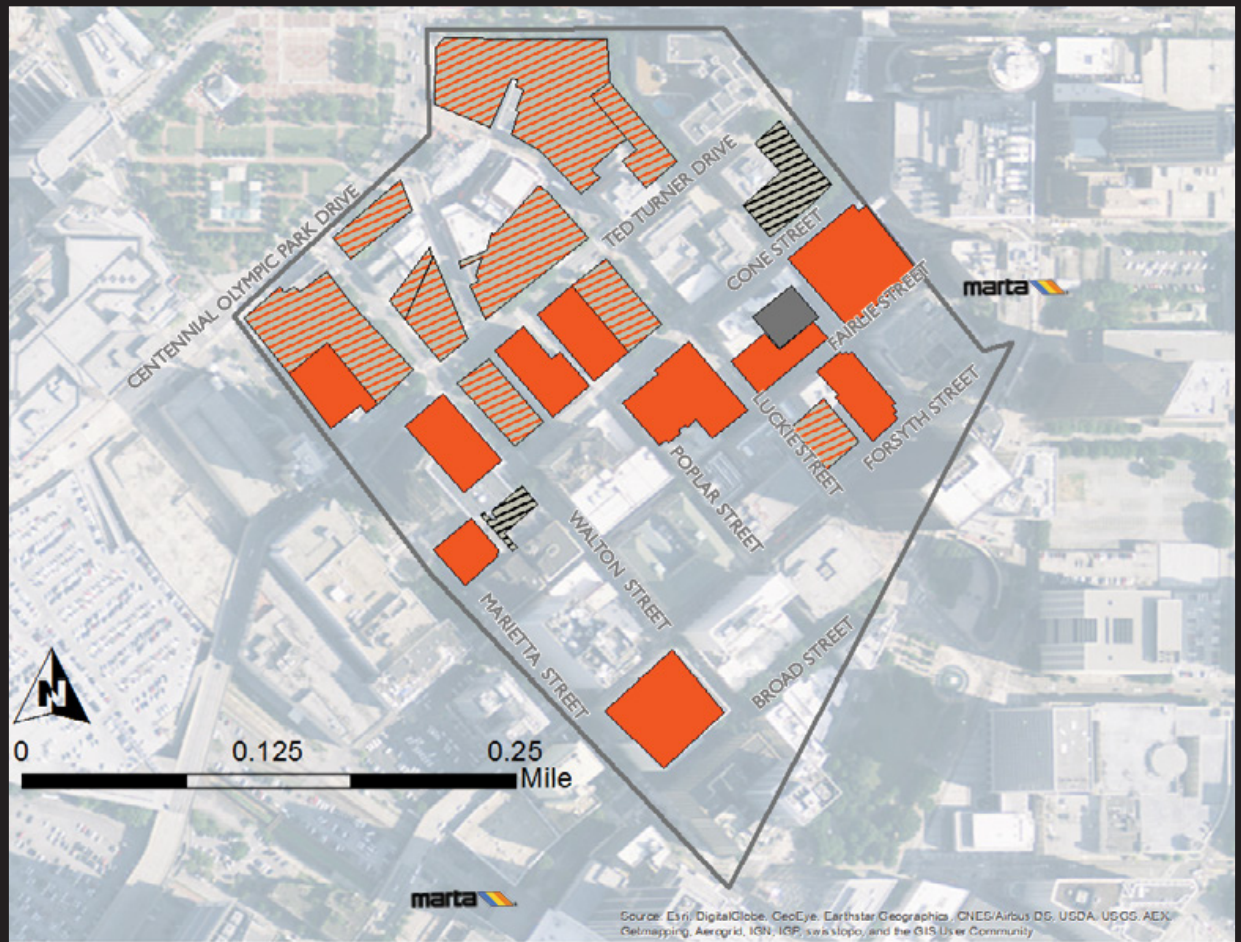
	ACCESSORY (PRIVATE) STRUCTURE
	ACCESSORY (PRIVATE) SURFACE LOT
	PUBLICLY ACCESSIBLE STRUCTURE
	PUBLICLY ACCESSIBLE SURFACE LOT

Figure 4.11 Centennial Place Parking Profile

# OFF-STREET PARKING INVENTORY

## FAIRLIE-POPLAR DISTRICT



### QUICK FACTS: TOP 10

FAIRLIE-POPLAR	62 ACRES
PARKING ACRES	18 ACRES
PARKING PERCENTAGE	29 PERCENT
AVERAGE PARKING COST	\$12.09 PER DAY
AVERAGE OCCUPANCY	58 PERCENT
PUBLIC ACCESS PARKING	20 FACILITIES
PUBLIC ACCESS SPACES	4,793 SPACES
ACCESSORY PARKING	3 FACILITIES
ACCESSORY SPACES	298 SPACES
LARGEST OPERATOR	LAZ PARKING

### LEGEND: PARKING TYPE





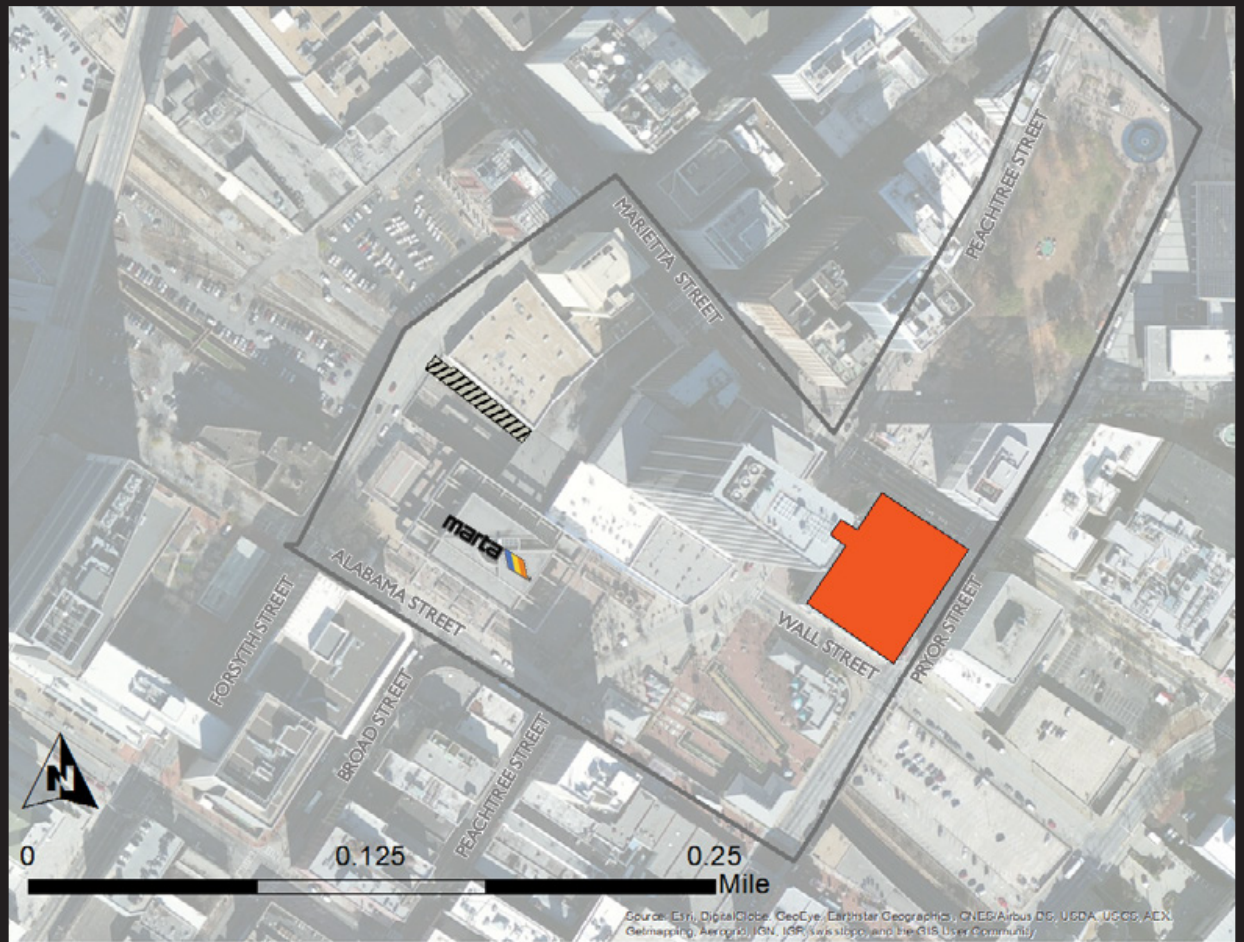
	ACCESSORY (PRIVATE) STRUCTURE
	ACCESSORY (PRIVATE) SURFACE LOT
	PUBLICLY ACCESSIBLE STRUCTURE
	PUBLICLY ACCESSIBLE SURFACE LOT

Figure 4.12 Fairlie-Poplar Parking Profile

# OFF-STREET PARKING INVENTORY FIVE POINTS



### QUICK FACTS: TOP 10

FIVE POINTS	28 ACRES
PARKING ACRES	1 ACRES
PARKING PERCENTAGE	4 PERCENT
AVERAGE PARKING COST	\$15.00 PER DAY
AVERAGE OCCUPANCY	65 PERCENT
PUBLIC ACCESS PARKING	1 FACILITY
PUBLIC ACCESS SPACES	498 SPACES
ACCESSORY PARKING	1 FACILITY
ACCESSORY SPACES	22 SPACES
LARGEST OPERATOR	LAZ PARKING

### LEGEND: PARKING TYPE





	ACCESSORY (PRIVATE) STRUCTURE
	ACCESSORY (PRIVATE) SURFACE LOT
	PUBLICLY ACCESSIBLE STRUCTURE
	PUBLICLY ACCESSIBLE SURFACE LOT

Figure 4.13 Five Points Parking Profile



Table 4.3. Off-street Parking Supply in Downtown Atlanta, GA

Facility Type	Total Facilities	Parking Spaces
Accessory Structure	38	33,275
Accessory Surface Lot	216	14,811
Publicly Accessible Structure	56	37,025
Publicly Accessible Surface Lot	93	10,356
<b>Total</b>	<b>403</b>	<b>95,467</b>

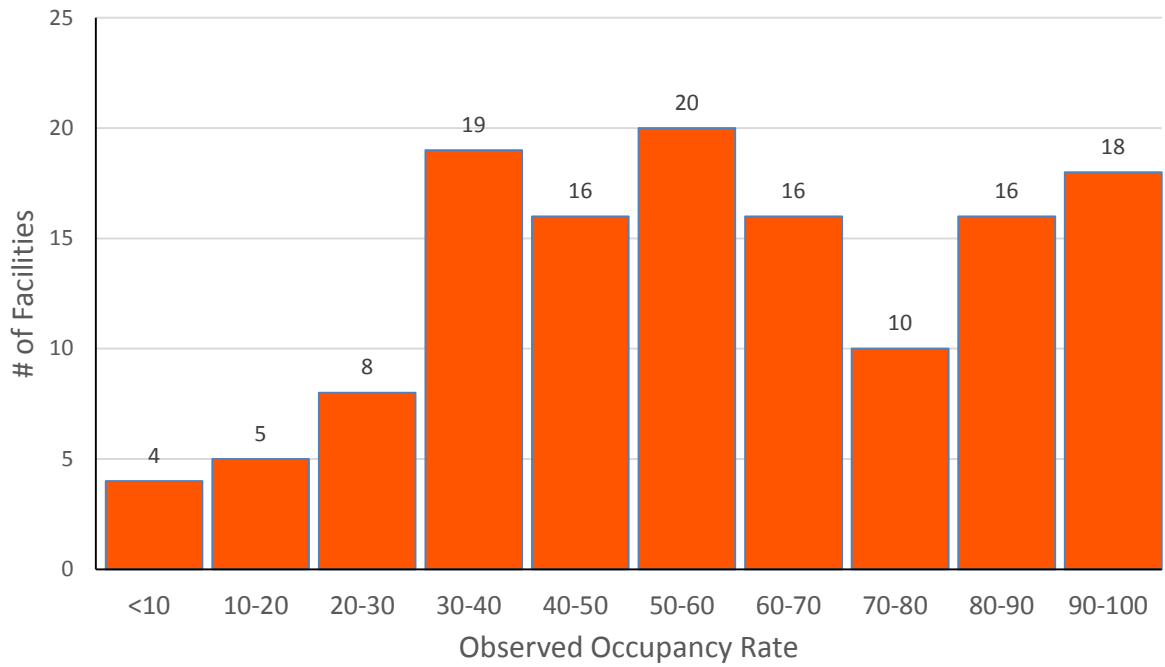
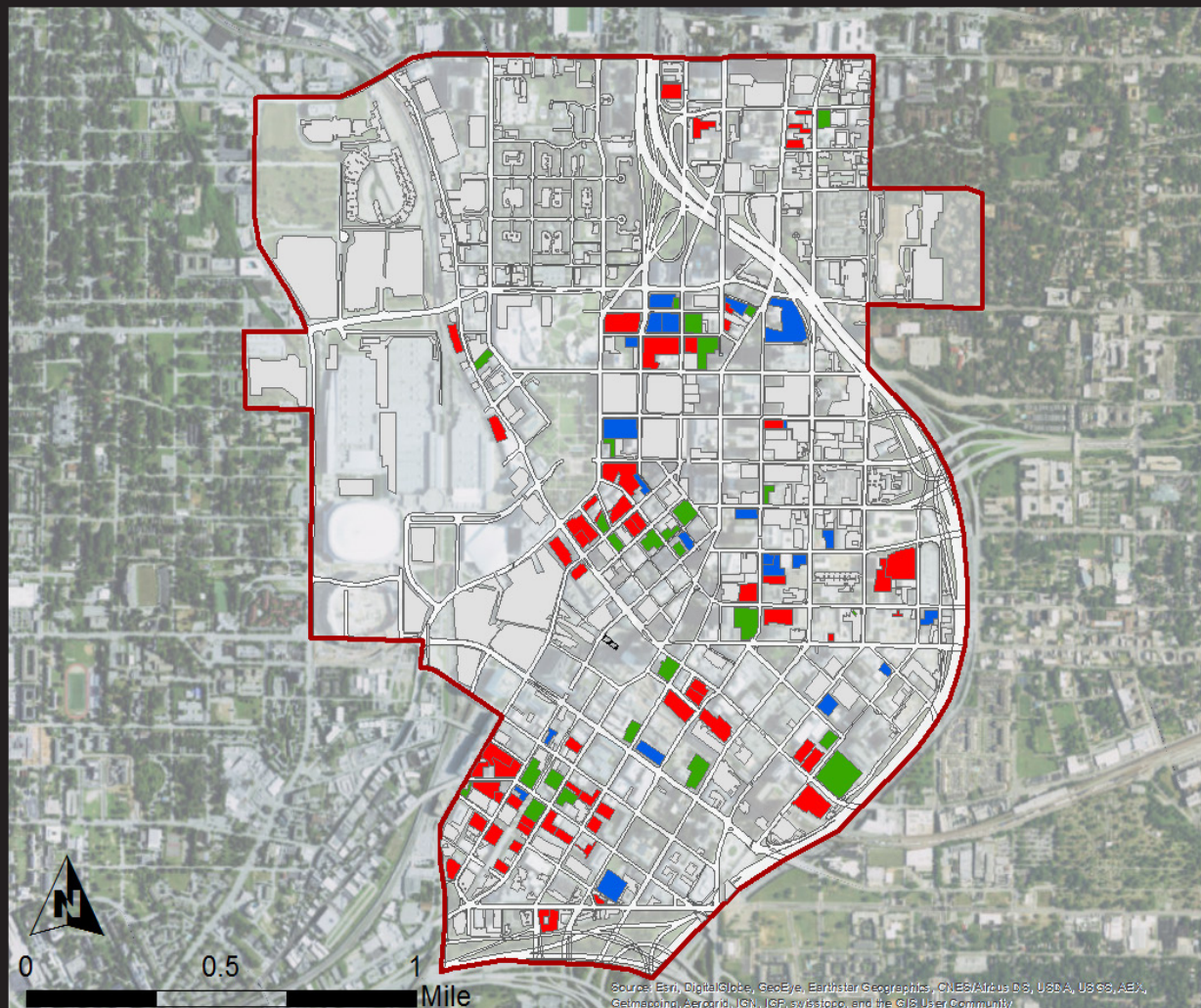


Figure 4.14. Occupancy Rates Observed at Park-For-Hire Facilities in Downtown Atlanta, GA

## OFF-STREET PARKING OCCUPANCY

# DOWNTOWN



### QUICK FACTS

PARKING FACILITIES ASSESSED	132 FACILITIES
UNDERUTILIZED	72 FACILITIES
IDEAL UTILIZATION	32 FACILITIES
EFFECTIVE CAPACITY	28 FACILITIES
AVERAGE OCCUPANCY	59% OCCUPANCY

### LEGEND: OCCUPANCY TYPE





	UNDERUTILIZED (<60%)
	IDEAL UTILIZATION (60%-85%)
	EFFECTIVE CAPACITY (>85%)
	STUDY AREA

Figure 4.15. Occupancy Observed at Park-For-Hire Facilities in Downtown Atlanta

## Midtown Assessment

In the 2014 Midtown Parking Assessment, 63,090 parking spaces were identified in the Midtown area. A comparison of the parking conditions in 2014 and 2016 was conducted to update the Midtown's parking profile. When combining the Downtown and Midtown assessments, an overlap of 46 parking facilities was identified. The overlapping parking facilities and parking spaces were removed from the 2016 Midtown parking count because they actually belong to the Downtown area. Hence, 55,698 off-street parking spaces were identified in Midtown Atlanta. Tables 4.4 and 4.5 provide a breakdown of the parking facilities in the 2016 Midtown Parking Review. Figures 4.16 to 4.18 show the location of parking facilities in the Midtown area. These maps were adapted from the Kimley-Horn 2015 Midtown Parking Assessment to reflect current conditions in the Midtown area.

