



# PARKING MATTERS

 **PARKING MATTERS** | A Strategic Plan for  
Parking + Mobility  
in Savannah

## Technical Report 4.1 PARKING DEMAND ESTIMATES FROM EXISTING AND FUTURE LAND USE

Prepared for the  
**Chatham County-Savannah Metropolitan Planning Commission**  
and the  
**City of Savannah Department of Mobility and Parking Services**

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Prepared by  
**Nelson\Nygaard Consulting Associates** in partnership with  
**Symbioscity | VHB | Carl Walker, Inc.**

## Technical Report 4.1

# Parking Demand Estimates from Existing and Future Land Use

This report discusses the current and expected future land use profile for the Parking Matters study area. Its primary purpose is to estimate expected levels of parking demand as a function of land use patterns and to compare these to actual parking utilization, discussed in detail in Technical Report 3.1.

The report is divided into the following key sections:

1. Overview of Zoning Regulations and Current Parking Requirements
2. Existing Land Uses and Demand Levels with Observed Parking Utilization
3. Future Land Uses and Modeled Demand levels

Although expected demand is compared to actual use of existing facilities, this report does not propose recommendations or changes to current policies or regulations. These will be discussed in greater detail in Technical Report 9.1, Analyses and Evaluation of System-Wide Needs and Mobility Options.



## Section 1

# Overview of Land Use Regulations and Current Parking Requirements

## Key Points

Zoning currently establishes minimum parking requirements for land uses, though large parts of the Parking Matters study area are allowed to provide no parking with new development.

Many of these are higher than national standards, drawn heavily from observation of suburban land uses, would indicate.

Zoning currently offers no ability for sharing parking between uses, a common approach in many mixed-use districts with constrained space.

## CURRENT ORDINANCE AND REQUIREMENTS

The City of Savannah's current zoning ordinance defines minimum requirements for off-street parking that new development is expected to provide. The ordinance was first adopted in 1960 and in many ways reflects the standard practices of the era, which accommodate vehicle parking demand by setting minimum levels of requirement for separate land uses. These requirements are generally based on observed peak levels of activity, and as with many zoning ordinances were intended to ensure that ample parking is available for uses and to protect certain community areas—especially neighborhoods that depend on street parking—from spillover parking that results from insufficient supply.

This section presents an analysis of the zoning code compared to national practices in parking standards. This is important to undertake as initial findings indicate that, in the aggregate, Savannah has adequate parking supply for current levels of demand and land uses. In addition, nationally recognized parking rates, published by the Institute of Transportation Engineers (ITE), are often lower than the amount of parking that the Savannah ordinance mandates today. In addition, the existing parking supply provides more parking than what ITE would recommend using the given land uses and parking rates, though importantly not in the core historic district.

Parking requirements for selected uses are shown in the table on page 6. With many of these, the zoning ordinance authorizes the zoning administrator to approve exceptions or even overall levels of parking to be provided. However, most uses have a defined minimum requirement that applies in all zoning districts defined in the ordinance. The ordinance does not include provisions for sharing parking between uses or for uses to meet their minimum requirements through off-site locations (such as a remote lot) apart from locations directly across a public street from the principal use. It also requires individual minimum

amounts to be met for land or buildings featuring combined (mixed) uses and does not allow a lesser number of spaces to be shared among different uses.

## EXCEPTIONS TO PARKING REQUIREMENTS

The zoning ordinance does allow exemptions and sets special off-street parking requirements for certain zoning districts. Perhaps the most notable example is the Central Business (BC-1) district covering much of the Savannah Historic District, which exempts all uses from providing off-street parking. Uses in the Bayfront Business (B-B) district that area also within the historic district are exempted as well.

As shown in the map on Pages 12 and 13, this covers a substantial portion of the Parking Matters study area, and generally the part of the city with the greatest level of time restriction and pricing on on-street parking spaces.

## NEW ZONING ORDINANCE (NEWZO)

The City of Savannah has been working toward creation and adoption of a new zoning ordinance (colloquially referred to, along with a parallel ordinance to govern unincorporated Chatham County, as the New Zoning Ordinances or NEWZO). This has proposed new minimum requirements in many zoning districts, with several districts changing the requirements to reduce overall parking being provided; however, in some instances (notably churches) these requirements have been increased. Refer to the table on the following page for changes that would be proposed in selected uses.