Table 4.4. Off-Street Parking Inventory Update – 2000, 2014, and 2016

INVENTORY YEAR	SURFACE PARKING LOT	STRUCTURED PARKING DECK	TOTAL OFF-STREET
MIDTOWN PARKING AND TRANSIT PLAN 2000	16,270 (38%)	25,750 (61.3%)	42,020
MIDTOWN PARKING STUDY 2014	11,289 (17.9%)	51,801 (82.1%)	63,090
MIDTOWN PARKING REVIEW 2016	9,175 (16.4%)	46,525 (83.5%)	55,700

Table 4.5 Off-Street Surface and Structured, Public Access and Accessory Parking

ACCESSIBILITY	SURFACE LOTS	STRUCTURED DECKS	TOTAL FACILITIES
PUBLIC ACCESS PARKING	37	28	65
ACCESSORY PARKING	210	89	299
<b>TOTAL</b>	247	117	364

# OFF-STREET PARKING INVENTORY

## MIDTOWN - ATLANTA, GA

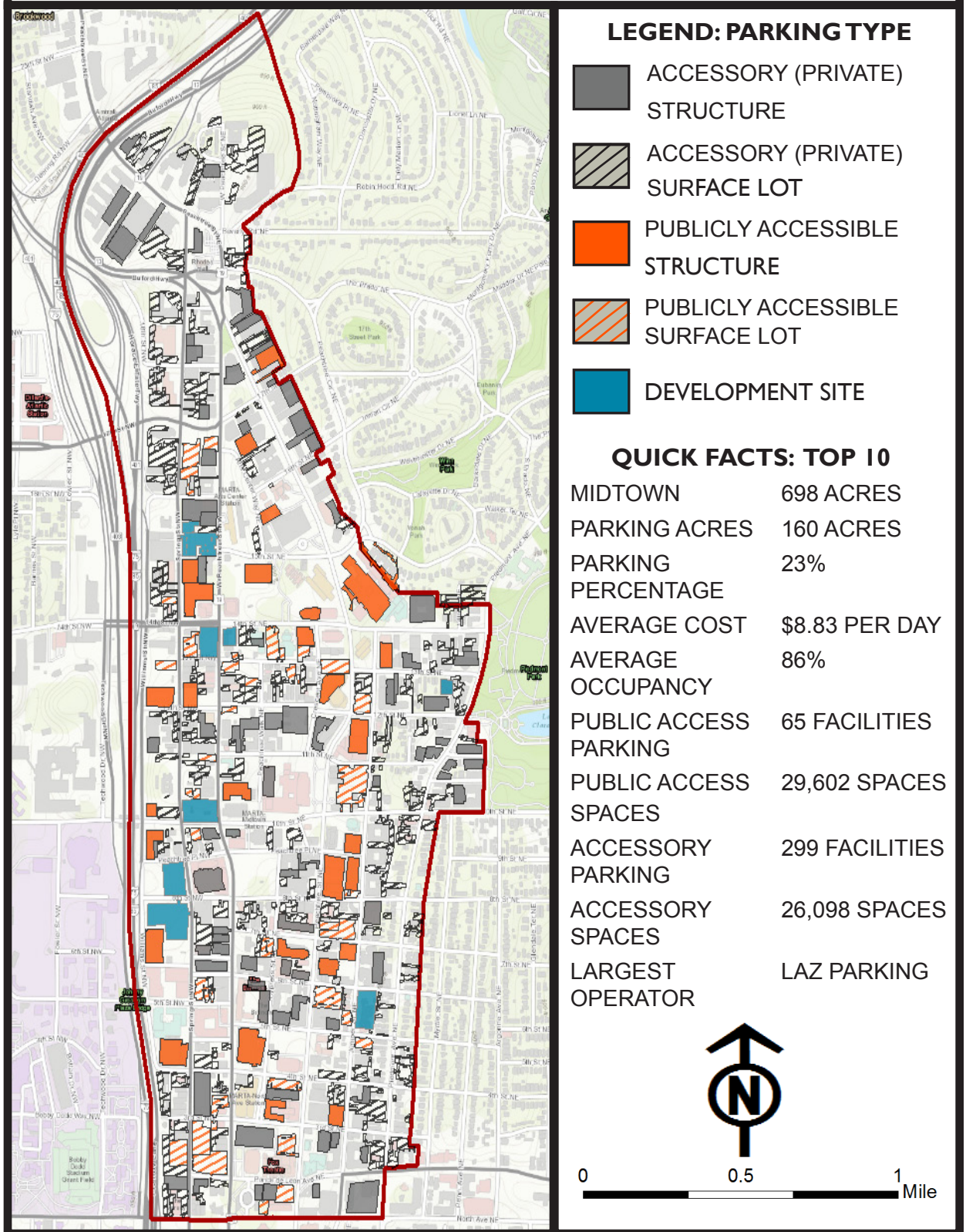


Figure 4.16. Midtown Parking Facilities by Facility Type

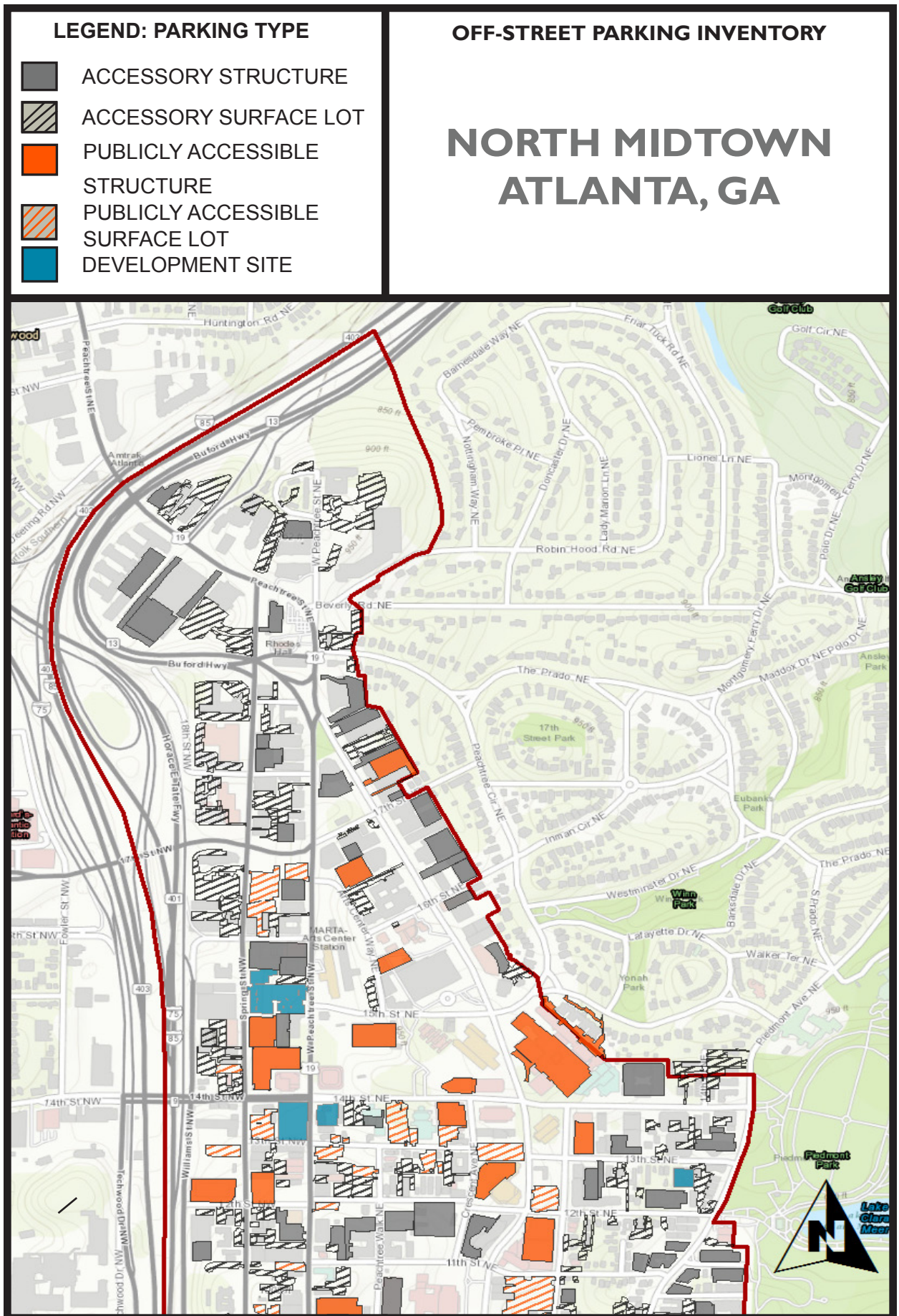


Figure 4.17. North Midtown Parking Facilities by Facility Type

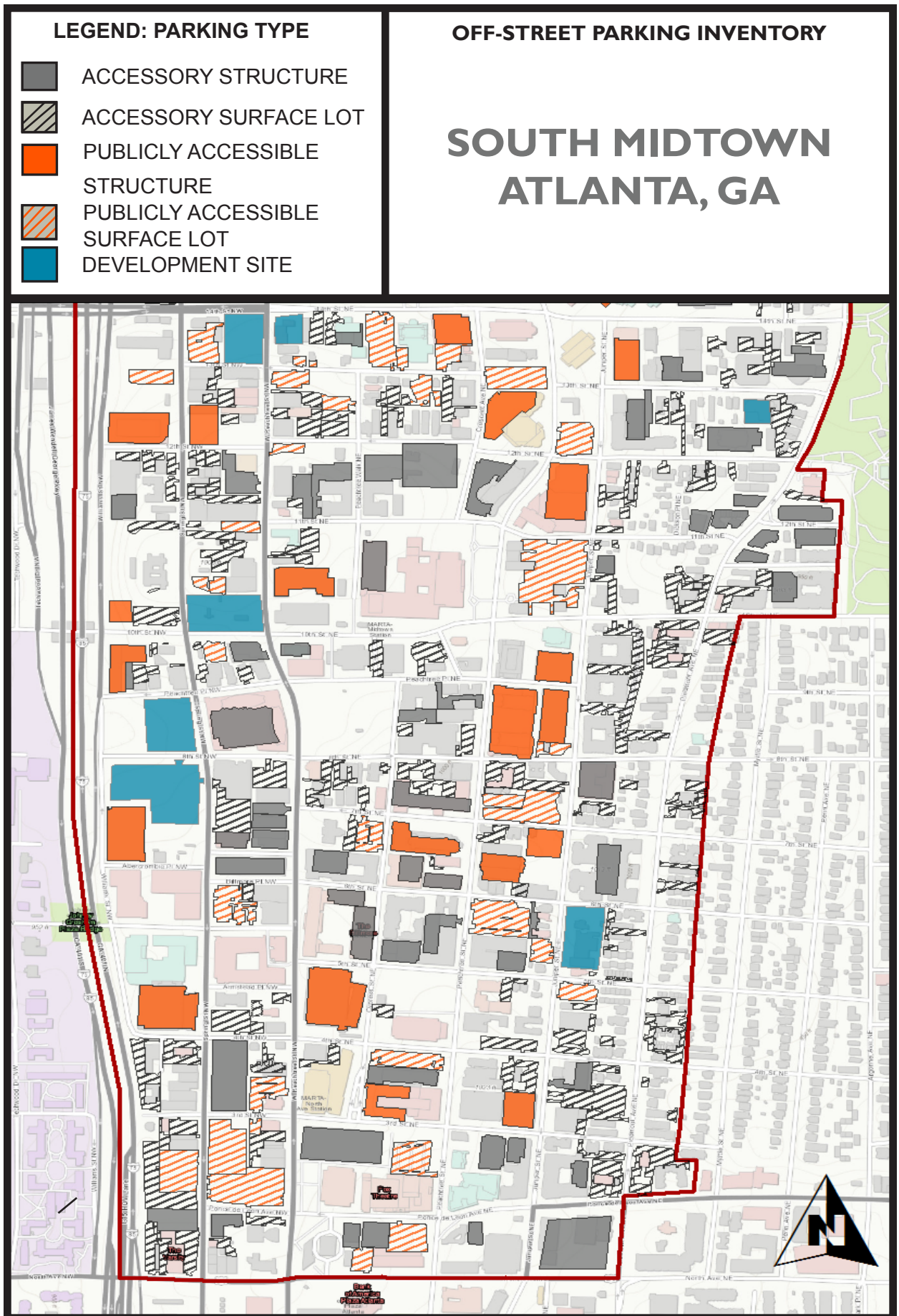


Figure 4.18. South Midtown Parking Facilities by Facility Type

Since the completion of the 2015 Midtown Parking Assessment, Midtown has seen a large amount of development. These developments provide increased density, housing opportunities, and places to work. Eight development sites are highlighted in this review. These sites have converted surface parking and undeveloped land into mixed use developments and office space. The existing facilities in Midtown that are being developed contain 1,529 parking spaces. Based on the Midtown Alliance Development Tour, these parking facilities will be replaced with a total of 2,209 residential units, 45,500 square feet of retail space, and 516,000 square feet of office space (Midtown Alliance, 2016). With the addition of these residential units, retail, and office space comes increases in the parking supply.

As the Midtown area continues to see development, the management of how many parking spaces are added and the form in which they are added to Midtown will be critical. Based on a review of the Special Administrative Permits associated with eight developments in Midtown, there will be an additional 4,277 parking spaces in the Midtown area. Table 4.6 compares the previous parking conditions of development sites to the future parking conditions. When confined to these development sites, about 2,750 parking space will be added to the Midtown parking supply. In addition to the developments highlighted above, there are 10 development under construction in Midtown (Midtown Alliance, 2016). For a neighborhood that is walkable and pedestrian friendly, the continued addition of parking facilities could negatively impact the neighborhood’s urban form. Identifying best practices for the development of parking facilities in Midtown can help to provide additional development standards.

Table 4.6. Parking Spaces Associated with Developments Under Construction

Development Site	Previous Conditions	Future Conditions	Net Change
1240 Spring Street	552 spaces	552 spaces	0 spaces
1010 West Peachtree Street	121 spaces	572 spaces	451 spaces
1163 West Peachtree Street	59 spaces	550 spaces	491 spaces
33 11th Street	0 spaces	466 spaces	466 spaces
60 11th Street	40 spaces	524 spaces	484 spaces
930 Spring Street	360 spaces	261 spaces	-99 spaces
22 14th Street	100 spaces	286 spaces	186 spaces
33 Peachtree Place	464 spaces	1066 spaces	602 spaces
<b>Total</b>	1,696 spaces	4,277 spaces	2,581 spaces

One notable example of a new parking facility created in the Midtown area is the Alta Midtown development. This development converted a surface parking lot of 464 spaces to a mixed use residential development that will provide 343 residential units and 19,000 square

feet of retail space. It shares the parking facility with the offices of Atlanta Gas and Light Resources. The structured parking facility provided at this location is wrapped with ground level retail. Lastly, motorists that park their vehicle at this facility are charged for parking. This form of parking allows motorists adequate space to store their vehicles without detracting from the pedestrian environment. It utilizes space in the Midtown area efficiently by providing shared parking and promotes multi-modal travel through pricing parking and providing residential units near the Midtown MARTA rail station. As the Midtown area continues to be developed, special consideration should be given to impact that development has on transportation system. While the form of this parking facility highlights design elements that should be utilized, it also provides a large increase in the total number of parking spaces in Midtown. Table 4.7 shows the parking ratios associated with developments in Midtown. Based on this sample of developments, the current parking ratios are 1.5 spaces per residential unit and 2.25 spaces per 1000 square feet of non-residential development. Although the development of parking in Midtown is lower than the minimum parking ratios used in other parts of Atlanta, the overall increase of parking in Midtown will impact transportation and land use.

Table 4.7. Parking Ratios Associated with Developments Under Construction

Development Site	Residential Spaces	Dwelling Units (du)	Spaces/du	Non-Res. Spaces	Non-Res. SF	Parking/1000 SF
1240 Spring St.	552	351 du	1.6	N/A	3,400	N/A
1010 West Peachtree St.	512	328 du	1.6	60	13,000	4.6
1163 West Peachtree St.	550	400 du	1.4	N/A	11,500	N/A
33 11th St.	466	356 du	1.4	N/A	N/A	N/A
60 11th St.	446	319 du	1.6	78	14,000	4.6
930 Spring St.	244	268 du	.98	17	10,243	1.7
22 14th St.	286	400 du	.72	N/A	6,500	N/A
33 Peachtree Pl.	471	343 du	1.4	595	269,414	2.2
<b>Total</b>	<b>3,527</b>	<b>2,765 du</b>	<b>1.5</b>	<b>750</b>	<b>328,057</b>	<b>2.25</b>

### Tourism and the Parking Supply

In the CBD of Atlanta, tourism is a major part of the land use and vibrancy. With attractions including the AmericasMart, Center for Civil and Human Rights, Centennial Olympic Park, College Football Hall of Fame, Fox Theater, Georgia Aquarium, Piedmont Park, Philips Arena, World of Coca-Cola, and the upcoming Mercedes Benz stadium, the CBD provides unique attractions that bring people from all over the world to Atlanta. To accommodate tourism, a large portion of the CBD is used to park the cars of visitors. Figures 4.19 and 4.20 show parking facilities associated with the tourism and hospitality industry (THI). In the CBD of Atlanta, THI



associated parking facilities include: 16 hotels, 10 special event, and 3 major attractions. In addition, 28 parking facilities are often used during special events as surge parking. Table 4.8 provides a breakdown of parking related to tourism and hospitality. In total, there were 74 parking facilities related to THI, providing 43,996 parking spaces in Atlanta’s CBD. While these spaces are needed at surge points during the year, they often go unused. Dedicating parking for tourism can result in underutilized land in the CBD. Additional evaluation of the parking patterns at tourism parking facilities is needed to determine the utilization rate of these facilities during peak and non-peak time periods.

Table 4.8. Parking Associated with Tourism and Hospitality Industry in CBD

Tourism Type	Total Facilities	Parking Spaces	Average Parking Cost
Special Event	10	24,101	\$15.78
Hotel	29	12,574	\$25.38
Tourism Surplus	28	4,306	\$11.73
Major Attraction	7	3,015	\$16.67
Total	74	43,996	\$16.54

Parking facilities that specialize in tourism should evaluate land use strategies that can provide parking for tourists while still creating a land use that is active year round. Converting land from surface parking lots to mixed use developments with structured parking may be a way to maximize land use while still meeting the need for parking during special events. Structured parking at these developments can be shared with residents that require parking. Combining long-term ground leases with shared parking facilities can help to ensure that the land is used to provide continuous vibrancy and revenue. Parking facilities like the Georgia World Congress Center Blue-Lot, Yellow-Lot, and Marshalling Yards are prime examples of parking facilities that are intended for tourism but can serve a multi-purpose role. These three parking facilities comprise 44 acres of developable land. If the parking provided at these facilities were converted into a mixed-use development model with shared parking, the land could provide much needed activation on the north and west side of the Georgia World Congress Center complex.

The tourism and hospitality industry in the CBD of Atlanta should evaluate the possibility of developing a parking allocation district. Through a collaboration program, parking providers could combine a portion of the revenue generated from parking to enhance the area surrounding tourism and hospitality destinations. When parking is subset to facilities directly associated with THI, excluding tourism surplus spaces, there are 31,637 parking spaces in the Downtown area. The average parking cost associated with these spaces is \$21.36. If these parking facili-

ties experience the Downtown average occupancy rate of 59% utilization once a week over the course of a year, the annual projected revenue is \$20,644,600.00. Through one year of parking revenue, a parking allocation district that contributes to projects like the Centennial Olympic Park overhaul could provide nearly half of the funding needed for this major project. Projects funded through a parking allocation district could increase the appeal of the CBD. Investments

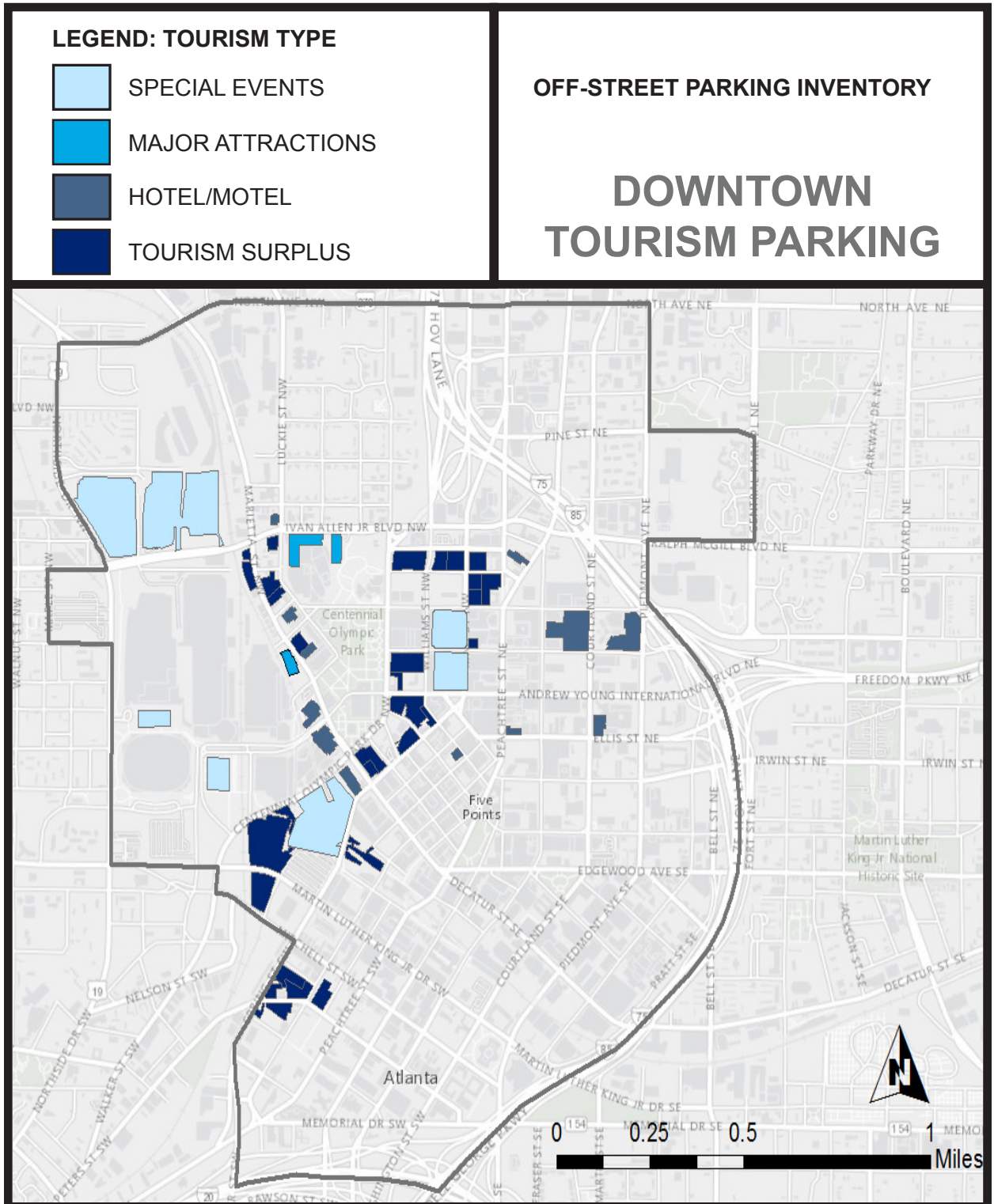


Figure 4.19. Tourism and Hospitality Parking in Downtown Atlanta

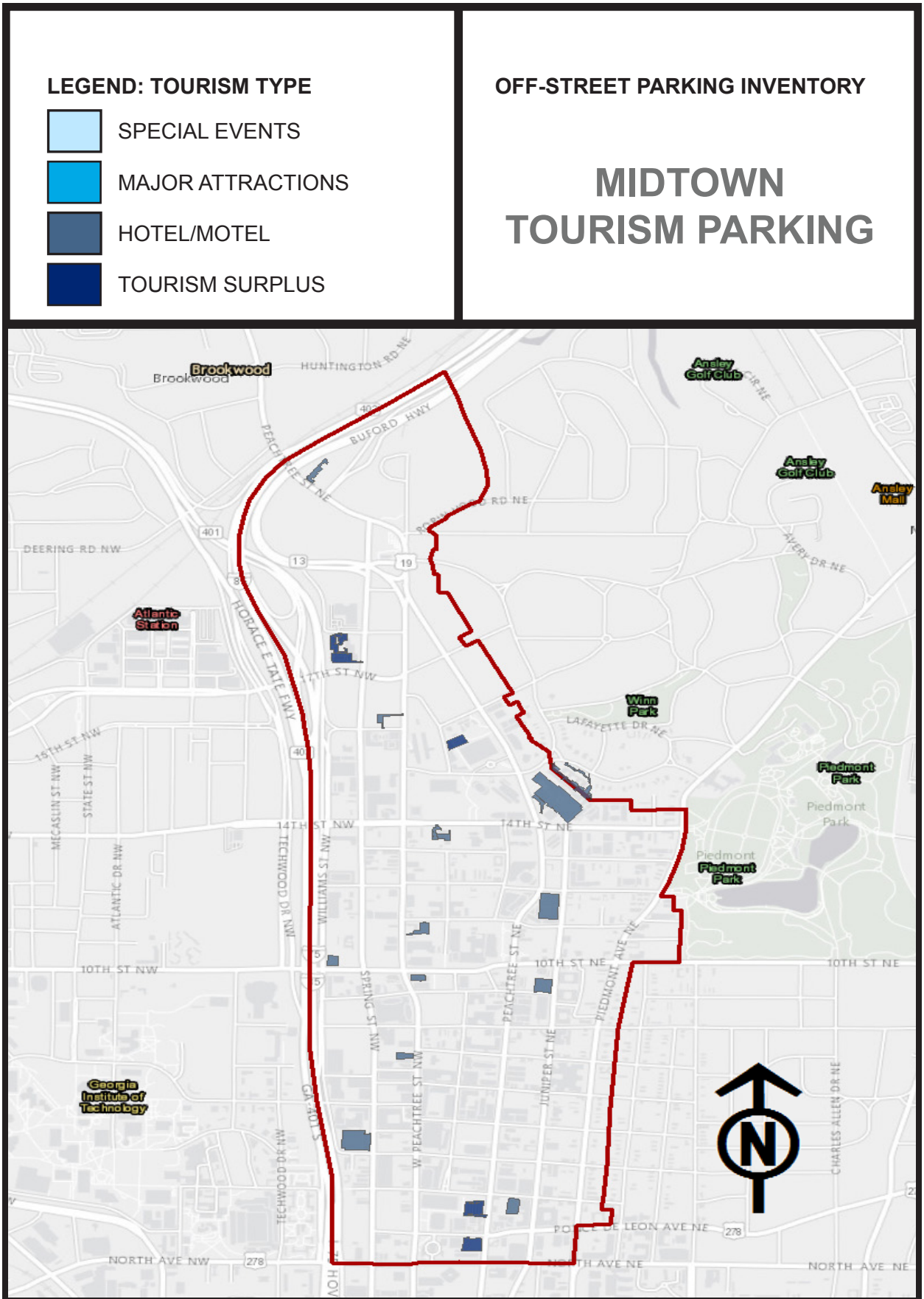


Figure 4.20. Tourism and Hospitality Parking in Midtown Atlanta

that improve the CBD would in turn increase tourism, resulting in additional revenue obtained by the major attractions and the parking facilities associated with the tourism and hospitality industry. Creating a cyclical dynamic of improvements in the CBD that result in increased tourism and revenue can help meet the needs of visitors, businesses, and residents.

### Parking for Tomorrow, Not Today

By 2040, the 10-county Metro Atlanta region is expected to grow in population by 36% (Atlanta Regional Commission, 2015). Currently, the City of Atlanta and the Metro Atlanta region have a population of 463,878 and 4,332,600 respectively (Atlanta Regional Commission, 2015; United States Census Bureau, 2015). Based on population estimates from the Atlanta Regional Commission (ARC), the 10-County Metro Atlanta population is projected to exceed 6,036,000 by 2040. Similarly, ARC projects the city of Atlanta’s population to reach 666,700 by 2040. Table 4.9 details household and population estimates based on the ARC Population Forecast spreadsheet. Population growth of this magnitude will likely increase the number of vehicles on the road, increase vehicle miles traveled, and worsen congestion.

Table 4.9. Vehicles per Household (HHs) in Atlanta, GA and Metro Atlanta Region

Area	2015 Pop.	2015 HHs	2040 Pop.	2040 HHs
Atlanta, GA	463,878	200,235	666,736	293,745
10-County Atlanta Region	4,322,600	1,551,271*	6,036,285	2,313,104

\*2015 Household estimates were unavailable. 2010 estimates were used as a substitute and may not accurately reflect the current number of households in the 10-county Atlanta region. Vehicle and parking projections may be underestimated.

Table 4.10. Population, Household, and Vehicles Projections for Atlanta, GA

Year	Population	Households	Vehicles
2010	442,211	200,235	260,306
2020	557,818	232,826	302,674
2030	611,500	263,050	341,965
2040	666,734	293,745	381,869

Table 4.11. Population, Household, and Vehicles Projections for the 10-County Region

Year	Population	Households	Vehicles
2010	4,135,493	1,551,271	2,854,339
2020	4,925,037	1,819,635	3,348,128
2030	5,492,530	2,067,171	3,803,595
2040	6,036,285	2,313,104	4,256,111

According to ARC, the 10-County region averages 1.84 vehicles per household (Atlanta Regional Commission, 2011). In the City of Atlanta there are 1.3 vehicles per household (Governing, 2014). Table 4.10 and Table 4.11 shows population, household, and vehicle projections in Atlanta, GA and the 10-County region, respectively.

As the population in the City of Atlanta and the 10-County Metro Atlanta region continue to grow, regional approaches to travel demand management will likely emerge as a critical issue. Currently, the travel conditions in Atlanta are noted as some of the worst in the nation. Atlanta has been ranked within the top 10 cities for the worst traffic and longest travel times (Dicker, 2016; Tom, 2016). Increases in the population, that result in increased vehicle ownership and cars on the road, will likely strain Atlanta's transportation infrastructure to a breaking point. While traffic congestion and long commute times are clear outcomes of increased vehicle ownership, the question of where to put all of these cars when they are not in use remains unanswered. Typically a vehicle spends 95% of its lifespan parked (Shoup, 2005). In the Atlanta region, the connection between vehicle ownership and parking have been loosely tied together. Although parking is discussed in the Connect Atlanta Plan: Atlanta's Comprehensive Transportation Plan, policies that manage the growth of parking have yet to materialize (City of Atlanta, 2008). Implementing parking policies that can manage parking demand, provide alternatives to driving, and mitigate the effects of parking on neighborhoods are essential to Atlanta's future success. To evaluate the impact of population growth on the parking supply a projection of three scenarios is provided below.

### **Business as Usual**

Without changes to policies and ordinances that govern parking, the growth of parking will be determined by increases in vehicle ownership and development patterns. A business as usual approach to parking will increase the supply of parking based on an expected increase in parking demand. A one-to-one relationship between vehicles and parking spaces would yield as many parking spaces as there are vehicles. Because each vehicle must have a start and end point for a trip there are a minimum of two spaces for each vehicle; one at home and one at the final destination. Furthermore, because zoning dictates that each land use provide ample parking to meet the peak demand for free parking, a vehicle typically has three or four parking spaces dedicated for its use (Shoup, 2005). These spaces are spread out across churches, grocery stores, shopping malls, and many other land uses. Table 4.12 shows the projection of parking spaces corresponding to an increase in the population for the City of Atlanta. Based on

Table 4.12. Projected Parking Spaces with Population Growth in Atlanta, GA

Year	Population	Households	Vehicles	2 to 1 Parking Spaces	3 to 1 Parking Spaces	4 to 1 Parking Spaces
2010	442,211	200,235	260,306	520,611	780,917	1,041,222
2020	557,818	232,826	302,674	605,348	908,021	1,210,695
2030	611,500	263,050	341,965	683,930	1,025,895	1,367,860
2040	666,734	293,745	381,869	763,737	1,145,606	1,527,474

this projection, the parking supply in the City of Atlanta could be more than double the population.

At the regional level a business as usual approach to parking would result in similar increases in the parking supply. Table 4.13 provides the projections for parking across the 10-county region. Continuing to shape the region with the automobile as the main form of transportation will ultimately hinder the mobility of the region. By 2040, there could be 4.3 million vehicles in use in the 10-County Metro Atlanta region. To accommodate this many vehicles at the 4 to 1 parking space to vehicle ratio, there would need to be more than 17 million parking spaces in the region. The space for all this parking equates to more than 201.5 square miles of parking (given 330 square feet per space which accounts for the lanes of travel in a parking lot). If this parking were to be places in a single parking lot, it would be 1.5 times the size of the City of Atlanta. Because parking is often interwoven into every land use the amount of space used for parking is often overlooked.

Table 4.13. Projected Parking Spaces with Population Growth in the 10-County Region

Year	Population	Households	Vehicles	2 to 1 Parking Spaces	3 to 1 Parking Spaces	4 to 1 Parking Spaces
2010	4,135,493	1,551,271	2,854,339	5,708,677	8,563,016	11,417,355
2020	4,925,037	1,819,635	3,348,128	6,696,257	10,044,385	13,392,514
2030	5,492,530	2,067,171	3,803,595	7,607,189	11,410,784	15,214,379
2040	6,036,285	2,313,104	4,256,111	8,512,223	12,768,334	17,024,445

These projections are based on a business as usual approach in which travel demand management is not prioritized through policies and ordinances. These projections also use a vehicle ownership rate of 1.3 per household in the City of Atlanta and 1.84 per household in the 10-County region. Managing the amount of parking created and setting goals for mode share seems necessary to accommodate future growth in the Metro Atlanta region. Development that shifts mode choice to transit, walking, and biking can lower the demand for parking and increase the mobility of all modes.

## Decreasing Demand for Parking

To project a decrease in the demand for parking, projections can be evaluated at lower vehicle per household ratios. Housing options that provide easy access to alternative travel options and are in close proximity to daily needs can reduce the need for automobile ownership. Developing complete neighborhoods around transit stations and increasing job-housing balance throughout the City of Atlanta can help to lessen the need for automobile use on a daily basis (City of Regina Planning Department, 2014). In addition, providing access to car shares and bike shares can decrease the need for individual households to own an automobile (Martin & Shaheen, 2011). Lastly, charging for parking at destinations will allow motorists to economize their mode choice. Motorists have been found to be sensitive to parking fees because it is a direct out-of-pocket cost associated with travel. Increased parking cost result in larger mode splits and lower the demand for parking (Litman, 2013). Target goals of 0.5, 0.75, and 1.0 vehicles per household were selected for the projection of decreased parking demand. These levels of vehicle ownership were selected to demonstrate varying rates of ownership. The number of parking spaces were based on a 4 spaces to 1 vehicle ratio. Table 4.14 provides the projections for parking in the City of Atlanta based on varying Vehicles per Household ratios.

Table 4.14. Projected Parking Spaces based on Vehicles per Household Targets

	0.5 Veh/HH Target		0.75 Veh/HH Target		1.0 Veh/HH Target	
Year	Vehicles	Parking Spaces	Vehicles	Parking Spaces	Vehicles	Parking Spaces
2020	116,413	465,652	174,620	698,478	232,826	931,304
2030	131,525	526,100	197,288	789,150	263,050	1,052,200
2040	146,873	587,490	220,309	881,235	293,745	1,174,980

The difference between a 0.5 and 1.0 vehicle per household ratio in 2040 is about 587,000 parking spaces. With a construction cost of \$5,000 per surface parking space, achieving a 0.5 vehicle per household target could result in over \$2.9 billion in construction cost savings. Since parking comes in the form of surface and structured parking, the actual savings in construction cost would likely be higher than this projected amount. This savings could be applied to neighborhood improvements associated with development throughout the City of Atlanta.

At the regional level, lowering the vehicle to household ratio would require a unified commitment to decreasing the region's dependence on the automobile. Shifting development patterns from the sprawl that the Atlanta region is known for to a dense and transit focused form of development would be contingent upon 10 counties and the associated municipalities think-

ing collectively as a region. In lieu of this shift in thinking and cooperative framing of the region's future, travel demand management can be fostered through congestion pricing, parking pricing, transit subsidies, and parking cash out programs. Reducing the supply of parking in the central business district of Atlanta could also result in mode shifts when people travel into the city, but likely would not affect the rate of vehicle ownership.

### **Planning for a Car-less/Car-lite City**

Market disruptors such as car sharing, ridesharing, and autonomous vehicles will likely shift the way people travel. Car sharing programs such as Zipcar are reducing the need for people to have their own vehicle (Martin & Shaheen, 2011). For one shared vehicle there can be a reduction of 6 to 9 privately owned vehicles (Martin & Shaheen, 2011). Residential developments that unbundle parking from leases and offer the option of car share memberships could reduce the number of parking spaces created. This could allow for access to an automobile when needed but decrease the overall vehicles owned, vehicle miles traveled, and land used for parking. Car share programs also reduce the cost associated with vehicle ownership and could increase the amount of disposable income for a household. The broad implementation of car share programs in the City of Atlanta could help to develop a car-lite city that is less dependent on the automobile and promotes travel through affordable options.

Rideshares, such as Uber and Lyft, also allow for automobile travel without vehicle ownership. Rideshares can increase flexibility in mode choice by facilitating last mile connectivity to transit. While ridesharing has not been associated with decreases in automobile ownership, it can play an important role in a car-lite city (Naughton, 2016). For car-free households, rideshares can ease connectivity and enable travel to areas that have poor connection to transit (Donnelly, 2015; Nashville MTA/RTA, 2015). In addition, rideshares help to diversify the transportation portfolio of a city and provide an alternative to privately owned vehicles (Herriges, 2016).

Autonomous vehicles are a potential market disruptor that could drastically change the way people travel and the way parking is approached. Shared-use autonomous vehicles could significantly reduce the need for parking spaces at the work place. Autonomous vehicles can allow passengers to load and unload at the curbside. Used in a car-share format, autonomous vehicles can drop-off passengers and then begin a new trip without the need for off-street parking facilities for vehicle storage. If this form of mobility is implemented widely in the City of Atlanta, the land currently used for parking could be redeveloped to provide housing, employ-



ment, and other needs for urban living. Alternatively, autonomous vehicles may be similar to privately owned vehicles and still require places for daily storage. If autonomous vehicles drop passengers off at their destination and then travel to a nearby parking facility, the land used for parking may continue to serve that function. Ultimately, the policies that govern parking will have to be adjusted to accommodate new technologies. The urban form of parking will also evolve to incorporate technological advances related to the automobile and other modes of travel.

## CHAPTER 5

### PARKING POLICY DESIGN AND IMPLEMENTATION FOR ATLANTA, GA

#### Removing Parking Minimums

Cities throughout the United States have taken steps to lower the impacts of parking. One major shift in the approach to parking has been the removal of parking minimums from city ordinances. Cities like San Francisco, CA, Portland, OR, Seattle, WA, Pittsburgh, PA, and New York, NY have completely removed parking minimums from their zoning ordinances (Strong Towns, 2015). Many other cities have lowered parking minimums to mitigate the impacts of parking.