NEWZO has adapted the current ordinance's treatment of downtown and the historic district with a special set of provisions on parking requirements. As shown in the map to the lower right, this includes two primary zones: one allowing parking exemptions (similar to the current B-C-1 and B-B zoning districts) and a larger area, generally coterminous with the

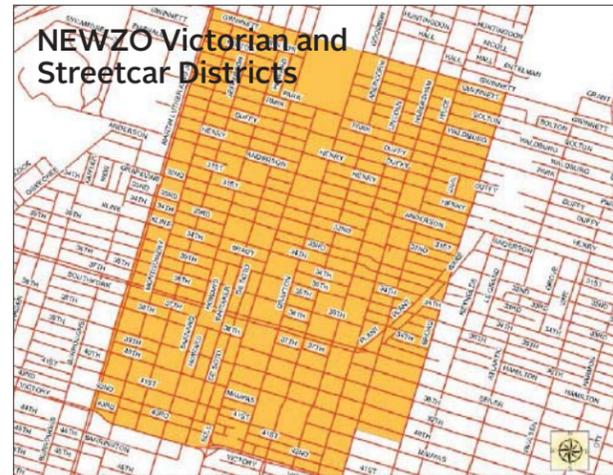
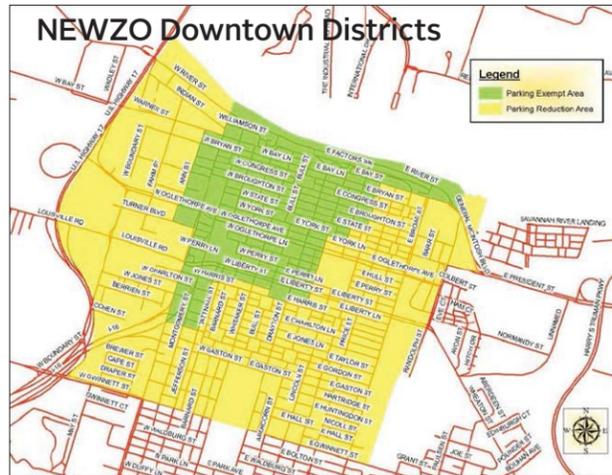
Savannah Historic District boundaries and also extending west to Interstate 16 and US 17, that allows parking reduction for certain uses. These reductions are allowed based on general use, with non-college educational, lodging and office uses allowed a 25 percent reduction; restaurants and indoor entertainment allowed 40 percent; and colleges, churches and clothing retail allowed 50 percent. The first 5,000 square feet of general retail would be allowed a 60 percent reduction and residential units are required to reduce parking levels but still meet a minimum of one space per unit.

A similar set of reductions is allowed for the Victorian and Streetcar districts (shown in the diagrams on the following page), which together with the downtown districts constitute the entirety of the Parking Matters study area. Reduction levels are not as permissive as they are in the downtown districts, but still allow 25 percent fewer spaces for educational uses (including college), restaurants and bars, lodging and offices. Retail and places of worship are allowed 50 percent reductions in their required parking.

Also importantly, the current NEWZO draft also introduces flexibility for accommodating change in use of buildings, and important element for addressing the special character and needs of the historic district. Uses are given credit off of their required parking from the amount of parking that a previous use would have required, whether or not this was actually provided previously.

## COMPARISON TO INDUSTRY STANDARDS

The tables beginning on the following page compare the current parking requirements for uses common in the Parking Matters study area to those observed through parking and transportation industry research and documented in the ITE *Parking Generation* manual. In many cases, Savannah currently requires less parking than what ITE observes, though in three notable use categories—general retail, office and residential uses— it requires greater amounts.



It is important to note that the ITE ratios represent peak-period levels of demand and are derived from case-study observations that focus largely on suburban land use patterns. In these locations there is little practical demand for shared parking as land uses tend to be physically separated. Although Savannah's downtown historic core features very different land use patterns where uses are often mixed in the same

buildings, the minimum requirements specified in its zoning ordinance apply to the entire city, with the exemptions in BC-1 and B-B districts as defined above being the only current ways outside of a variance process that these minimum requirements are not in effect.

**CURRENT ZONING: PARKING REQUIREMENTS FOR SELECTED USES COMPARED TO NATIONAL INDUSTRY RESEARCH OBSERVATIONS**

Land Use Type	CURRENT Minimum Requirements	ITE Peak Parking Demand Rates	Current Zoning compared to ITE
Single-Family Residential (detached and semi-detached)	2 spaces per unit	1.83 spaces per unit	Above
Multifamily - Studio	1.25 spaces per unit	1.23 spaces per unit	Above
Multifamily - One Bedroom	1.5 spaces per unit	1.23 spaces per unit	Above
Multifamily - Two Bedroom	1.75 spaces per unit	1.62 spaces per unit	Above
Multifamily - Three or More Bedrooms	2 spaces per unit	1.62 spaces per unit	Above
Hotel/Motel	1 space per room	0.89 per room for typical hotels; 1.2 space per room at hotel with accessory uses	Above and below depending on type, though generally consistent

**CURRENT ZONING: PARKING REQUIREMENTS FOR SELECTED USES COMPARED TO NATIONAL INDUSTRY RESEARCH OBSERVATIONS**

Land Use Type	CURRENT Minimum Requirements	ITE Peak Parking Demand Rates	Current Zoning compared to ITE
Hospital	1 space per 2 beds plus 1 space per doctor and 1 space per 3 non-doctor employees	4.49 spaces per bed, plus .81 per employee	Below
Elementary/High School	1 space per 2 employees plus adequate parking for students	.17 spaces per student at elementary; .09 spaces per student at middle; .23 spaces per student at high school	Different ways of measuring, though assumed based on class sizes that Savannah is generally below
Church	1 space per 8 seats in sanctuary	8.37 per 1,000 SF	Depending on seating, assumed to be below
Libraries, Art Galleries and Museums	1 space for each 400 square feet of public floor area	2.61 per 1,000 SF	Below
Banks/Financial Office	1 space per 175 SF plus 4 spaces per drive-in window	4 spaces per 1,000 SF	Above
General Office	1 space per 200 SF	2.84 spaces per 1,000 SF	Above
Food Retail	1 space per 200 SF	5.5 per 1,000 SF for convenience retail; 9.98 per 1,000 SF for supermarkets	Below
Personal service retail (barbershops, laundry/dry cleaning, beauty shops, etc.)	1 space per 200 SF	2.2 per 1,000 SF	Above
General merchandise and clothing retail	1 space per 250 SF	1.13 per 1,000 SF	Above
Fast-Food Restaurant	1 space per 200 SF plus 1 space per 4 seats	.52 spaces per seat	Generally assumed to be below, depending on size and configuration
Sit-Down Restaurant	1 space per 4 seats for patron use	.49 spaces per seat	Below

## NEWZO Proposed Parking Requirements

NEWZO has proposed different requirements for certain uses, although many are fundamentally the same as in current zoning. These are compared to ITE standards as shown in the table below and on the following page.

For reference purposes, the maps on pages 10 through 15 show the Parking Matters district by existing land use, by generalized zoning district, and

by areas where reductions in the zoning ordinance's minimum parking requirements may be used. These areas include not only the BC-1 and B-B districts as discussed above, but also a number of Planned Unit Development districts throughout the study area.

PROPOSED NEWZO: PARKING REQUIREMENTS FOR SELECTED USES COMPARED TO NATIONAL INDUSTRY RESEARCH OBSERVATIONS			
Land Use Type	NEWZO Minimum Requirements	ITE Peak Parking Demand Rates	NEWZO compared to ITE
Single-Family Residential (detached and semi-detached)	2 spaces per unit	1.83 spaces per unit	Above
Multifamily - Studio	1.25 spaces per unit	1.23 spaces per unit	Above
Multifamily - One Bedroom	1.5 spaces per unit	1.23 spaces per unit	Above
Multifamily - Two Bedroom	1.75 spaces per unit	1.62 spaces per unit	Above
Multifamily - Three or More Bedrooms	2 spaces per unit	1.62 spaces per unit	Above
Hotel/Motel	1 space per room	0.89 per room for typical hotels; 1.2 space per room at hotel with accessory uses	Above and below depending on type, though generally consistent
Hospital	1 space per 2 beds plus 1 space per employee	4.49 spaces per bed, plus .81 per employee	Minimum increased from current zoning, though still below ITE
Elementary/High School	1 space per classroom plus 1 space per 300 SF of office	.17 spaces per student at elementary; .09 spaces per student at middle; .23 spaces per student at high school	Different ways of measuring, though assumed based on class sizes that Savannah is generally below

PROPOSED NEWZO: PARKING REQUIREMENTS FOR SELECTED USES COMPARED TO NATIONAL INDUSTRY RESEARCH OBSERVATIONS			
Land Use Type	NEWZO Minimum Requirements	ITE Peak Parking Demand Rates	NEWZO compared to ITE
Church	1 space per 5 seats in sanctuary	8.37 per 1,000 SF	Minimum increased from current zoning, though still below ITE
Libraries, Art Galleries and Museums	1 space for each 400 square feet of public floor area	2.61 per 1,000 SF	Below
Banks/Financial Office	1 space per 200 SF	4 spaces per 1,000 SF	Decreased from current zoning, though still above ITE
General Office	1 space per 300 SF	2.84 spaces per 1,000 SF	Decreased from current zoning and now below ITE (was above ITE under current zoning)
Food Retail	1 space per 250 SF	5.5 per 1,000 SF for convenience retail; 9.98 per 1,000 SF for supermarkets	Below
Personal service retail (barbershops, laundry/dry cleaning, beauty shops, etc.)	1 space per 200 SF	2.2 per 1,000 SF	Above
General merchandise and clothing retail	1 space per 250 SF; 1 space per 225 SF for clothing/apparel retail	1.13 per 1,000 SF	Above
Fast-Food Restaurant	1 space per 100 SF	.52 spaces per seat	Generally assumed to be below, depending on size and configuration
Sit-Down Restaurant	1 space per 100 SF	.49 spaces per seat	Below