Currently in the city of Atlanta, parking minimums are required in the City's zoning. Table 5.1 provides a sample of minimum parking requirements currently applied in the city of Atlanta. While minimum parking requirements have been removed for some land uses in Downtown and Midtown, the city as a whole requires minimum parking rates for every land use. Requiring minimum parking rates throughout the city results in larger developments and higher development costs (Shoup, 2014). This is particularly true for developments in the CBD. As noted by Richard Voith:

One defining features of successful CBDs is their high density of economic, social, and cultural activities. This density gives CBDs a unique market niche that is difficult to replicate in other parts of the metropolitan area. Abundant, inexpensive parking would make the CBD more attractive if it had no other consequences; however, plentiful, low-cost parking may be at odds with the very aspect that makes a downtown area unique - high density (Shoup, 2005).

Based on minimum parking requirements utilized in Atlanta, parking can double the amount of land needed for a primary land use, which is a disincentive for new business. For banks and retail establishments, a 1000 square foot building requires 2,650 square feet of land to house the business and the minimum amount parking required for that business.

In the long term, minimums parking requirements spread the City of Atlanta further apart. This results in increased driving, longer travel times, and higher travel costs. The City of Atlanta should remove parking requirements from the city's zoning ordinances. By doing so, the City can promote denser development and increase the share of non-automobile trips (Forinash, Millard-Ball, Dougherty, & Tumlin, n.d.). Removing minimum parking requirements can also help to promote development in historic neighborhoods and transit oriented developments (Shoup, 2005; Willson, 2005). In the city of Atlanta, removing parking minimums within a half mile radius of transit stations could increase the mode split near rail stations and lower the development

Table 5.1. Minimum Parking Requirements Used in the City of Atlanta, GA\*

Land Use	Peak Space Factor	Unit (space/ square feet)	Parking Lot Size per 1000 SF	Parking Lot: Land Use %
Banks, Savings, and Loan Institutions	5 spaces	1000 sf of gross leasable area	1,650	165%
Bowling Alleys	10 spaces	1000 sf of gross leasable area	3,300	330%
Eating and drinking establishments	3.3 spaces	1000 sf of gross leasable area	1,100	110%
Office	3 spaces	1000 sf of gross leasable area	990	99%
Retail establishments	5 spaces	1000 sf of gross leasable area	1,650	165%
Temporary Storage Centers	1.7 spaces	1000 sf of gross leasable area	1,000	100%
All other non-residential uses	3.3 spaces	1000 sf of gross leasable area	1,650	165%

\*Minimum parking rates obtained for SPI 19 – Buckhead Village District Regulations, SPI 22 – Memorial Drive/Oakland Cemetery Special Public Interest District Regulations

cost for new development. It would also prevent the over-supply of parking and promote efficient land use. Historic districts like Fairlie-Poplar and South Downtown could also benefit from the removal of parking minimums.

### Setting Parking Maximums

In conjunction with removing or lowering minimum parking requirements, many cities have decided to set parking maximums. Creating maximum parking ratio can help to ensure that the provided parking supply does not exceed pre-determined rates. Parking maximums restrict the number of parking spaces that can be constructed at a particular development site (Zimber, Robin, n.d.). Within the central business district of Atlanta, the Downtown and Midtown neighborhoods have set parking maximums (Atlanta City Council - Zoning Committee, 2007; Midtown Alliance, 2013). Table 5.2 provides an example of parking maximums set in these areas. Based on the parking maximums in Table 5.2, parking associated with development has a smaller footprint than the primary land use. Parking maximums are thought to help to develop dense, vibrant neighborhoods that encourage walking.

By setting parking maximums cities can lower the amount of land dedicated to parking and begin to break the cycle of automobile dependency. The City of Atlanta should evaluate the impact of creating parking maximums within a half mile radius of all rail stations. By setting parking maximums within these transit-oriented development areas, the City can promote denser

development near rail, increase the mode share of these areas, and support the connection of neighborhoods to the central business district.

Table 5.2. Parking Maximums in the Central Business District of Atlanta, GA

Land Use	Max Spaces	Unit	Max Lot Size/1000 SF	Parking Lot:Land Use %	Neighborhood
Commercial/Retail	2.5 spaces	1000 sf of gross leasable area	825	83%	Downtown
Eating and Drinking	2.5 spaces	1000 sf of gross leasable area	825	83%	Downtown
Hotel and Motel	1 space	per lodging unit	N/A	N/A	Downtown
Institutional	2.5 spaces	1000 sf of gross leasable area	825	83%	Downtown
Office	2.5 spaces	1000 sf of gross leasable area	825	83%	Downtown
Recreation/Entertainment	1.5 spaces	1000 sf of gross leasable area	495	50%	Downtown
Residential, 1 bedroom	1.25 space	dwelling unit	N/A	N/A	Downtown
Residential, >=2 bedrooms	2.25 spaces	dwelling unit	N/A	N/A	Downtown
All Other Uses	2 spaces	1000 sf of gross leasable area	660	66%	Downtown
Office	2.5 spaces	1000 sf of gross leasable area	825	83%	Midtown
Residential Visitor Parking	1/3 space	dwelling unit	N/A	N/A	Midtown
Residential, <=2 bedrooms	1 space	per bedroom	N/A	N/A	Midtown
Restaurant	2.5 spaces	600 sf of gross leasable area	1375	140%	Midtown
Retail	2.5 spaces	600 sf of gross leasable area	1375	140%	Midtown

### Decoupling Parking

In the city of Atlanta, parking is often bundled into residential and business lease agreements. When parking is coupled with lease agreements, residents and employers pay for parking as a part of their rent. Bundling the costs of parking into rental costs results in higher rental prices for residents and businesses irrespective of their use of parking facilities. Coupled parking also masks the cost of parking and incentivizes automobile trips. Decoupling parking from lease agreements essentially requires residents and businesses to pay directly for the parking they use. Car-free households are not obligated to pay for parking that they do not need. Likewise, businesses are able to choose whether they want to include parking as a subsidy to

employees and customers. Decoupling parking can facilitate both parking cash outs and shared parking programs.

### **Parking Cash Outs**

Parking cash out programs have been identified as an effective strategy for reducing drive alone trips to work by incentivizing alternative mode choice (Holmes, 1998). Outcomes of parking cash out programs include: increases in carpool trips, lower traffic congestion, and lower emissions (Holmes, 1998). If employers provide free parking to their employees, parking cash out essentially requires the employer to provide the same cash value to employees to do not receive the free parking. Parking cash out programs are common place in Atlanta. Employers in the city of Atlanta, particularly employers in the central business district of Atlanta, should evaluate the possibility of implementing parking cash out programs. For employers that lease office space in the CBD of Atlanta, decoupling parking from their lease agreements and providing parking cash out programs could lower operational costs (U.S. Environmental Protection Agency, 2005).

One example of an employment center in Downtown Atlanta that could benefit from a parking cash out program is Peachtree Center. This center provides space for over 2.3 million square feet of office and retail. It is connected to 2,278 parking spaces across 2 structured parking facilities and 4 surface parking lots. If parking were decoupled from office leases at Peachtree Center, and employers provided cash out programs, the change in subsidies would likely affect employee mode choice. This scenario can also be applied at the Colony Square employment center in Midtown Atlanta. Additional investigation is needed into the potential impact of parking cash out programs in Atlanta, GA.

For large employers that own parking facilities, like Emory University Hospital Midtown, Coca-Cola Refreshments, and Centergy, implementing parking cash out programs could lower the demand for parking and allow for the consolidation of parking facilities. Consolidating parking facilities could allow for surplus land to be sold for development or re-purpose to a higher and better use. Removing employer paid parking subsidies, and charging for parking, is an alternative to parking cash out programs. Revenue generated from charging for parking can be used to fund transit subsidies for employees.

Georgia Commute Options, a program of the Georgia Department of Transportation, offers free commute option services to individuals and workplaces (Georgia Commute Options, 2016). This program offers subsidies for “clean commutes” including: walking, biking, transit,

car-pool, and van-pool. Georgia Commute Options should investigate the feasibility and potential impact of implementing parking cash out programs.

### **Shared Parking**

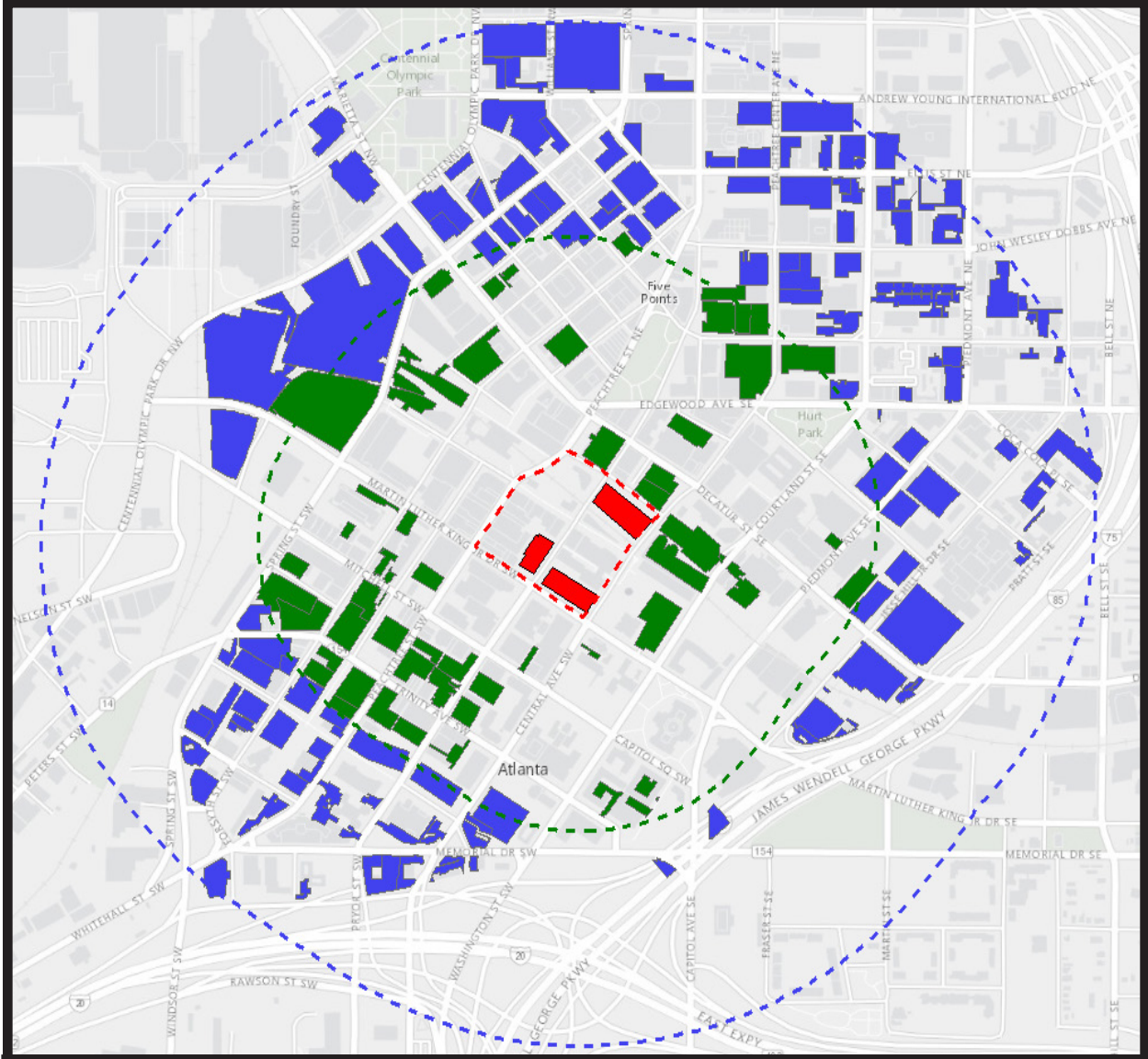
Shared parking agreements, particularly in urban core developments and historic districts, can help to reduce the burden of creating additional parking. As the city of Atlanta continues the revitalization of Downtown and Midtown, developments should explore shared parking as the first approach to meeting their parking needs. Building new parking should be a last resort and conducted after shared parking possibilities have been exhausted. In the city of Atlanta, the Underground Atlanta development is a prime example of how shared parking agreements can help to serve the needs of new development while lowering development cost. This project has struggled to close on the final sale of the property because of concerns related to an adequate parking supply (Trubey, 2016). The development site is situated near the Five Points MARTA station, Atlanta's major transit hub. In addition to the 1,397 parking spaces directly on the Underground Atlanta development site, this location has access to 9,098 parking spaces within a quarter mile radius and 33,171 parking spaces within a half mile radius. Figure 5.1 displays parking near the Five Points development site. To address concerns related to parking capacity, the Underground development should explore the formation of a parking agreement with the Georgia Building Authority. The Georgia Building Authority operates a parking facility directly across from the Underground site. The parking facility located at 90 Central Avenue provides 930 parking spaces for employees. This is one of three parking decks used by the Georgia Building Authority. By developing a shared parking agreement with the Georgia Building Authority, the Underground development could satisfy its parking needs without creating additional surface parking lots in the Downtown area.

## **Applying Parking User Fees in Atlanta, GA**

### **Needs Assessment**

Parking in the CBD of Atlanta comes at a cost. Each additional parking space provided in the central business district encourages people to drive to the CBD as opposed to using other modes of travel. Current parking rates result in higher congestion, decreases the ability to provide effective transit options, and deteriorates the cyclist and pedestrian environment. Parking also negatively impacts the environment. By incentivizing automobile travel, parking can potentially lead to higher rates of vehicle miles traveled, higher emissions, increased fuel

# UNDERGROUND DEVELOPMENT SITE PARKING PROFILE



## LEGEND

- UNDERGROUND DEVELOPMENT SITE
- 1/4 MILE FROM SITE
- 1/2 MILE FROM SITE
- PARKING WITHIN DEV. SITE
- PARKING WITHIN 1/4 MILE
- PARKING WITHIN 1/2 MILE



Figure 5.1 Five Points Development Site Parking

consumption per capita, and storm water runoff. Lastly, parking has a high opportunity cost. Land used for parking, particularly in the CBD, is land that is not being used to provide housing, jobs, or community space. With 27% of the CBD providing parking for people, Atlanta uses over a quarter of its prime real estate for automobile storage. The opportunity cost to businesses of land use allocated to parking is high, and is generally passed along to the customers of these businesses. As Donald Shoup (2005) states in the High Cost of Free Parking:

If drivers don't pay for parking, who does? Everyone does, even if they don't drive. Initially the developer pays for the required parking, but soon the tenants do, and then their customers, and so on, until the cost of parking has diffused everywhere in the economy. When we shop in a store, eat in a restaurant, or see a movie, we pay for parking indirectly because its cost is included in the prices of merchandise, meals, and theater tickets. We unknowingly support our cars with almost every commercial transaction we make because a small share of the money changing hands pays for parking. Resident pay for parking through higher housing prices for housing. Businesses pay for parking through higher rents for their premises. Shoppers pay for parking through higher prices for everything they buy. We don't pay for parking in our role as motorists, but in our other roles – as consumers, investors, workers, residents, and taxpayers – we pay a high price. Even people who don't own a car have to pay for “free” parking. (Shoup, 2005).

The cost of parking is bundled into the everyday costs of living, even for people that do not drive an automobile. This spillover of cost from one market to another is considered to be a market failure (Investopedia, 2015). By undercharging for parking, motorists are not required to economize their trip and mode choice. Cities throughout the United States have identified this market failure and taken steps to remedying it. The first major step is to charge for parking. In addition, many cities have added an additional fee to the cost of parking (Litman, 2013). Table 5.3 shows a listing of cities in the U.S. that implement parking user fees and their respective rate structures (Litman, 2013).

In the city of Atlanta, motorists that pay for parking only pay the operator of the parking facility. There is currently no form of user fee or sales tax on transactions related to parking in the city of Atlanta. Operators of parking facilities in turn pay an annual permitting fees to operate their business. According to Article XVII Section 30-1083 of the City of Atlanta Ordinance 15-O-1134: park-for-hire facilities are required to pay an application fee of \$700.00, an annual renewal fee of \$75.00 and a maximum fee parking space fee of \$550.00. This places an all in fee of \$700.00 for the first year of operations and \$625.00 for each subsequent year of operation.



Table 5.3. Parking Fees in Various Cities\*

City	Parking Tax
Bainbridge Island, WA	12% of revenues on both public and private parking facilities
Bremerton, WA	6% of commercial operator revenues
Burien and SeaTac, WA	\$1.00 per parking transaction (exemption for people with disabilities, government vehicles, and carpools)
Baltimore, MD	\$14 flat fee on monthly parking transactions, 11% on daily and weekly parking
Cleveland, OH	8% tax to fund a new football stadium
Detroit, MI	30% tax on airport commercial parking
Los Angeles, CA	10% of parking revenues
Miami, FL	27.8% of revenues.
New York, NY	18.5%, or 10.5% for Manhattan residents
Oakland, CA	10% of revenues
New Orleans, LA	12% of revenues
Pittsburgh, PA	31% of revenues
Santa Monica, CA	10% of revenues

*\*This table summarizes examples of commercial parking taxes in U.S. cities.*

This permitting fee, in addition to property taxes paid on parking facility site are the only parking revenues received by the City of Atlanta from off-street parking. Considering that over a quarter of the central business district is used for parking, this is a poor revenue source for the city. In addition, the revenue that is collected from parking is intended to offset administrative costs incurred by the Department of Public Works to oversee parking. At this point, revenue obtained from parking is not used to address the negative impacts of parking or minimize the need for parking. To address the social and environmental costs associated with parking, the City of Atlanta should implement a parking user fee.

### Projections

Parking user fees can serve as a powerful source of revenue for the City of Atlanta. In the central business district of Atlanta there approximately 94,000 parking spaces at park-for-hire facilities that charge for parking. The average cost of parking is \$11.74 per day. Through the 2015 Downtown Parking Inventory Update and the 2014 Midtown Parking Assessment, the average occupancy rate at parking facilities was found to be 59% and 86% respectively (Midtown Alliance, 2015). To provide an estimated occupancy rate for the central business district, these two occupancy rates were averaged for a CBD occupancy rate of 73%. The potential revenue generated from parking user fees was projected using the average cost of parking in the CBD

and the CBD occupancy rate. Revenue projections were based on 262 business days in a year for Downtown and Midtown. Weekends were omitted from the projection because weekend parking rates in the CBD are highly dependent on the occurrence of special events. Projections were made for a range of user fee rates. Table 5.4 shows the potential annual revenue generated from the implementation of user fees in the city of Atlanta. These projections are limited to park-for-hire facilities in the Downtown and Midtown areas, however, parking user fees should be implemented across the corporate boundary of Atlanta. If implemented city wide, the potential revenue generated from user fees could drastically change the ability of the City of Atlanta to offset the negative impact of parking and minimize the need for parking throughout the City.