**EXISTING LAND USES**

**Residential Uses**

- Single-Family Residential
- 2-4 Family
- Condo/Townhomes
- Apartments

**Commercial and Office Uses**

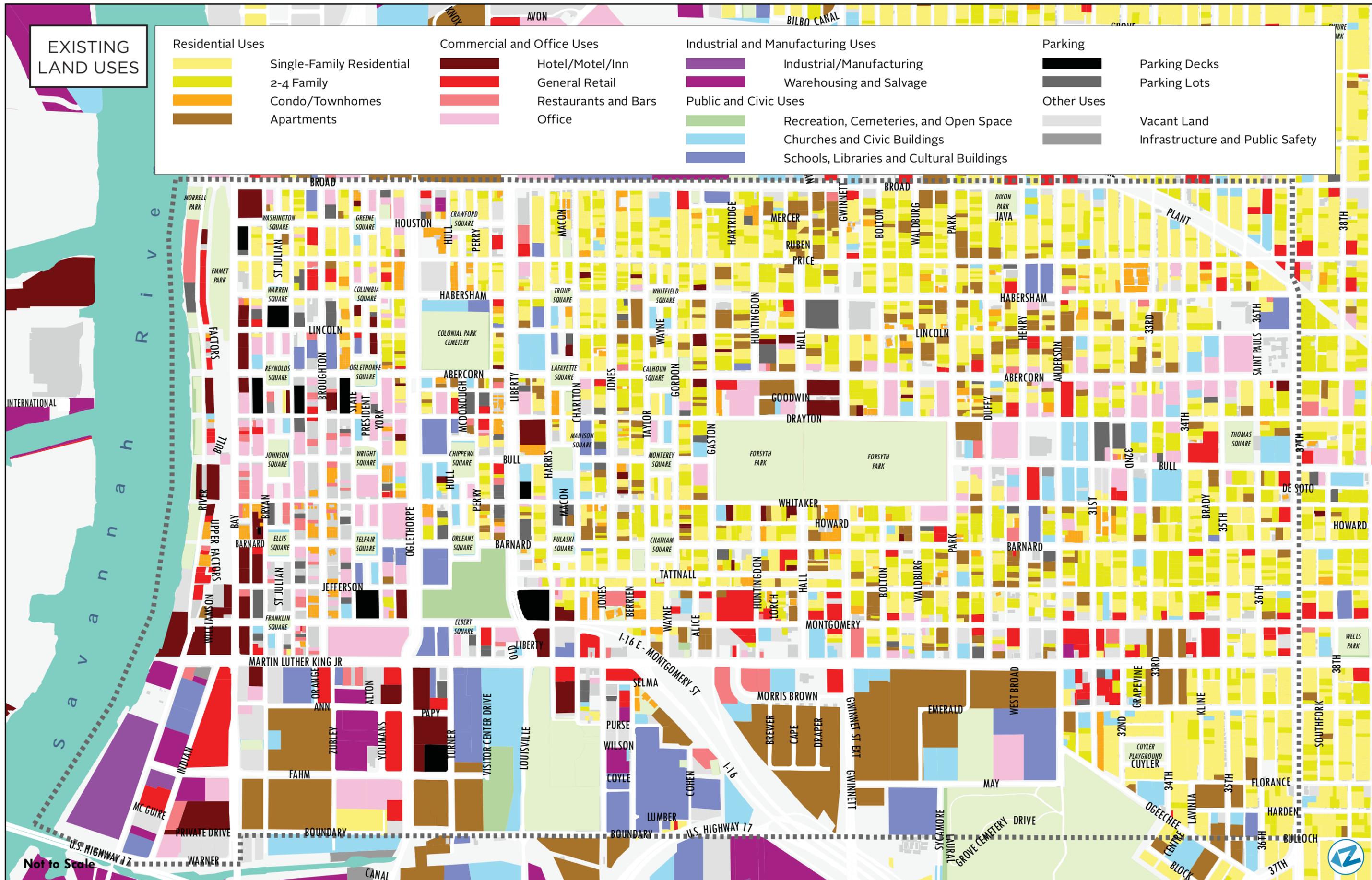
- Hotel/Motel/Inn
- General Retail
- Restaurants and Bars
- Office

**Industrial and Manufacturing Uses**

- Industrial/Manufacturing
- Warehousing and Salvage
- Public and Civic Uses**
- Recreation, Cemeteries, and Open Space
- Churches and Civic Buildings
- Schools, Libraries and Cultural Buildings

**Parking**

- Parking Decks
- Parking Lots
- Other Uses**
- Vacant Land
- Infrastructure and Public Safety

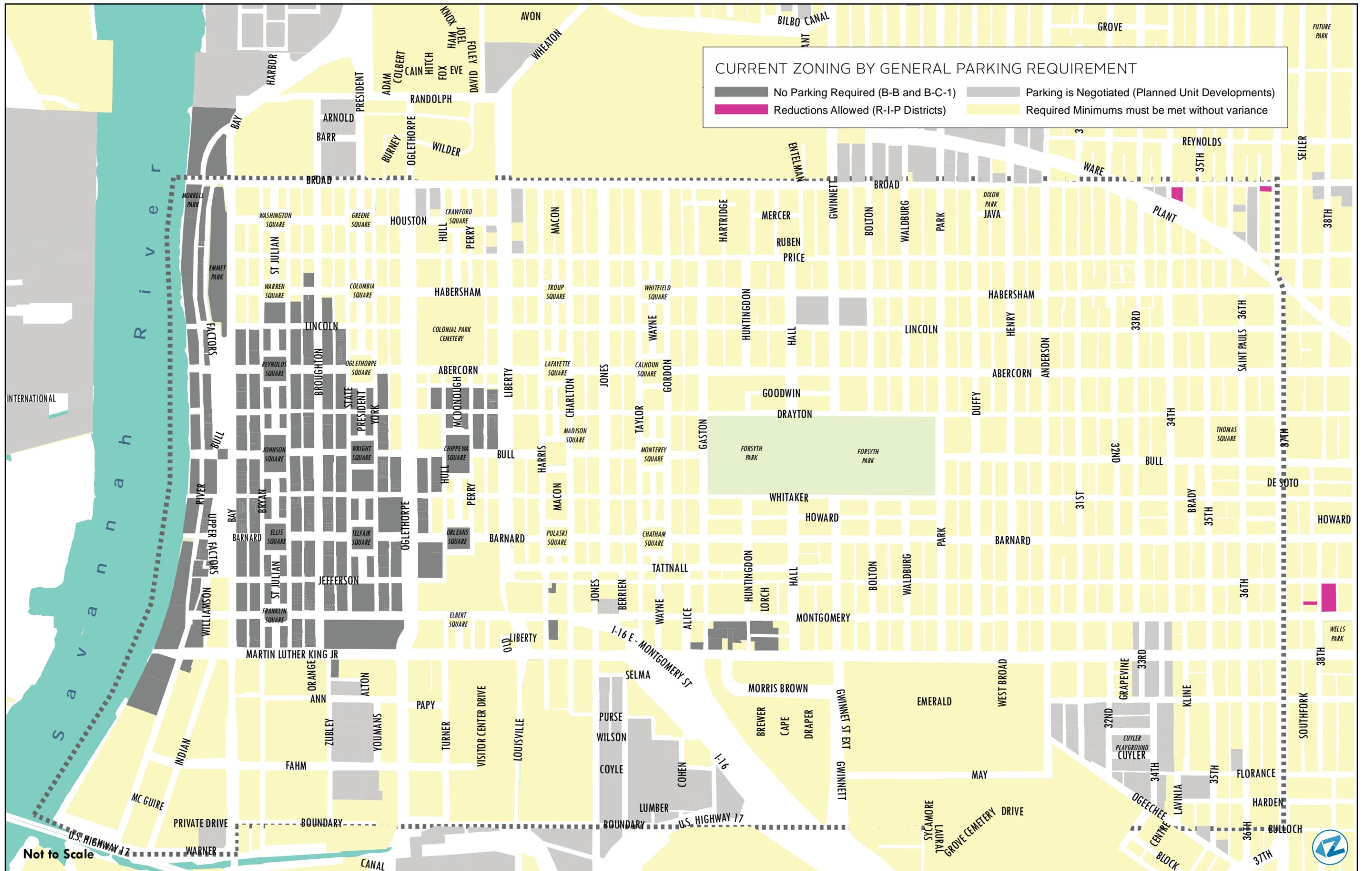


Not to Scale



Source: SAGIS; MPC; City of Savannah





## BEST PRACTICES IN ZONING

This section reviews other elements of parking regulation typically found in zoning ordinances and assesses how these are currently being used in Savannah. As the ordinance is an older document that has undergone numerous revisions, many of these approaches have not yet been codified into ordinance. Each offers a discussion of best practices intended to help guide future parking discussions in Savannah.