The projected revenue amounts were determined by a two-step process. First, the number of Daily Transactions were projected. This was calculated by multiplying the number of park-for-hire spaces by the average occupancy rate for the CBD. Equation 1 demonstrates the calculation of daily transactions in the CBD. It is important to note that this equation does not incorporate a factor for parking turnover. This equation also assumes that the average occupancy rate is constant throughout the work week. Fluctuations in occupancy rate and parking turnover rate will likely change the number of daily parking transactions. To increase the accuracy of revenue projections, additional research is needed to determine the parking turnover rate and daily occupancy rates for all facilities in the CBD of Atlanta. Based on this methodology, 68,928 daily parking transactions are projected in the CBD of Atlanta.

**Equation 1.**

$$\text{Daily Transactions} = \text{Park-for-Hire Spaces} * \text{Occupancy Rate}$$

Equation 2 calculates the annual revenue projected from parking user fees. This equation uses the average parking cost for each transaction cost. Parking transaction cost in the CBD of Atlanta ranges from \$2.00 to \$35.00, with an average parking cost of \$11.74. Revenue from parking transactions will differ along the spectrum of parking transaction costs.

**Equation 2.**

$$\text{Annual Revenue} = \text{Daily Transactions} * \text{Average Parking Cost} * \text{User Fee Rate} * 262$$

In addition to parking user fees, the City of Atlanta should investigate the impact of per space levies for all off-street parking facilities and an under-priced levy for off-street facilities that provide free parking. While specific projections for per space levies were not assessed in this research, Marshall Willis evaluates the impact of per space fees in his thesis Structuring an Equitable Parking Tax: Why the City of Atlanta Needs a Parking Tax and How it Should be

Table 5.4. Projected Revenue from Parking User Fees in the CBD of Atlanta, GA

User Fee Rate	Annual Revenue	40-year Revenue Projection
25%	\$53,001,200.00	\$2,120,049,300.00
20%	\$42,400,900.00	\$1,696,039,400.00
15%	\$31,800,700.00	\$1,272,029,600.00
10%	\$21,200,400.00	\$848,019,700.00
5%	\$10,600,200.00	\$424,009,800.00
0%	\$0.00	\$0.00

Structured (Willis, 2011). According to Willis, a per space levy implemented in Downtown Atlanta could generate an additional \$13,789,805.55 annually. His research recommends a per space levy of \$800.00 for Downtown, Midtown, and Buckhead areas. He also recommends a per space levy of \$400.00 for parking spaces outside of the areas previously mentioned. His research proposes per space levies in lieu of parking user fees. While Willis recommends that the City of Atlanta implement either parking user fees or per space levies, the implementation of both parking user fees and per space levies should be evaluated to determine the potential outcomes of these fees on parking.

#### **Implementation of Parking User Fees**

Implementing parking user fees in the CBD of Atlanta will need coordination with park-for-hire facilities. Operators of park-for-hire facilities are charged a fee on each parking transaction. The user fee is in addition to the base parking fare charged by the operator. For example, if an operator charges \$5.00 for parking a 15% user fee will add \$0.75 to the total cost of parking; resulting in a \$5.75 parking costs. Users of park-for-hire facilities pay a higher amount for parking and the revenue obtained from higher rates is provided to the City of Atlanta by the parking operator. Parking user fees are typically collected each month. Parking facility operators are required to provide monthly payments of user fees to the City in order to stay in compliance with their operating permit. Once collected, revenue from parking user fees are maintained in an account that is separate from the city's general fund. This allows for easy tracking of revenue generated from user fees. It also provides for increased flexibility during the allocation of revenue for projects that help to mitigate the impact of parking and enhance travel options. Some cities maintain revenue generated from parking in a Parking Enterprise Fund.

## **Technology**

In the City of San Francisco, parking user fees were implemented as a commercial parking tax. After the implementation of parking user fees, San Francisco experienced difficulty collecting fees because parking operators underreported their revenue (Litman, 2013). To remedy this, San Francisco mandated that parking facility operators use specific revenue control systems that provide a receipt for users and record transactions for auditing (Litman, 2013). This helped to increase the accountability of parking operators and track transactions. In the City of Atlanta, park-for-hire facilities are currently required to provide users with a receipt for parking transactions. In addition, many park-for-hire facilities use revenue control systems, such as pay stations or cashiers that can be adapted for monthly revenue audits. Implementing user fees in the CBD of Atlanta will require the coordination of existing revenue control systems and standardized reporting to the City of Atlanta. As the governing department for park-for-hire facilities, the Department of Public Works should investigate ways in which electronic reporting of monthly revenues and transactions can be implemented for the city of Atlanta. Reporting and payment systems should be automated in order to minimize the level of burden placed on the parking operators.

## **Legislation**

Implementing parking user fees in the City of Atlanta will require legislation that includes this fee to the laws governing park-for-hire facilities. City of Atlanta Ordinance No. 2015-60 15-O-1134 provides legislation for the management of park-for-hire facilities in the City of Atlanta. Section 30-1083 of the Code of Ordinances currently establishes an annual fee structure for park-for-hire facilities. Amending this ordinance to include a user fee for each parking transaction could be done through an act of the Atlanta City Council and the Mayor's Office. Including language that ensures that user fees be passed on to the user of parking is important to implementing fee. In the City of Chicago, the provision that user fees be passed on to the user of parking facilities is achieved through the following language:

The ultimate incidence of and liability for payment of the tax is on the person who seeks the privilege of occupying space in or upon the parking lot or garage (such person hereinafter referred to as the "recipient") (City of Chicago, n.d.).

Examples of legislation that implements parking user fees in the City of Chicago, City of Miami, and City of Los Angeles have been included in Appendix B, C, and D, respectively. The City of Atlanta and the Department of Public Works should investigate strategies for implement-

ing parking user fees within the corporate boundaries of the city.

## Impact

User fees can increase the costs associated with driving a vehicle. By increasing parking costs, motorists will make decisions on where they park and which mode they use to travel. Increased parking fees have been found to decrease drive alone trips while increasing the mode share of carpool, public transit, and walking/biking trips (Litman, 2013). Hensher and King (2001) evaluate the impact of increased parking price on parking behavior in the CBD. Their model indicates that a 10% increase in the price of parking reduces the demand for parking in the CBD by 5.41% (Hensher & King, 2001). It also increases park and ride trips by 3.63% and increases transit trips by 2.91% (Hensher & King, 2001). When considering travel behavior responses for auto-oriented regions, researchers have also found that a 10% increase in the cost of parking results in decreased drive alone trips and increased mode share for carpool, transit, walking, and cycling (TRACE, 1999). A 10% increase in the cost of parking in Atlanta’s CBD could shift travel behavior, decrease demand for parking in the CBD, and increase mode share. In addition to raising a substantial amount of revenue, parking user fees can help to lower vehicle miles traveled and congestion in the City of Atlanta. Investment of revenue generated by user fees that increase travel options, decrease travel distance, and support a job-housing balance can help to decrease the need for parking in the CBD. Table 5.5 shows adjusted revenue projections of parking user fees. Demand elasticity was factored into these projections to reflect changes in parking demand due to higher parking user fees. A “middle of the road” parking user fee of 15% could result in \$28.5 million in additional revenue while helping to encourage use of alternative transportation.

Table 5.5. Projected Revenue from Parking User Fees Adjusted for Elasticity

User Fee Rate	Annual Revenue	40-year Revenue Projection
25%	\$43,925,600.00	\$1,757,027,200.00
20%	\$36,592,600.00	\$1,463,705,300.00
15%	\$28,533,500.00	\$1,141,341,600.00
10%	\$19,748,400.00	\$789,936,200.00
5%	\$10,237,200.00	\$409,488,900.00
0%	\$0.00	\$0.00

Table 5.6. Summary of Revenue Allocation for Year One

Optional Use	Proposed Allocation	Percent of Revenue
Public Safety	\$4,280,025.00	15%
Pedestrian Infrastructure	\$5,706,700.00	20%
Cycle Atlanta Phase 1.0 Completion	\$8,560,050.00	30%
Neighborhood Revitalization Fund	\$8,560,050.00	30%
Operations & Management	\$1,426,675.00	5%

### Allocation of User Fees

Implementing parking user fees in the city of Atlanta has two primary purposes. The first purpose is to charge the true cost of parking to ensure that mode choice decisions include the full costs of automobile use. The second is to generate revenue that can be used to mitigate the impact of parking on neighborhoods and ultimately to lower the demand for parking. To address this second goal, a list of potential uses for parking user fees have been drafted. This list evaluates the implementation of a 15% user fee rate in the CBD of Atlanta. The 15% user fee rate was selected as a “middle of the road” option. When applied in cities throughout the U.S., user fees have ranged from 6% to 31%. For these projections the annual revenue amount of \$28,533,000.00 is used.

Allocation of revenue was determined by dedicating a percentage of the revenue generated to projects that create alternatives to automobile travel, support the pedestrian environment, and provide funding for neighborhood driven solutions. The allocation of revenue proposed in Table 5.6 centers around funding the Cycle Atlanta Phase 1.0 Plan and empowering neighborhood revitalization. The 30% allocation was based on dedicating sufficient funds to complete Cycle Atlanta Phase 1.0. Neighborhood revitalization funds were set to match the funding provided to Cycle Atlanta. Pedestrian infrastructure was set to 20% to mirror the amount of funding allocated in the Renew Atlanta Infrastructure Bond (City of Atlanta, 2016). Funding for Public Safety was allocated 15% to address safety concerns related to walking and using public transportation. Lastly, 5% was retained for Operations & Management to ensure the sustainability of the parking user fee program. This budget breakdown is provided as an example of how parking user fees can be allocated to support transportation initiatives. Additional evaluation by the Department of Public Works, Department of Planning and Community Development, Atlanta City Council - Transportation Committee, and citizen stakeholders is needed.

## 1. Public Safety

One of the initial funding allocations proposed for the revenue collected in year one is a 15% allocation to public safety. In this context, public safety is considered to be improvements to the public realm that increase both real and perceived safety. Interventions to increase public safety may include, but are not limited to: street lights that illuminate the sidewalk, safety cameras, emergency call boxes, and additional police officers. Increasing funding for public safety can help to provide safer travel options because it is a particular concern for walking and cycling. By funding improvements in public safety, commuters that are close to their work place can walk or bike to work in safety. In addition, increasing public safety can help to stimulate economic growth in the CBD of Atlanta. In the 2015 Metro Atlanta Speaks Survey conducted by the Atlanta Regional Commission, Crime was the second most common concern among residents in the Atlanta region (Atlanta Regional Commission, 2015). Utilizing a portion of the revenue collected to promote public safety therefore has the benefit of addressing the top two concerns in the Atlanta region: transportation and crime.

## 2. Pedestrian Infrastructure

All transportation trips begin and end with the pedestrian environment. As such, dedicating a portion of the revenue generated from the parking user fee to improving the pedestrian environment will benefit both motorists and pedestrians. A 20% allocation for improvements to the pedestrian environment is recommended. Pedestrian improvements can include sidewalk expansion and repair, adding street trees and vegetation for shading, providing street furniture, way-finding, ADA compliance, mid-block crossing signals, and signal timing that provides appropriate crossing times for pedestrians. These improvements have the benefit of providing pedestrians with an enhanced walking experience and can encourage people to walk for short trips instead of driving. Dedicating 20% of the revenue generated by parking user fees can also help to address the backlog of infrastructure improvements in the city of Atlanta.

## 3. Cycle Atlanta Phase 1.0 Funding

The Cycle Atlanta Plan is a supplement to the Connect Atlanta Plan and highlights potential cycling infrastructure enhancements in the city of Atlanta. While the Cycle Atlanta Plan is not the comprehensive plan for cycling in Atlanta, it does provide the City with a foundation for cycling infrastructure expansion. This study highlights five corridor projects that would increase bikeability throughout the city (Alta Planning + Design, 2013). By funding cycling improvements along the corridors identified in the Cycle Atlanta Plan, the city can take a major step forward to

its goal of being a bike friendly city. Allocating funding for cycling infrastructure will also benefit the City of Atlanta as it seeks to expand its Bikeshare program (Blau, 2015). To increase bike-ability in the city of Atlanta, 30% of the revenue generated from parking user fees was allocated to the Cycle Atlanta Phase 1.0 funding. With this amount allocated to cycling, the City of Atlanta could fund a major addition to the travel options in Atlanta in just one year.

#### 4. Neighborhood Revitalization Fund

Providing job-housing balance and increasing access to travel options are key factors in promoting increased mode share. By creating a neighborhood revitalization fund the City of Atlanta can provide funding that helps to develop land near transit, promote development in areas primarily used for parking, and create economic development opportunities throughout the city. A neighborhood revitalization fund can help to support urban resurgence and growth exponentially. Because revenue generated from parking user fees are not taken from the general budget, the City of Atlanta can fund revitalization projects without taking away from the City's general reserve. Allocating 30% of the revenue generated from parking user fees would enable the City of Atlanta to develop public private partnerships and stimulate growth in targeted areas. To achieve this goal, the Department of Public Works and the Department of Planning and Community Development should work together to identify investments that enhance livability and provide residents with travel alternatives.

#### 5. Operations and Management

To allow for a sustainable parking management program, 5% of the revenue generated from parking user fees is allocated to operations and management. Revenue allocated to operations and management can help to cover the cost associated with collecting revenue, tracking compliance of park-for-hire facilities, and staffing personnel. In addition, a portion of this revenue could be used to enhance the parking experience through SMART parking infrastructure at park-for-hire facilities. Smart parking infrastructure may include real time occupancy assessment at parking facilities, license plate recognition technology, guidance to parking near a desired destination, and easy payments through mobile devices.

### **Future Investments**

The allocation of revenue is provided to showcase the potential of parking user fees. With one year of revenue from parking user fees, the City of Atlanta can provide unprecedented support for public safety, pedestrian and cycling infrastructure, and neighborhood revitalization. This can be accomplished with minimal funding startup funding the City's general fund.



After year one, parking user fees can be allocated to projects that continue to encourage mode share and lower the need for parking. Future investments could include partial funding of transit expansion, renovation of transit stations, providing bus shelters, improving signal timing, and addressing the backlog of transportation infrastructure. Parking user fees should be implemented in addition to the 2016 MARTA and TSPLOST referenda (City of Atlanta, 2016).

### **Parking Benefit Districts**

As the City of Atlanta continues to modernize its approach to parking, one policy that should be explored is the implementation of parking benefit districts. In cities such as Old Pasadena, CA, Austin, TX, and Washington, D.C., parking benefit districts have been implemented as a way to handling parking spillover and generating funds for infrastructure improvements (Alpert, 2008; City of Austin, 2016; Kolozsvari & Shoup, 2003). These cities have been able to utilize parking benefit districts as an economic development tool that has sparked revitalization and neighborhood enhancements.

The most notable case of a parking benefit district is Old Pasadena, CA. In 1993, Old Pasadena began to charge for on-street parking. As an alternative to placing the revenue generated from on-street parking into the general fund, they allowed for the revenue to be placed in a separate enterprise fund (Kolozsvari & Shoup, 2003). The revenue from parking was used to pay for street furniture, trees, tree gates, and historic lighting fixtures. The City of Old Pasadena invested the parking revenue back into the neighborhoods where the revenue was generated. Improvements to the area were targeted to streets where meters were present and the spending priorities were set by the Old Pasadena Parking Meter Zone Advisory Board. This investment yielded great returns and Old Pasadena saw an increase in visitors to the area. Businesses experienced an increase in customers and Old Pasadena had a resurgence of its business district.

In the article *Turning Small Change into Big Changes* authors Douglas Kolozsvari and Donald Shoup note that:

Dedicating the parking meter revenue to Old Pasadena has thus created a “virtuous cycle” of continuing improvements. The meter revenue pays for public improvements, the public improvements attract more visitors who pay for curb parking, and more meter revenue is then available to pay for more public improvements (Kolozsvari & Shoup, 2003).

Reinvesting the revenue generated from on-street parking and ensuring parking availability for neighborhood residents provides for a powerful approach to on-street parking expansion. Applying parking benefit districts in the city of Atlanta can yield positive outcomes for

neighborhoods that charge for parking. Enabling legislation for parking benefit districts would require an amendment to Section 150-135 of the municipal code, which states:

All the revenue derived from the installation and use of parking meters shall be used exclusively for the lease or purchase of the proper installations, for maintenance and operation of the meters and for traffic engineering and control. (Code 1977, § 13-2253)

A percentage of the revenue generated in neighborhood parking benefit districts should be allocated to address specific projects within their respective districts. The remainder of the revenue generated should continue to be allocated for the maintenance and operation of the on-street parking system.

To demonstrate the potential of parking benefit districts in the city of Atlanta the neighborhoods of Castleberry Hill and Grant Park were evaluated. These two neighborhoods were selected based on their proximity to the Central Business District of Atlanta and increases in commercial activity. Currently, there are no metered spaces in these two neighborhoods. Both neighborhoods have thriving commercial areas that experience high parking demand. In addition, competition for parking has been noted as a point of concern for each neighborhood. These neighborhoods are also experiencing rapid growth in or near their location. Charging for parking on commercial streets, while allowing residents with decals to parking in the area free of charge, can result in a new source of revenue for local improvements.

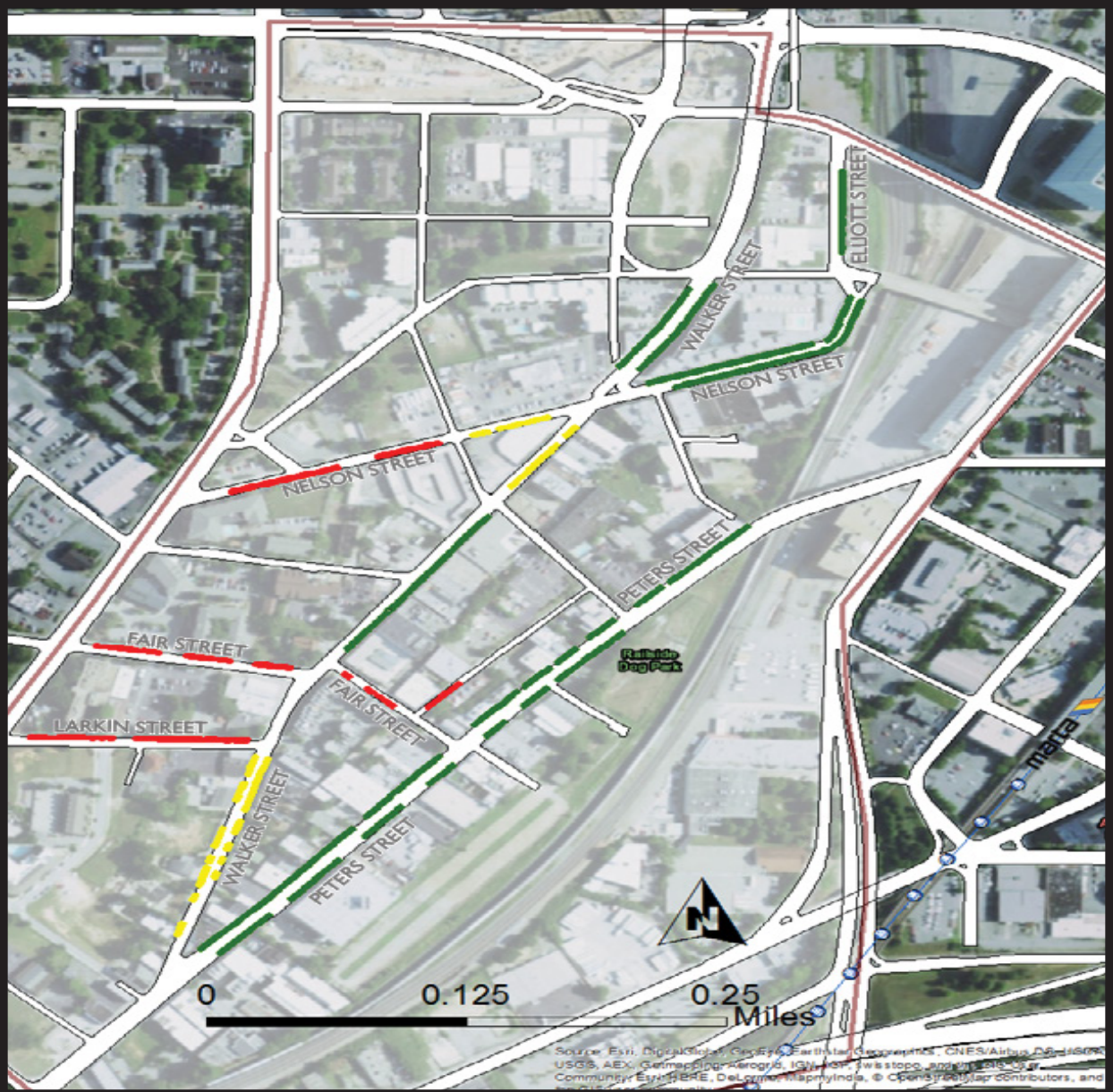
Figure 5.2 models the expansion of metered parking in the Castleberry Hills neighborhood. Metered parking locations are colored as green, residential only spaces accessed with a decal or vehicle placard are red, and mixed metered spaces that allow for residents to park for free but charge visitors for parking are yellow. Table 5.7 provides a breakdown of the number and type of spaces under this on-street parking expansion. Parking spaces were designated based on their proximity to commercial land use and their access to off-street parking. Google Maps was used to evaluate land use and off-street parking capacity. Block faces adjacent to commercial land use were designated as metered spaces. Mixed metered spaces were designated for block faces near commercial land use but had limited off-street parking access. Residential parking spaces were designated for block faces with predominately residential land use.

Table 5.7. Castleberry Hill – Proposed Parking Benefit District

Space Type	# of Spaces	# of Meters	Revenue/Space	Annual Revenue
Metered	232	33	\$3,536	\$820,300
Mixed Metered	47	7	\$2,080	\$97,700
Residential Only	66	Signage	\$20	\$1,300
<b>Total</b>	345	40	N/A	\$919,300

PARKING BENEFIT DISTRICT

CASTLEBERRY HILL



**LEGEND: PARKING TYPE**





-  METERED PARKING
-  MIXED METERED PARKING
-  RESIDENTIAL ONLY PARKING
-  NEIGHBORHOOD BORDER

Figure 5.2 Castleberry Hill – Proposed Parking Benefit District

Based on the meter allocation detailed in Table 5.7 the potential revenue of a parking space was calculated. The following conditions were used to model revenue potential for parking benefit districts: an hourly parking rate of \$2.00 per hour, operational time of 8 hours each weekday, and an 85 percent or 50 percent occupancy rate. The projected revenues also assume that there is no change in vehicle use or occupancy. Based on these factors, one curb parking space would yield about \$3,500 per year (SCTLC, 2003). Applying this revenue rate to the number of metered spaces in modeled Castleberry Hill, a parking benefit district in this neighborhood could yield \$919,000 annually in revenue for neighborhood improvements. This projection is based on an 85% occupancy rate for metered parking spaces and a 50% occupancy rate for metered spaces with residential permitted parking. Investing in neighborhood improvements would likely produce the virtuous cycle seen in Old Pasadena. Investing in the Castleberry Hill neighborhood is particularly important to growth and development because of its proximity to the newly developed Mercedes-Benz Stadium and the proposed Castleberry Park/ Hard Rock Hotel development. Creating a parking benefit district in this neighborhood would benefit the residents of this neighborhood through the allocation of metered revenue while still allowing the City of Atlanta to collect revenue from parking citations.

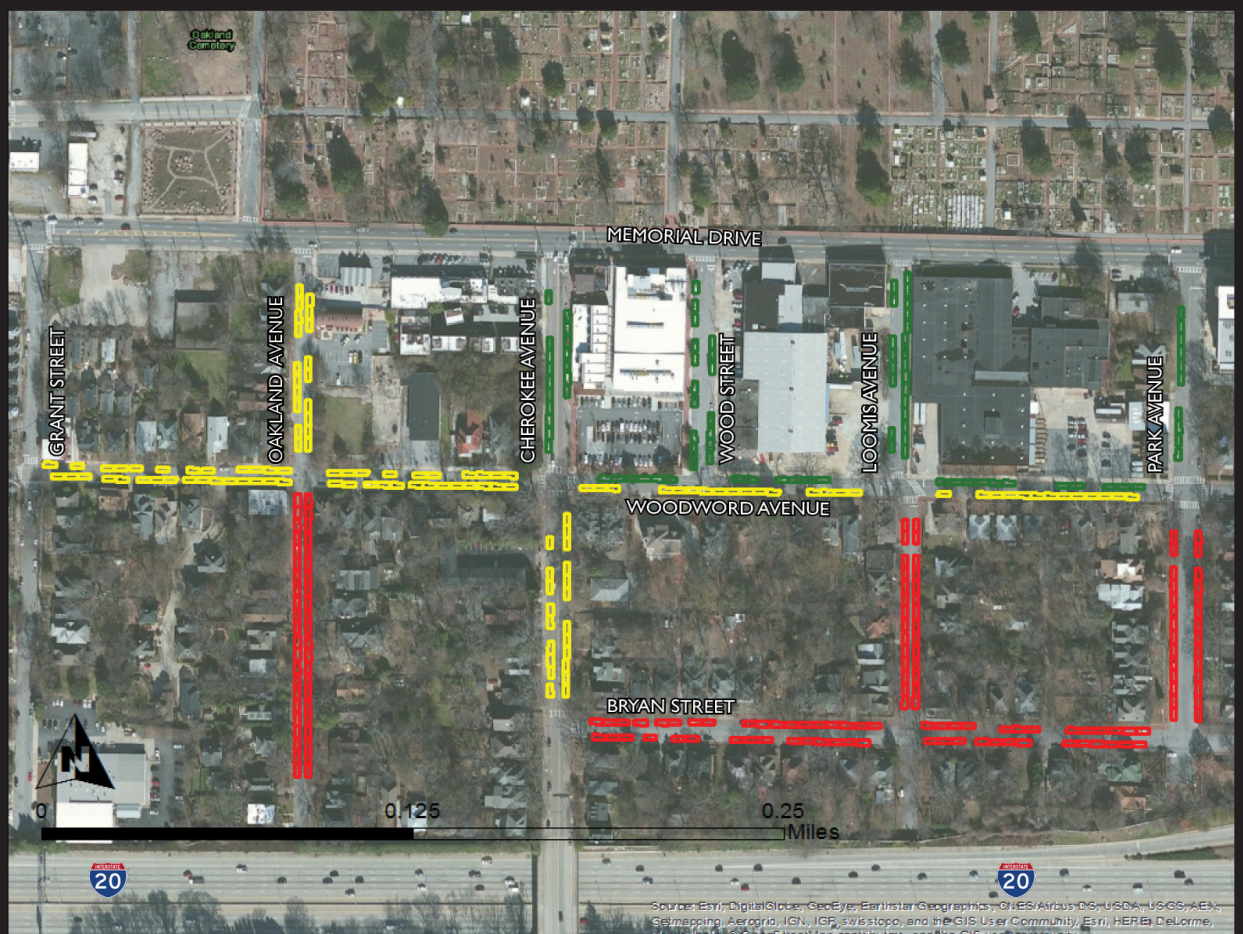
Similarly, a parking benefit district in the Grant Park neighborhood yields great potential for local improvements. Figure 5.3 models a metered parking expansion in the Grant Park neighborhoods. As indicated previously, green spaces are metered, red spaces are residential permit spaces accessed with a decal or vehicle placard, and yellow spaces are metered but allow for residents with decals to park free of charge. Spaces that are not allocated in this map have not been assessed in this evaluation. Table 5.8 provides a breakdown of the parking spaces in the Grant Park area. Based on this modeled meter expansion, a parking benefit district in the Grant Park neighborhood could generate \$588,000 annually for local improvements. This projection is based on an 85% occupancy rate for metered parking spaces and a 50% occupancy rate for metered spaces with residential permitted parking. In addition, the revenue collected from residential parking permits has been included in the potential annual revenue.

Table 5.8. Grant Park – Proposed Parking Benefit District

Space Type	# of Spaces	# of Meters	Revenue/Space	Annual Revenue
Metered	93	13	\$3,536	\$328,800
Mixed Metered	123	17	\$2,080	\$255,800
Residential Only	167	Signage	\$20	\$3,300
<b>Total</b>	383	30	N/A	\$587,900

PARKING BENEFIT DISTRICT

GRANT PARK



**LEGEND: PARKING TYPE**





-  METERED PARKING
-  MIXED METERED PARKING
-  RESIDENTIAL ONLY PARKING
-  NEIGHBORHOOD BORDER

Figure 5.3 Grant Park – Proposed Parking Benefit District

## Comparing On-street Parking Alternatives

When evaluating changes to the on-street parking system, it is critical to compare current and potential conditions. For many neighborhoods in Atlanta, on-street parking is free. Converting free on-street parking to metered parking will likely be met with resistance. However, if residents are able to directly compare different on-street parking system types it can facilitate the objective evaluation of parking alternatives. Table 5.9 provides a table for comparing on-street parking systems alternatives. The approaches to on-street parking are: Free Parking (Business as Usual), Metered Parking, Residential Parking Permits, and Parking Benefit Districts. When compared directly it becomes clear that no form of on-street parking can guarantee a resident a parking space. Even the most exclusive form of on-street parking, residential parking permits, can result in a desired space being occupied. Other metrics for evaluating parking reveal that parking benefit districts have the advantage of generating revenue for the City and local neighborhoods. Parking benefit districts are also compatible with smart parking technologies, help to manage travel demand, support commercial business districts, and facilitate infrastructure investments.

Table 5.9. Comparison of Approaches to On-street Parking

Parking Feature	Parking Approach			
	Free Parking	Metered Parking	Residential Parking Permit	Parking Benefit District
Guaranteed parking space	No	No	No	No
Supports Small Businesses	No	Yes	No	Yes
Neighborhood Revitalization	No	No	No	Yes
Incentivize Automobile Use	Yes	No	Yes	No
SMART Parking Compatible	No	Yes	No	Yes
Enforcement Required	No	Yes	Yes	Yes
Meter Installation Required	No	Yes	No	Yes
Revenue Potential per 100 spaces	0	\$353K	\$2K	\$353K
Generates Revenue for the City	No	Yes	Yes	Yes
Generates Neighborhood Revenue	No	No	No	Yes

## CHAPTER 6

### CONCLUSIONS, IMPACT, AND RECOMMENDATIONS

#### Conclusions

This research provides the first detailed look of parking in the Central Business District of Atlanta, GA. Prior to this research, parking evaluations were limited to Downtown and Midtown as two separate locations. Future research should evaluate the central business district as a whole and conduct sub-analysis for Downtown and Midtown. In addition, data on the parking behaviors of Buckhead should be collected. This study assessed the current policies associated with managing about 155,000 parking spaces in the central business district of Atlanta, GA. These parking spaces are provided across 746 parking facilities in the Downtown and Midtown areas. On a typical business day, a motorist can park at one of these facilities for an average of \$11.74 per day or \$1.47 per hour, indicating that parking is in abundant supply. In addition, there are over 11,000 parking spaces in which a motorist can park in the central business district for the day at a cost that is less than or equal to a round-trip transit fare. Even though 77.6% of the metro Atlanta population drives alone to work, on average only 59% of the parking Downtown and 86% of the parking in Midtown is used. The current of parking prices impact traffic congestion, increase vehicle miles traveled, and potentially impact energy and environmental outcomes.

Although parking is abundant, parking minimums in zoning ordinances set the stage for continued increases in the parking supply over time. After evaluating eight development sites in the Midtown area, this study concluded that although these developments will provide additional density in a transit rich area, they will still double the parking supply provided at these locations, all of which may not be needed or efficiently used.

Outside of the central business district, parking is developed without restraint. Minimum parking requirements result in the mandatory creation of parking. Because parking is required for every land use in Atlanta, the parking supply provided will likely be four times the number of vehicles operating in the city of Atlanta. This results in a parking supply that is double the size of the entire Atlanta population. If the city of Atlanta ever hopes to breakaway from its dependency on the automobile, the policies that govern parking will need an overhaul.

If the City of Atlanta immediately eliminated minimum parking requirements from the zoning ordinances, the following outcomes are likely to occur: parking spaces will continue to be included in developments based on the market demand for parking, developers will charge for

the parking spaces to offset development costs, residents would decide whether they are willing to pay for parking, and increased density goals can be achieved. If the City of Atlanta set parking maximums at transit oriented development sites and the urban core, the City could ensure that parking created does not exceed desired thresholds. Applying parking maximums can be implemented as a part of the overhaul for the City's Zoning Code. Requiring shared parking agreements for all future developments can result in lower amounts of new parking spaces. Requiring developers to request for parking development separately from their primary use can facilitate the development of shared parking agreements. Applying for parking separately allow for the direct evaluation of the parking supply and address concerns related to the design, placement, quality, and quantity of parking. Requiring shared parking as the first approach to satisfying parking demand can be incorporated into the building permitting process. Separating parking from the primarily land use can allow for direct conversations about the parking supply and parking management strategies without jeopardizing future development.

Parking comes at a cost. When parking is provided abundantly, and the cost of parking does not reflect its true cost, parking can affect mode choice and incentivize automobile usage. Actual cost should be charge so consumers can make rational decisions about where and how they travel. Implementing parking user fees in the city of Atlanta can begin to close the gap between the current cost of parking and the true cost of parking. Implementing parking user fees may be a new concept for many cities. Having an understanding of parking user fees and the potential revenue they can generate may help to build support for their implementation. The revenue generated from user fees will depend on the number of daily transactions, the user fee rate selected, and demand elasticity (parking demand decreases as price increases). Parking user fees have the potential to generate \$28 million annually and \$1.2 billion over the next 40 years. These funds can be used to mitigate the effects of parking and lower the need for parking. For example, parking user fees can be used to fund sidewalk construction, enhance bikeability by re-striping roads with bike-lanes, and increase tree canopy. One benefit of parking user fees is that they are targeted to motorists that pay for parking. Charging the true cost of parking can help to change people's travel behavior and lower congestion in the city of Atlanta. If people ride transit, bike, or walk as their mode of transportation then they will not have to pay any additional cost, which will incentivize sustainable choices for travel and increase Atlanta's use of alternative modes.

Implementing neighborhood parking benefit districts during the expansion of the City's on-street parking system can facilitate the acceptance of charging for parking. Neighborhoods



impacted by on-street parking system expansion can negotiate the use of parking benefit districts in their area. Parking benefit districts reinvest the revenue from parking into the neighborhoods in which the revenues are collected. Revenue generated in neighborhood parking benefit districts can support targeted neighborhood improvements and attract new business to an area. Parking benefit districts have created virtuous cycles of continuous improvements in other cities and can serve as a great tool for improving Atlanta neighborhoods. Benefit districts in the Castleberry Hill and Grant Park neighborhoods could respectively raise \$919,000 and \$588,000 annually for improvements. Approval for the creation of parking benefit districts would require collaboration between the Atlanta City Council, Department of Public Works, Department of Planning and Community Development, and other departments that manage revenue obtained from the on-street parking system. A collaborative working group that consists of the Atlanta City Council Transportation committee, the Department of Public Works Parking Manager, the Office of Mobility Transportation Planner, and financial analyst can evaluate transportation priorities and assess policy changes that lead to neighborhood improvement.

The City of Atlanta, like many cities throughout the United States, is at a crossroads. After half a century of developing around the automobile, Atlanta has the opportunity to shift its approach to parking. As people and businesses return to the urban core, the city is re-emergent. Millennials and Baby Boomers have both expressed a demand for vibrant multi-modal cities. As Atlanta continues to see rapid development in its urban core, decisions about travel demand management and multi-modal infrastructure will be key. In the face of this changing dynamic, resurging cities should implement policies for lasting change and leverage parking resources to support urban revitalization and growth.

### **Impact**

Making decisions about parking policies and programs, is like making decisions about the soul and character of a city. With the resurgence of cities as communities of choice for Millennials, cities are at a fork in the road. Cities can either continue to develop in an auto-centric or taken an alternative pathway. Parking, like every other feature in a city, evolves. Parking accumulates over time and with each development we decide how our cities will look, feel, and how people will travel. This research provides an assessment of the potential impacts of parking policy implementation on the City of Atlanta. Such analyses can help the City of Atlanta explore the potential impacts of parking policy implementation. When making data-driven decisions for parking policy, the City can assess the impact of current approaches to parking and weigh those

approaches against alternative strategies. Having a template for impact analysis may prevent the City of Atlanta from making reactionary decisions about the future of parking.

The impact of this research can be broken down into five specific outcomes. This research provides 1) a summary of parking infrastructure and policy in the CBD of Atlanta, 2) a suite of policy options for cities that are interested in shaping their parking system, 3) an approach for evaluating off-street parking facilities, 4) an estimate of projecting revenues collected from parking user fees, and 5) an example of the potential impacts of policy implementation in Atlanta. The suite of policy options showcased in this these provide strategies that cities can use to go beyond parking minimums. By understanding the options that are available, cities can equip themselves with the tools necessary to assess and revise policy with respect to parking.

### **Recommendations**

Through the implementation of innovative parking policies, the City of Atlanta can create a parking system that promotes vibrancy in the urban core, meets the parking needs of motorists, and establishes a source of revenue. The City of Atlanta should establish a Parking Enterprise Fund to manage revenue collection and allocation. Developing a transparent platform that allows citizens oversight can help to build trust between the City of Atlanta and concerned residents. The parking policies and strategies discussed in this these can be matched to specific city goals listed below.