### Parking Minimums and Maximums

Most minimum parking requirements take into account only two variables, land use and the size of development. These are typically expressed in terms of number of spaces required per a certain square footage of a particular land use; or per residential unit; or (for restaurants and theaters) number of seats. In reality, however, parking demand is affected by many more variables, such as the geographic context, mix of adjacent land uses, demographic characteristics of the community, availability of transit or other alternatives to the car, traffic demand management

programs, vehicle ownership rates, and housing unit size. Central Savannah's diverse mix of land uses and fine-grain scale of how these uses are shared embodies several of these factors.

As currently configured, the Savannah Zoning Ordinance establishes minimum parking requirements for a variety of land uses but does not provide a cap or limit on the maximum number of spaces. NEWZO has not proposed to add these, either.

In contrast to minimum parking requirements, parking maximums restrict the total number of spaces that can be constructed. Reasons for setting maximum requirements may include a desire to restrict traffic from new development, promote alternatives to the private automobile, or limit the amount of valuable downtown land that is devoted to parking. Parking maximums can be introduced in any place where there are or could be measures in place to address parking spillover. While the policy is most likely to be appropriate in transit corridors, downtown, and areas with high levels of traffic congestion, it can be useful in any district that wants to limit traffic or the amount of land devoted to parking.

PARKING MINIMUM AND MAXIMUM REQUIREMENTS	
Existing Regulation	Best Practices
<p>Parking Minimums</p> <p>No Minimums in Effect in BC and BB districts</p>	<p><b>Reduced Parking Minimums:</b> In a number of municipalities, parking minimum requirements can be reduced when certain conditions are met, such as central business districts, or with a specific percentage of affordable housing.</p> <p><b>Parking Maximums:</b> In a growing number of municipalities, parking minimums have been replaced with parking maximums. In some cases, the amount required as a minimum is directly converted to a maximum. In others, the current standards are rejected altogether and a new analysis is carried out based on local auto ownership rates and commuting patterns.</p>

### Shared Parking

Mixed-use developments offer the opportunity to share parking spaces between various uses, thereby reducing the total number of spaces required compared to the same uses in stand-alone developments. This is a primary benefit in mixed-use development contexts of moderate-to-high density. Shared parking operations offer many localized benefits to the surrounding community, including a more efficient use of land resources and reduced traffic congestion.

Currently the Savannah ordinance does not specify standards or allowances for parking sharing. These

may be allowed through a variance process, but they are not defined in the current ordinance.

### Change of Use Exemptions

Savannah's downtown is famous for the quality and quantity of its historic building stock, with many buildings occupying their entire parcel footprint. There is often conflict between minimum parking requirements and the ability of the owner/occupant to change the use of their property in line with evolving market demands. As discussed above, the minimum parking requirements established in the zoning code often require more off street

SHARED PARKING	
Existing Regulation	Best Practices
<p>No regulations or allowances on shared parking, although adjacent on-street parking may be counted toward off-street parking requirements with special approval.</p> <p>Remote (off-site) parking is allowed provided that it is not meeting the legal requirements of other uses.</p>	<p>Required parking spaces for all uses in all districts need not be limited to use by residents, employees, occupants, guests, visitors, or customers of such uses and may be used for general public parking. This enhances the inherent "park-once" efficiency of a downtown area. These can be provided publicly or on other private facilities through agreements.</p> <p>Potential to consider public parking (on- or off-street) as part of shared supply.</p> <p>Shared parking can be provided within at least a 5 minute walk from the associated use (~1,000 feet).</p>

ADDRESSING CHANGES OF USE - EXEMPTIONS	
Existing Regulation	Best Practices
<p>No additional parking required if floor area for the use is not increasing by more than 25 percent. No special allowances are defined for other situations, suggesting that full parking requirements for the new use must be met. Exemptions for B-B and BC-1 districts can supersede this.</p>	<p>When buildings and parcels are converted to new uses, exemptions from parking requirements may be granted when providing the required amount of parking on-site is infeasible.</p> <p>Allow for exemptions in cases where overall building and parcel in use is below a certain size (e.g. 5,000 sq ft).</p> <p>Allow for exemptions in cases where building and parcel in use is to a lower parking intensity.</p>

parking than is feasible within the constraints of the property. In mid- to high-density downtowns where lots are small and available space is limited, such as in Savannah, this can become a serious obstruction to sensible redevelopment; discussions with stakeholders and the downtown business community suggest that this has already been a frequent challenge.

by making an annual payment (in-lieu of providing parking) to the municipality. The fee can be used for transportation improvements, or is “banked” to fund current or potential future shared parking facilities. This provision helps the redevelopment of constrained sites while providing a revenue stream to support the construction/maintenance of shared public parking facilities such as a central lot or garage.