#### **Parking Supply Management**

- Remove parking minimums
- Require shared parking
- Set parking maximums at TOD locations and in the urban core
- Charge per space levies to provides
- Consolidate underutilized parking facilities
- Establish design and placement standards

#### **Parking Demand Management**

- Charge for parking
- Establish parking demand through analyses that do not assume free parking
- Set user fees at to charge the true cost of parking
- Fund travel alternatives and transit subsidies
- Decouple parking from lease agreements
- Promote parking cash outs
- Invest in public-private partnerships that increase job-housing balance
- Use smart parking technology to communicate with motorists
- Promote car shares, rideshares, bike shares, and transit usage

- Utilize demand responsive pricing

### **Parking Externality Mitigation**

- Set user fees to charge the true cost of parking
- Reinvest revenue into neighborhood improvements
- Fund travel alternatives and transit subsidies

### **Community Support**

- Enable parking benefit districts
- Reinvest revenue into neighborhood improvements
- Create a Parking Enterprise Fund to track revenue
- Developing a transparent platform to inform citizens
- Include citizens into the decision making process for allocation of revenue
- Require that revenue allocation have a direct relationship to parking management and mitigation

### **Technology Integration**

- Use smart parking technology to communicate with motorists
- Promote car shares, rideshares, bike shares, and transit usage
- Utilize demand responsive pricing

**APPENDIX A**  
**OFF-STREET PARKING INVENTORY QUESTIONNAIRE**

2015 Off-Street Parking Inventory for Downtown Atlanta, GA

Parking Facility ID: \_\_\_\_\_

**Parking Inventory Questionnaire**

<b>Section 1</b>	
Inventory Date: _____	Inventory Time: _____ Inventory Day _____
Inventory Completed By: _____	
Inventory Updated On: _____	
Inventory Updated By: _____	
<b>Section 2: Parking Facility</b>	
Parking Facility ID#: _____	Parking Zone: _____
Parking Facility Name: _____	
Parking Address Number: _____	Parking Address Street: _____
Parking Facility City: <u>ATLANTA</u> State: <u>GA</u> Zip Code: _____	
Parking Facility Type: <input type="checkbox"/> Surface Parking Lot <input type="checkbox"/> Parking Garage <input type="checkbox"/> Hotel <input type="checkbox"/> Work Place <input type="checkbox"/> Residential <input type="checkbox"/> Other Specify: _____	
Parking Group Number: _____	Parking Operator: _____
Parking Website: _____	
Parking Access Point(s): How many access points/curb cuts are there? _____	
Parking Access Point(s) Location: _____	
Attendant on Duty	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable
Parking Enforcement Type	<input type="checkbox"/> Booting <input type="checkbox"/> Ticketing <input type="checkbox"/> Towing <input type="checkbox"/> Other Specify: _____
Parking Enforcement Cost	\$: _____
Parking Fee Collection Method:	<input type="checkbox"/> Cashier (Pay on Entry) <input type="checkbox"/> Cashier (Pay on Exit) <input type="checkbox"/> Cashier
	<input type="checkbox"/> Coin Box <input type="checkbox"/> Cash Collector <input type="checkbox"/> Gated Pay Station <input type="checkbox"/> Pay Station
	<input type="checkbox"/> Valet <input type="checkbox"/> Multi-Metered <input type="checkbox"/> Other
	Other Fee Collection Method Specify: _____
Early Bird Option Available	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable
Early Bird Parking Rate	\$ _____
Early Bird Entry Time	_____
Early Bird Exit Time	_____
Payment Methods Accepted	<input type="checkbox"/> Cash Only <input type="checkbox"/> Cash and Card <input type="checkbox"/> Coin Only
	<input type="checkbox"/> Visa <input type="checkbox"/> MasterCard <input type="checkbox"/> Discover <input type="checkbox"/> American Express <input type="checkbox"/> Other
	Other Payment Methods Accepted: _____
Payment by App?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable
If Yes, which app?	_____
Parking Validation?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable
If Yes, which companies/businesses do you validate?	_____ _____ _____
	_____

2015 Off-Street Parking Inventory for Downtown Atlanta, GA

Parking Facility ID: \_\_\_\_\_

Are there Electric Charging Stations present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable
If yes, how many are present at the facility? _____	
Additional cost for usage? _____	
Type of electric charging station: _____	
How many are in us at time of inventory? _____	
<b>Section 3. Parking Rates</b>	
First time period (in Mins or Hrs): _____	First time period rate: \$ _____
Second time period (in Mins or Hrs): _____	Second time period rate: \$ _____
Third time period (in Mins or Hrs): _____	Third time period rate: \$ _____
Fourth time period (in Mins or Hrs): _____	Fourth time period rate: \$ _____
Fifth time period (in Mins or Hrs): _____	Fifth time period rate: \$ _____
Sixth time period (in Mins or Hrs): _____	Sixth time period rate: \$ _____
Mandatory Entry Rate: \$ _____ (Refers to parking facilities that charge standard rate on entry)	
Maximum Daily Rate: \$ _____ (Refers to parking facility that cap maximum daily expense)	
Lost Ticket Rate: \$ _____	
<b>Section 5: Carpool Parking</b>	
1. Does the facility have carpool reserved parking? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable	
	If yes, how many passengers make up a carpool vehicle? _____
	If yes, how many parking spaces are reserved for carpool vehicles? _____
2. Are there special rates for carpool vehicles? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable	
First time period (in Mins or Hrs): _____	First time period rate: \$ _____
Second time period (in Mins or Hrs): _____	Second time period rate: \$ _____
Third time period (in Mins or Hrs): _____	Third time period rate: \$ _____
Fourth time period (in Mins or Hrs): _____	Fourth time period rate: \$ _____
Fifth time period (in Mins or Hrs): _____	Fifth time period rate: \$ _____
Sixth time period (in Mins or Hrs): _____	Sixth time period rate: \$ _____
Mandatory Entry Rate: \$ _____ (Refers to parking facilities that charge standard rate on entry)	
Maximum Daily Rate: \$ _____ (Refers to parking facility that cap maximum daily expense)	
Lost Ticket Rate: \$ _____	
<b>Section 5: ADA Facilities</b>	
1. ADA Parking: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable	
	If Yes, number of ADA Parking Spaces? _____
2. ADA Parking Designated? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable	
3. ADA Ramp(s) present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable	
4. Special Rates for persons with disabilities: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable	
<b>Section 6: Bicycle Parking</b>	
1. Bicycle Parking: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable	
	1a. If Yes, number of Bicycle Parking Spaces? _____
	1b. If Yes, has flat fix station? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable
	1c. If Yes, has security lighting? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable
2. Are there lockers for bicycles? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undetermined <input type="checkbox"/> Not Applicable	

2015 Off-Street Parking Inventory for Downtown Atlanta, GA

Parking Facility ID: \_\_\_\_\_

<b>Section 4: Parking Supply and Demand</b>			
Total Parking Spaces at Parking Facility: _____			
Parking Spaces Tally <b>Deck</b> Spaces:			
Parking Spaces Tally <b>Lot</b> Spaces:			
Total Occupancy at time of Inventory: _____			
Time of Occupancy Assessment: _____ Date of Occupancy Assessment: _____			
Day of the Week of Occupancy Assessment: _____			
Fulton	Cobb	DeKalb	Gwinnett
Clayton	Fayette	Douglas	Cherokee
Henry	Rockdale	Other Counties	Out of State
Unknown/Unmarked		Write-Ins	

**APPENDIX B**  
**CITY OF CHICAGO - PARKING OCCUPANCY TAX**

**Chicago**  
D E C O D E D

4 Businesses, Occupations And Consumer Protection  
4-236 Parking Lot And Garage Operations Tax  
§ 4-236-020 Tax imposed

§ 4-236-020

**Tax imposed**

a.

Except as otherwise provided by this Section 4-236-020, there is imposed upon the use and privilege of parking a motor vehicle in or upon any parking lot or garage in the City of Chicago a tax at the applicable rate set forth in subsection (d).

(/4-236-020/#a)

b.

The ultimate incidence of and liability for payment of the tax is on the person who seeks the privilege of occupying space in or upon the parking lot or garage (such person hereinafter referred to as the “recipient”).

(/4-236-020/#b)

c.

The tax imposed by this chapter shall not apply to residential off-street parking of house or apartment tenants or condominiums, wherein an arrangement for such parking is provided in the house or apartment lease or in a separate writing between the landlord and tenant, or if in a condominium between the condominium association and the owner, occupant or guest of a unit, whether the parking charge is payable to the landlord, condominium association, or to the operator of the parking lot or garage.

(/4-236-020/#c)

d.

(i) The tax imposed by this chapter shall not apply if the charge or fee imposed for the privilege of parking does not exceed \$2.00 for a 24-hour period or less, or \$10.00 for a weekly period or \$40.00 for a monthly period.

(/4-236-020/#d)

ii.

The tax imposed by this chapter for the privilege of parking for a 24-hour period or less shall be 20% of the charge or fee paid for parking on a Saturday or Sunday; and 22% of the charge or fee paid for parking on a Monday, Tuesday, Wednesday, Thursday or Friday.

(/4-236-020/#ii)

iii.

The tax imposed by this chapter for the privilege of parking on a weekly basis shall be 22% of the charge or fee paid for parking.

(/4-236-020/#iii)

iv.

The tax imposed by this chapter for the privilege of parking on a monthly basis shall be 22% of the charge or fee paid for parking.

(/4-236-020/#iv)

v.

The tax rates set forth in subsections (d)(ii) – (iv) shall be deemed to apply to the privilege of parking a motor vehicle in a parking lot or garage unless the taxpayer or tax collector keeps accurate and complete books and records as required by this chapter showing that no tax applies.

(/4-236-020/#v)

e.



The tax imposed by this chapter shall be paid in addition to any and all other taxes. It shall be the duty of the operator of every parking lot or garage to secure the tax from the recipient of the parking privilege and to remit the tax to the department of finance under procedures prescribed by the comptroller of revenue or as otherwise provided in this chapter.

(/4-236-020/#e)

f.

Every person required to collect the tax imposed by this chapter shall secure the tax from the recipient at the time the price, charge or rent to which it applies is collected. If the recipient is given any invoice, receipt or other statement of the price, charge or rent paid or payable, the tax shall be stated, charged and shown separately on the document.

(/4-236-020/#f)

g.

Hospitals shall be exempt from the collection of any tax from their employees as provided in this chapter.

(/4-236-020/#g)

(Added Coun. J. 12-9-92, p. 25465; Amend Coun. J. 1-12-93, p. 27638; Amend Coun. J. 10-7-93, p. 39594; Amend Coun. J. 11-17-93, p. 42192; Amend Coun. J. 11-10-94, p. 59125; Amend Coun. J. 11-7-96, p. 32073; Amend Coun. J. 11-13-96, p. 34040; Amend Coun. J. 3-10-99, p. 91091; Amend Coun. J. 11-10-99, p. 14998, § 1.2; Amend Coun. J. 11-17-99, p. 17487, § 1.2; Amend Coun. J. 12-15-04, p. 39840, § 1; Amend Coun. J. 11-19-08, p. 48243, Art. I, § 1; Amend Coun. J. 11-16-11, p. 13798, Art. I, § 4; Amend Coun. J. 11-16-11, p. 14596, Art. IV, § 1; Amend Coun. J. 4-10-13, p. 49553, § 1; Amend Coun. J. 11-19-14, p. 98063, § 5)

**APPENDIX C**  
**CITY OF MIAMI PARKING SURCHARGE ORDINANCE**



**City of Miami**  
**Legislation**  
**Ordinance: 13257**

**City Hall**  
**3500 Pan American**  
**Drive**  
**Miami, FL 33133**  
**[www.miami.gov.com](http://www.miami.gov.com)**

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**File Number: 11-00077**

**Final Action Date: 3/10/2011**

AN ORDINANCE OF THE MIAMI CITY COMMISSION AMENDING CHAPTER 35/ARTICLE IX OF THE CODE OF THE CITY OF MIAMI, FLORIDA, AS AMENDED, ENTITLED "MOTOR VEHICLES AND TRAFFIC/PARKING FACILITIES SURCHARGE," MORE PARTICULARLY BY AMENDING SECTIONS 35-346 AND 347 TO CLARIFY EXISTING LANGUAGE RELATING TO THE COLLECTION OF PARKING FACILITIES SURCHARGE AND PENALTIES AND ADDING A PROVISION FOR REPEAT OPERATOR VIOLATIONS; CONTAINING A SEVERABILITY CLAUSE AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Miami ("City") is authorized by Florida Statute 166.271 to collect a per vehicle surcharge for the sale, lease, or rental of space at parking facilities within the City; and

WHEREAS, the City is authorized to promote, protect, and improve the health, safety, and welfare of its citizens; and

WHEREAS, the City's current collection of the surcharge substantially reduces the City's ad valorem tax millage and improves transportation within the City; and

WHEREAS, the City wishes to ensure its current collection of the parking surcharge complies with the requirements of Florida Statute 166.271;

NOW, THEREFORE, BE IT ORDAINED BY THE COMMISSION OF .THE CITY OF MIAMI, FLORIDA:

Section 1. The recitals and findings contained in the Preamble to this Ordinance are adopted and incorporated as if fully set forth in this Section.

Section 2. Chapter 35/Article IX of the Code of the City of Miami, Florida, as amended, is amended in the following particulars:{1}

"CHAPTER 35  
MOTOR VEHICLES AND TRAFFIC

\* \* \* \* \*

ARTICLE IX. PARKING FACILITIES SURCHARGE

Sec. 35-342. Intent.

This article is intended to impose and levy a surcharge on the sale, lease or rental of space at parking facilities in the city at the rate of 15 percent of the revenues derived from any Fee, Charge or Exchange for the parking of a motor vehicle in or on any parking facility in the city for which a Fee, Charge or Exchange is made on an hourly, daily, weekly, monthly, yearly, event, validation programs, valet or any other basis. Revenues received as part of a daily, weekly, monthly, yearly, or event based rent without a separate Parking fee designation are also subject to this article. The net proceeds of the surcharge collected shall be deposited in the general fund subject to appropriation pursuant to the budget and fiscal provisions of the annual budget process.

\* \* \* \* \*

Sec. 35-344. Definitions.

As used in this article the following words and terms shall have the following meanings, unless another meaning is plainly intended:

*City* means the City of Miami, Florida.

*Daily* means the operation of a facility on any or all of the seven (7) days of the week, inclusive of holidays.

*Fee, charge or exchange* means the consideration paid including any and all compensation received or costs imposed, collected or exacted by the operator for parking in a parking facility including exchange, credit or otherwise. Fee, Charge or Exchange also means the consideration paid to the operator for goods and services ancillary to parking, if payment for such goods and services is mandatory and not optional to the user entering into a parking transaction. Examples of goods and services that may be considered ancillary to parking include, but are not limited to, food, beverages, air fresheners, windshield cleaning, car wash, tire pressure checks, jump starts, and emergency phone services. The intent of this definition is to impose the surcharge on all consideration paid by the user as a condition of entering into a parking transaction, irrespective of whether particular components of such consideration are characterized as compensation received or cost imposed for goods and services separate and apart from parking in an attempt to evade the surcharge.

*Garage* means any building or other structure in which motor vehicles may be parked, stored, housed, or kept for a Fee, Charge or Exchange.

*Manager* means the city manager of the city or his or her designee.

*Motor vehicle* means any self propelled vehicle operated or suitable for operation in a parking facility.

*Net proceeds* means the amount of the surcharge remitted to the city less the allocable cost of procedures used and expenses incurred by the city to enforce collection of the surcharge in an amount not to exceed five percent (5%).

*Open to the general public* means a facility which charges a Fee, Charge or Exchange for the use of any parking space therein regardless of when or how the Fee, Charge or Exchange is collected. The intent of this definition is to include all Parking Facilities including Parking Facilities that are used by anyone, including but not limited to any private tenant, who must pay a Fee, Charge or Exchange to the Operator of the Parking Facility except for those facilities described in Section 35-345.

*Operator* means any individual, partnership, association, corporation, or other entity which owns, controls, conducts, leases, operates, or causes to be operated a parking facility which offers parking accommodations for a fee, charge or exchange. The intent of this definition is to place the burden for collection of the surcharge on the owner of the facility and not the entity which operates the facility if different from the owner.

*Parking* means the parking, storing, housing or keeping of a motor vehicle.

*Parking facility* means any use in whole or in part of any space, plot, place, lot, parcel, yard, enclosure, parking lot, garage, street, building or structure that is open to the general public at which motor vehicles may be housed, stored, kept, or parked for which any Fee, Charge or Exchange is made, no matter how the Fee, Charge or Exchange is collected.

*Parking lot* means any outdoor area or space motor vehicles may be parked, stored, housed or kept for a Fee, Charge or Exchange.

*Revenues* means, any and all revenue, to include the entire amount of compensation in whatever form, exchange or otherwise, to be determined according to generally accepted accounting principles, derived directly or indirectly from or in connection with the Parking operation of the parking facility.

*Surcharge* means the parking facility's surcharge expressed as a percentage or in dollars.

*Transaction* - means the parking, storing, housing or keeping of a motor vehicle in a parking facility, in the city, Fee, Charge or Exchange.

#### Sec. 35-345. Applicability of parking facilities surcharge.

This article shall be uniformly applicable to all parking in parking facilities in the city, exclusive of residential parking of tenants or residents, in apartments, condominiums or co-operatives where parking is provided pursuant to a lease or in a separate writing between the apartment building owner, condominium or cooperative and the tenants or residents, whether a parking charge is payable to the apartment owner, condominium or cooperative or to the operator of a residential parking facility. This article shall not apply to any Parking Facilities located in any airports, seaports, county administration buildings or other projects defined under F.S. 125.011 and 125.015.

#### Sec. 35-346. Collection of the parking facilities surcharge.

(a) Surcharge amounts due pursuant to this article shall be collected by the operator of a parking Facility at the time of, and in addition to, collection of any other amounts for the parking of a motor vehicle in a parking facility, whether charge is made on an hourly, daily, weekly, monthly, yearly, event, validation programs, valet or any other basis. All operators shall be required to maintain a valid operational license. The local business tax receipt of an operator shall be, revoked upon the failure to remit the surcharge amounts for three consecutive months. No operator shall be permitted to operate the parking facility until all arrears are paid.

(b) ~~No later than the 20th day of each calendar month, the operator of every parking facility shall remit to the manager the funds collected pursuant to this surcharge, net of refunds, for the preceding calendar month.~~ The operator of every parking facility shall remit funds collected pursuant to this surcharge, net of refunds, for the preceding calendar month; payments must be received by the City of Miami by the 20th day of each calendar month. Each monthly remittance will be accompanied by such reports as may be prescribed by the manager on forms identifying for each parking facility, the name, address, account number, capacity, parking charges or fees, or rate schedule, number and type of transactions and such other information as may be necessary or convenient to fully calculate the surcharge.

\* \* \* \* \*

Sec. 35-347. Failure to comply; penalties.

(a) The operator of a parking facility who:

- (1) Fails, neglects or refuses to collect the surcharge; or
- (2) Fails, neglects or refuses to remit the surcharge; or
- (3) Fails, neglects or refuses to keep accurate records; or
- (4) Submits any incomplete, false or fraudulent return; or
- (5) Refuses to permit the manager to examine books, records and papers relating to the surcharge; or
- (6) Fails to fully comply with any or all rules or regulations promulgated by the manager pursuant to the authority contained herein, or to keep complete and proper records as required, shall be subject to the following penalties for each offense:

- (i) Have his or her local business tax receipt revoked; and/or
- (ii) Have a lien placed upon the parking facility for the sums owed plus interest pursuant to law; and/or
- (iii) Be subject to an administrative fine in the amount of \$500.00; and/or
- (iv) Be required to comply with stricter reporting requirements.