In-lieu fees are not currently used in Savannah, though special arrangements (such as those in the development of the Whitaker Street garage) have allowed private uses to meet parking requirements through partnership with public agencies already providing public parking through construction of a facility.

### Parking In-Lieu Fees

In some communities new developments can waive all or part of their minimum parking requirements

PARKING IN-LIEU FEES	
Existing Regulation	Best Practices
None	Where zoning requirements define minimum requirements for parking spaces, a parking in-lieu fees or payments have successfully reduced parking supply for dense mixed-use areas that have lower parking demand or high potential for sharing.  Fees vary depending on regional context, but are generally commensurate with parking construction costs OR market-rate parking leasing costs for an amount of time that can be tied to expected economic utility of a particular use. The cities of Miami (in the Coconut Grove district) and Miami Beach (South Beach and Lincoln Road areas) have used this approach since the 1990s.

DRIVEWAY CURB CUTS	
Existing Regulation	Best Practices
Curb cuts are not allowed within the historic district except by approval from the City traffic engineer. Sites with rear access through an alley or lane are required to use this as their access point, not the street. On Bull Street and Victory Drive, curb cuts are limited to one per 100 feet.	In downtown or village center zoning districts, reviews emphasize a prohibition of curb cuts and driveway openings along key transit, bicycle, and/or pedestrian routes whenever possible. This already appears to be in place under Savannah’s current development review process.  Where curb cuts are present, standards expect a level crossing for pedestrians (raised driveway) and clear sight lines for exiting motorists to see pedestrians.

### Driveway Curb Cuts

Driveway curb cuts are a major source of vehicle-pedestrian-bicycle conflicts and induce congestion on busy thoroughfares due to left turning vehicles. When alternatives are available and feasible, limiting or prohibiting driveway curb cuts along key vehicle, pedestrian, and bicycle routes reduces or eliminates these conflicts, providing safer, more efficient, and less congested public rights-of-way.

The zoning ordinance provides limited guidance on the width of curb cuts to allow for safe passage of cars by each other and into parking lots. These are generally restricted in the Historic District but permitted on other residential streets.

many spaces they wish to lease. Especially among households with below average vehicle ownership rates (e.g., low income people, downtown residents who can walk to work with access to transit, singles and single parents, seniors on fixed incomes, and college students), allowing this choice can provide a substantial financial benefit. Unbundling parking costs means that these households no longer have to pay for parking spaces that they may not be able to use or afford.

Charging separately for parking is the single most effective strategy to encourage households to own fewer cars, and rely more on walking, cycling and transit. According to a 2006 study by the Victoria Transport Policy Institute, unbundling residential parking can significantly reduce household vehicle ownership and parking demand.

The zoning ordinance does not explicitly address the bundling of parking cost. Owners of rehabilitated residential buildings can either provide on-site parking or can utilize municipal or other such parking

### Unbundling Parking Costs

Unbundling parking costs changes parking from a required purchase to an optional amenity, so that households and employers can freely choose how

UNBUNDLING PARKING COSTS	
Existing Regulation	Best Practices
None	Any parking spaces offered to tenants of a new development must be offered as a fee-based option distinct from charges established for renting, leasing, or purchasing primary-use space within the development. These fees shall reflect market realities (i.e., the actual value of parking).  The purpose of this code language is to make the cost of providing parking clear to residential and commercial tenants and buyers, and to help them make more informed decisions about their transportation needs. Unbundled parking also makes housing more affordable for tenants or buyers who do not have a vehicle, without affecting price for others.  Typically, unbundled parking leads to reduced parking demand, which in turn lets developers build less parking and more of the functional building space (whether that is living units, commercial space or office space). Typically unbundled parking reduces parking demand by 10-30% (VTPI, 2006), depending on circumstances. A conservative approach may be to ease minimum requirements by 20%.

facilities nearby, by buying an annual parking pass, to meet parking minimum requirements. However, the ordinance does not identify how the parking spaces are associated with residences, i.e., whether they are offered unbundled or as a unit.

There is a reduction in the parking requirement for subsidized low and moderate income housing or elderly housing developments. These types of housing developments are required to provide 1.5 spaces per dwelling unit. Again, this requirement does not unbundle the cost of parking, but does illustrate recognition of reduced need, which is associated with unbundled parking costs.