(b) The operator of a parking facility who:

- (1) Has outstanding surcharge payments for three (3) months; or
- (2) Has outstanding penalty and interest payments for three (3) months; or
- (3) Fails to maintain complete and accurate records as stipulated by the ordinance; or
- (4) Fails to comply after receiving two (2) notifications regarding compliance with the ordinance; or
- (5) Fails to comply with an audit request after the manager has reasonably attempted to schedule such audit shall be subject to additional reporting requirements including:

(i) The operator of the parking facility will be required to register parking slips, receipts, chits, tickets or the like with the manager.

(ii) The operator of the parking facility will be required to complete and submit a "Parking Surcharge Recap Monthly Report."

(iii) The operator of the parking facility may be required to install parking revenue control equipment in said facility, as approved by the City Manager or City Commission.

(iv) The operator of the parking facility may be required to cease operation for a period of thirty (30) days.

(c) Repeat operator violations:

The operator of the parking facility who:

- 1) Has been found to have underreported parking revenue or parking surcharge amounts; or
- (2) Has been found to not maintain complete and accurate records as stipulated by the ordinance; or
- (3) Has been assessed an administrative fine more than once; or
- (4) Has been found violating any part of Section 35-347 of the Surcharge Ordinance more than once shall be subject to:
  - (i) The operator shall continue to be subject to all remedies noted in (a)(6) of Section 35-347.
  - (ii) The operator of the parking facility shall be required to cease operation for a period of thirty (30)

days.

(iii) The operator of the parking facility shall be required to install parking revenue control equipment which will monitor and count the number of vehicles admitted to and leaving from a parking facility. This equipment shall be approved by the City Manager or City Commission. This type of equipment shall have entrance and exit counters that count every vehicle that enters and exits a parking facility and shall include non-resettable, continuous counters. The equipment shall be used and effective during operating hours.

(d) Further, the city is authorized to seek injunctive or other equitable relief to enforce compliance with this article.

\* \* \* \*"

Section 3. If any section, part of a section, paragraph, clause, phrase or word of this Ordinance is declared invalid, the remaining provisions of this Ordinance shall not be affected .

Section 4. This Ordinance shall become effective thirty (30) days after final reading and adoption thereof.{2}

**Footnotes:**

{1} Words/and or figures stricken through shall be deleted. Underscored words and/or figures shall be added. The remaining provisions are now in effect and remain unchanged. Asterisks indicate omitted and unchanged material.

{2} This Ordinance shall become effective as specified herein unless vetoed by the Mayor within ten days from the date it was passed and adopted. If the Mayor vetoes this Ordinance, it shall become effective immediately upon override of the veto by the City Commission or upon the effective date stated herein, whichever is later.

## APPENDIX D

### CITY OF LOS ANGELES PARKING OCCUPANCY TAX BALLOT MEASURE



FORM GEN. 160

CITY OF LOS ANGELES  
INTER-DEPARTMENTAL CORRESPONDENCE

0160-00323-0051

Date: October 17, 2012

To: Antonio R. Villaraigosa, Mayor  
Herb J. Wesson, Council President and Chair, Rules, Elections and Intergovernmental Relations Committee

From: Miguel A. Santana, City Administrative Officer   
Gerry F. Miller, Chief Legislative Analyst 

Subject: **PARKING OCCUPANCY TAX BALLOT MEASURE (C.F. No. 11-1357-S1)**

#### Summary

On August 21, 2012, Council held its annual Revenue Day meeting to consider opportunities to maximize existing revenue and to identify new revenue sources (C.F. No. 11-1357-S1). Council instructed the Offices of the City Administrative Officer and Chief Legislative Analyst, with the assistance of the City Attorney, to provide an analysis of a proposed revenue ballot measure to increase the Parking Occupancy Tax rate and to include necessary recommendations. A second report concerning an increase to the documentary transfer tax is submitted under separate cover.

Though the City has made efforts to reduce future deficits through spending reductions and increasing revenues within the limits imposed by Proposition 218, it still faces a projected shortfall of \$216 million in 2013-14. Increasing the Parking Occupancy Tax will provide an ongoing revenue stream to help address this and future deficits. The City hired Beacon Economics to evaluate the impact of an increase to the tax from 10 percent to 15 percent. According to the analysis, an increase would generate approximately \$41 million to \$43 million in additional annual General Fund revenue if this general tax proposal is approved by the electorate. The revenue would be deposited within the General Fund to address the City's greatest needs, such as public safety or infrastructure improvements. The analysis from the consultant is attached to this report and is summarized below.

#### Findings

##### Parking Occupancy Tax

The Parking Occupancy Tax (Parking Tax) is currently set at 10 percent of parking rates, for hourly, daily and monthly charges and is considered one of the City's economically sensitive revenues. The 2012-13 Parking Tax revenue budget is \$91.7 million, which represented 4 percent growth over the 2011-12 revenue budget of \$88.2 million. Part of this expected growth was attributed to the on-going efforts by the Office of Finance and the Police Commission through

enforcement and compliance programs. Though 2011-12 actual receipts of \$86.5 million finished \$1.7 million below budget and the 2012-13 estimate now represents 6.1 percent growth, revenues through September 2012 are tracking slightly ahead of plan.

#### Proposal for the Parking Occupancy Tax

It is proposed to increase the Parking Tax rate from 10 percent to 15 percent through a general tax ballot measure within the guidelines set by Proposition 218. A general tax ballot measure would require a 50 percent plus one vote approval rate to pass. Tax measures which are designated for specific purposes would require a two-thirds approval rate for passage, a threshold that has historically been difficult to achieve.

The proposed 15 percent rate would fall within what is currently charged in other major cities. Parking tax rates among other large cities are below, as previously reported in the Revenue Options report of August 20, 2012.

Table 1. Parking Occupancy Tax Rates in Select U.S. Cities

<u>City</u>	<u>Rate</u>
Pittsburgh	45%
San Francisco	25%
Chicago	19.75% to 50%
Philadelphia	20%
New York	10.375% to 18.375%
Miami	15%
Oakland	10%
Seattle	10%
Los Angeles	10%

#### Projected Revenue

The consultant, Beacon Economics, reviewed previous research on parking tax increases to infer the resulting impact to the City. Findings revealed that the tax increase would likely be passed on to the consumer in areas of high demand for parking and absorbed by the parking lot operators in areas of low demand. Most studies arrived at a similar conclusion that parking demand is relatively inelastic (-0.3); that is a 10 percent increase in parking rates reduces demand by 3 percent. Increasing the City's tax rate to 15 percent results in a 4.5 percent increase in the total parking rate and a possible 1.35 percent decrease in demand, assuming the full amount of the tax increase is passed on to consumers. Based on actual parking occupancy tax receipts from fiscal year 2011-12, it is projected that revenue will increase in the range of \$41 million to \$43 million annually, dependent on the demand for parking.



Table 2. Impact to Revenue in High-Demand and Low-Demand Locations

Actual 2011-12 Parking Occupancy Tax Revenues	\$86,449,901
Revenue with increase passed down to consumers (4.5% higher prices)	\$127,924,241
Change in Revenues	\$41,474,340
Revenue with increase absorbed by the operators/owners (no price change)	\$129,674,852
Change in Revenues	\$43,224,951

\*Estimated revenue based on FY2011-12 actual revenue

Previous research on the secondary effects, such as the effect on local transportation or business is limited. Studies revealed that the impact to retail sales was dependent on the desirability of the affected area and the availability of attractive substitutes. A parking increase would have a negligible effect on the pursuit of alternative forms of travel (e.g., public transportation, walking, cycling).

#### Recommendations

1. Request the City Attorney, with the assistance of the Chief Legislative Analyst and the City Administrative Officer, to prepare the necessary Ordinance and Resolution to place a measure to increase the Parking Occupancy Tax to 15 percent on the March 5, 2013 Primary Nominating City Election ballot; said documents to be transmitted no later than November 6, 2012; and,
2. Instruct the City Clerk, upon submission of the ordinance and resolution, to place them on the next available Council Agenda for consideration on or before November 13, 2012.

#### Fiscal Impact Statement

Approval of the proposed Parking Occupancy Tax increase by Los Angeles City voters will generate approximately \$41 million to \$43 million in General Fund revenues and reduce the structural deficit in outgoing years. The cost for putting a measure on the City Primary Nominating election ballot is included in the budgeted funds of the City Clerk.

MAS:RPC:BC/BGF: 01130037

Attachment

October 2012

# Parking Occupancy Tax Overview



**BEACON**ECONOMICS

Authored by  
Beacon Economics, LLC

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**BEACONECONOMICS**

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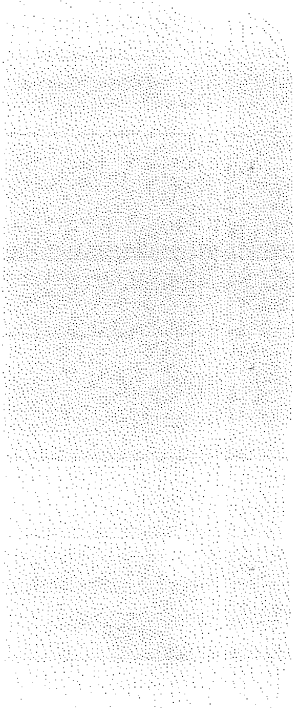
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## Overview

### Primary Effects

City of Los Angeles first enacted the parking occupancy tax in 1990. To examine the effect of the new tax Berk and Associates (2002) surveyed a local parking operator – Standard Parking. The operator indicated they were able to pass the entire tax to the consumer in form of higher prices.

The same conclusion was found in San Francisco, where operators claimed they passed the full cost on to the consumers. Furthermore, Berk and Associates (2002) also looked at the City of Pittsburgh’s parking tax changes. They found that the cost of the tax was passed down to the consumers in high demand areas while the operators/owners had to absorb the cost in areas of low demand for parking. Finally, Berk and Associates (2002) concluded that in Miami, the structures with high parking rates and low vacancy rates were able to pass the cost of the tax to the consumers, while lower priced and higher vacancy garage operators were forced to absorb the cost of the parking tax.

Currently, the City of Los Angeles is contemplating increasing parking occupancy tax rates from 10% to 15%. If the City decides to increase the tax rates, the lot owners and/or operators are faced with a dilemma, whether to absorb the cost of the tax or pass it on to the consumers. If the operators/owners absorb the cost, the consumers will not face higher parking prices. According to City of Los Angeles Commission on Revenue Efficiency parking operators in the City generally report a 5% profit margin which could prevent them from absorbing the additional cost of the tax. If this is the case, the owner of the property will face higher costs.

On the other hand, the operators/owners could pass the cost of the additional tax to the consumers in form of higher parking prices. If the entire cost of the tax is passed through to the consumer a reasonable expectation is for parking fees to increase 4.5%. Whether the operators/owners pass the cost to the consumer will be determined by the local market characteristics, such as the location of the lot, average vacancy rate of the parking lot (structure) and/or availability of transportation substitutes. In low-vacancy parking structures the operator/owner would most likely increase parking fees due to relatively inelastic demand for parking.

Referring to empirical work on price elasticity of demand for parking, it appears that most studies arrive at a similar conclusion. The average price elasticity of demand for parking appears to be -0.3. That is, a 10% increase in parking rates reduces demand for parking by 3%.

Parking occupancy taxes are an important source of revenues, considering City of Los Angeles generated approximately \$86.45 million in 2012 from this tax. To

look at the potential for higher revenues with the increased tax, let’s assume the City had a 15% parking occupancy tax rate in fiscal year 2012 and the operators/owners absorbed the cost of the additional tax. With this scenario the

**Table 1: Potential Revenues**

Revenues with current rates	2013	2012
Parking occupancy tax revenues	89,868,814	86,449,901
Revenues with Proposed Increase		
Increase absorbed by operators/owners (no price change)	134,803,221	129,674,852
Additional revenues	44,934,407	43,224,951
Increase passed down to consumers (higher prices)	132,983,377	127,924,241
Additional revenues	43,114,564	41,474,340
Source: Beacon Economics		

City would have generated approximately \$129.57 million from this revenue source which is approximately \$43.22 million higher than actual figures.

A more realistic reaction of the operators/owners would be to pass the additional cost of the tax to the consumers. In this scenario the consumer would face 4.5% higher parking prices, which would reduce the demand by 1.35%, assuming price elasticity of parking demand of -0.3. With the lower demand, the City would have generated approximately \$127.92 million, which is \$41.47 million higher than actual figures.

Using the 2012 parking tax revenue growth rate, the City could expect \$89.87 million in revenues in 2013, assuming a 10% parking occupancy tax rate. If the parking occupancy tax is increased to 15%, there are two potential revenue scenarios. First, let's again assume the operators/owners absorb the cost of the tax (no parking price change). In this scenario the estimated revenues for 2013 would be approximately \$134.8 million - additional \$44.93 million as a result of higher parking tax rates.

The second scenario illustrates the effect of higher cost to park on demand for parking with an assumption the entire cost of the additional tax is passed down to the consumer. Using elasticity of -0.3, a 4.5% increase in price would reduce the demand by 1.35%. This implies that if the entire cost of the tax increase is passed down to the consumers, the City should expect to generate \$132.98 million – additional \$43.11 million from higher taxes.

Therefore, depending on the operator/owner response to the additional taxes, that is whether they will absorb the cost of additional taxes or increase parking rates, the additional revenues could differ by nearly \$2 million.

Based on Berk and Associates (2002), we can conclude that one of the main factors in operator/owner response is the supply and demand for parking. Table 2 illustrates median parking rates at Central Business Districts, as compiled by Collier's 2011 Parking Rate Survey, and parking tax rates for selected cities.

Looking at monthly rates, we could perhaps make an argument that in San Francisco, New York, Chicago, Philadelphia, Seattle and Los Angeles the demand exceeds the supply for parking, hence the high parking rates. Due to excess demand, if the owners/operators of these Central Business District parking structures are faced with additional costs they could most likely pass the cost to the consumers.

**Table 2: Parking Fees and Parking Tax Rates**

City	Daily Rate	Monthly Rate	Parking Tax Rate
Miami, FL	17	125	27.8%
San Francisco, CA	26	375	25%
Philadelphia, PA	26	303.63	20%
New York <input type="checkbox"/> Downtown	30	533	18.5%
Seattle, WA	24	294	12.5%
Los Angeles, CA	30	209.5	10%
Oakland, CA	18	192.5	10%
Cleveland, OH	8.5	140	8%
Chicago, IL	32	289	Tiered \$ system
Sacramento, CA	15	155	0%
San Diego, CA	26	170	0%
San Jose/Silicon Valley, CA	15	100	0%

Source: Collier's 2011 Parking Rate Survey; Beacon Economics

**Secondary Effects**

Secondary effects refer to indirect effects of the parking tax on other areas such as public transportation and local businesses. For example, will the higher parking rates result in lower retail sales? Unfortunately, it appears that there

BEACON ECONOMICS

are not very many studies that look at the effect of parking fees on retail customers and visitors. Business groups oppose the tax because they argue it negatively affects sales.

According to a paper by the George Mason University School of Public Policy, downtown Seattle, Santa Monica and pre-Katrina New Orleans had no losses in revenues after parking rate increases. The reason is that those are highly desirable area for visitors and attract high income shoppers. On the other hand, the same study claims that negative effects were seen in Miami area because of availability of attractive shopping substitutes outside downtown.

According to TRACE (1999) parking prices have an effect on use of public transportation. The paper estimates the parking price elasticity of public transport to be 0.02. That is, a 10% increase in parking prices, increases the use of public transportation by 0.2%. Furthermore, they estimate parking price elasticity of slow modes of transportation (walking and cycling) to be 0.03. Since the relationship between parking prices and alternate means of transportation is minimal, we expect the effect of the higher parking tax in the City of Los Angeles to be negligible.

## Literature Review

### *Parking Pricing and Fees – Erin Vaca and Richard Kuzmyak – Transportation Research Board, 2005*

This report summarizes a few studies on travelers' responses to an introduction of parking fees and changes to existing parking fee practices. Some of the relevant studies noted in the report are:

San Francisco – Kulash 1974: In the early 1970s, San Francisco levied a 25% parking tax on garages while street parking remained unaffected. Average elasticity of demand was estimated at -0.3. The conventional wisdom states that the purpose of the trip matters, for example a traveler doing a leisure activity could have a larger negative effect compared to a commuter. However, the evidence from San Francisco shows that commuters had a larger elasticity (-0.27) compared to shoppers (-0.08). Once the taxes were reduced back down to 10% in 1972, the commuters again exhibited a higher elasticity.

Madison, WI – Charles River and Associates 1984: In 1980, Madison, WI chose to levy a parking surcharge during peak hours on all municipally-controlled parking structures. They found that occupancy at 9am (considered a peak hour) declined on average by 40%. The structures nearby, not subject to the surcharge, saw increased traffic and filled all available spots. After peak hours, the traffic increased in affected parking lots, however it remained 7% below the levels prior to the enactment of the surcharge.

### *Parking demand and responsiveness to supply, pricing and location in the Sydney central business district – David Hensher and Jenny King – The Institute of Transport Studies, 1999*

This study analyzed the effect of prices and supply on drivers going to Sydney's central business district. The authors surveyed casual car parkers during weekdays and public transport users. The responders were offered 6 alternatives – three parking locations in the CBD, park outside CBD and utilize public transportation into the CBD, switch to public transportation or forego the trip to the business district. The three parking locations differ by hours of operation, distance from final destination and pricing. They found evidence that an increase in parking fees increased the use of public transportation without any loss in total trips to the CBD. The estimated elasticity of demand is -0.54.

### *Estimating commuter mode choice: A discrete choice analysis of the impact of road pricing and parking charges – Kevin Washbrook, Wolfgang Haider and Mark Jaccard – Transportationm, 2006*

On a similar note, this study looked at driver behavior in the Vancouver area and the effect of toll roads and parking charges on choices. The authors estimate the elasticity of demand to be -0.3. The authors went slightly further and estimated elasticities for different income levels. The lowest elasticity was -0.23 for people with income greater than \$80,000.

### *Temporal variance of revealed preference on-street parking price elasticity – Andrew Kelly and Peter Clinch – Transport Policy, 2009*

The authors looked into the effect of a 50% parking charge increase in Dublin on the price elasticity of demand. They find evidence that the on-street parking price elasticity of demand is approximately -0.29. However, they find evidence that street parking in certain submarkets (close to shopping areas) is relatively price inelastic. They argue that the city could increase the rates further in these submarkets and during certain certain hours. In addition, they found that the average duration of parking decreased by 16 minutes which is an 18% decrease.



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## About Beacon Economics

Beacon Economics is a leading provider of economic research, forecasting, industry analysis, and data services. The firm's internationally recognized forecasters were among the first and most accurate predictors of the U.S. mortgage market meltdown that began in 2007—and among a relatively small handful of researchers who correctly calculated the depth and breadth of the financial and economic crisis that followed. By delivering independent, rigorous analysis, Beacon Economics gives its clients the knowledge they need to make the right strategic decisions about investment, growth, revenue, and policy. The firm's clients span both the public and private sector, ranging from the California State Controller's Office to major universities to one of Wall Street's most successful hedge funds. Core service areas include economic and revenue forecasting, economic impact analysis, economic policy analysis, regional economic analysis, real estate market and industry analysis, and EB-5 Visa analysis. Visit Beacon Economics' website at [www.BeaconEcon.com](http://www.BeaconEcon.com) to learn more.

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