### Bicycle Parking

Bicycle parking is an essential part of encouraging bicycling and typically serves two important markets. Long-term parking is needed for bicycle storage for residents and employees. This parking is located in secure, weather-protected, restricted access facilities. Short-term parking serves shoppers, recreational users and other. As well as security, convenient locations are a priority – otherwise, bicyclists will tend to lock their bicycles to poles or fences close to their final destination. Bicycle improvements increase mobility, reduce auto dependency, congestion and air pollution and can be a very important mode of transportation for lower-income families.

The Zoning Ordinance does not currently specify any bicycle parking requirements.

### Transportation Demand Management Measures

Transportation Demand Management (TDM) refers to a package of strategies to encourage residents and employees to drive less in favor of transit, carpooling, walking, bicycling, and teleworking. It encompasses financial incentives such as parking charges, parking cash-out, or subsidized transit passes; guaranteed ride home programs to give employees the security to carpool or ride transit; compressed work schedules; and information and marketing efforts. TDM programs have been shown to reduce commuting by single-occupant vehicle by up to 40%, particularly when financial incentives are provided.

The Savannah ordinance does not currently address transportation demand management, although current programs and efforts organized by the City's Department of Mobility and Parking Services as well as Savannah Mobility Management, Inc. could be useful tools in informing how zoning might seek to include requirements and flexibility related to TDM.

TRANSPORTATION DEMAND MANAGEMENT MEASURES	
Existing Regulation	Best Practices
None	<p>Pre-Tax transit benefits – Employees are provided with access to “transit checks,” vouchers, or debit card systems that allow the use of pre-tax income for purchase of transit fares.</p> <p>Preferential parking for carpooling, for instance 10% of all parking spaces are set aside for carpool vehicles prior to 9:00 AM on weekdays, or provide carpool parking in prime locations.</p> <p>Provide ride-sharing services, such as a carpool and vanpool incentives, customized ride-matching services, a transportation information package for new employees and residents, a Guaranteed Ride Home program (offering a limited number of emergency taxi rides home per employee), and an active marketing program to advertise the services to employees and residents.</p>

BICYCLE PARKING	
Existing Regulation	Best Practices
None	Minimum bike parking facilities are provided in relation to the scale of development, and minimum design standards for such parking facilities are specified. A general approach is to specify that bicycle parking is to be provided at a percentage of the number of vehicle spaces (such as 5 percent of the number of vehicle spaces), sometimes with a minimum requirement for particular uses (especially retail, grocery stores/supermarkets and educational buildings).

## Section 2

# Existing Land Uses and Demand Levels

## Key Points

Five subareas are evaluated based on potential for complementary uses to share parking.

Demand levels are estimated both for unshared parking (an amount provided exclusive to each use) as well as shared parking.

Shared parking levels are compared to actual observed parking utilization (discussed in Technical Report 3.1) to test how well parking requirements may reflect current use patterns.

As suggested in Section 1, many parking requirements in zoning differ from the national research on demand. However, the special nature of much of the Parking Matters study area—especially in its fine-grained mix of land uses and potential for internal capture of trips—points to yet another dynamic in the parking-land use relationship. This section presents a more detailed review of land use patterns in the study area and compares these to observed levels of parking use and supply as discussed in Technical Reports 3.1 and 6.1.

## ANALYSIS METHODOLOGY

This land use and demand analysis relied on property use and tax roll data from the Chatham County Board of Assessors to determine a primary use and amount of building space for each of the study area's parcels. The Parking Matters team calculated an overall amount of land use intensity (e.g. residential units, square footage of non-residential uses, etc.) for each major use category.

It is important to note that the property records provided do not use a consistent method for capturing multiple land uses on one given parcel, a common feature of downtowns in general and major parts of the Parking Matters study area. The records generally defined a separate category and square footage for each principal use in a building or on a single property, allowing the study team to aggregate use categories by district and use the combined totals for each major land use as the basis for estimating parking demand.

However, some other records assigned multiple uses into a single category, while others generally used a miscellaneous category for these kinds of properties or even for properties featuring single uses. The study team reviewed this data and reassigned the amounts of building space into appropriate categories based on local knowledge.

The team applied these land use program amounts to two separate calculation methodologies. The first of these, based on traditional zoning requirements,

calculated demand for all individual uses in each district per estimated peak levels of activity and demand; this assumed that parking is not shared between uses and is provided for each individual use as needed. The second methodology, based on the Urban Land Institute's Shared Parking research and analysis, calculates both for overall parking when sharing of spaces occurs, recognizing that different peak periods for individual land uses occur at different times of the day and allow a common supply of spaces to be shared over an entire area.

## DEFINITION OF SUBAREAS

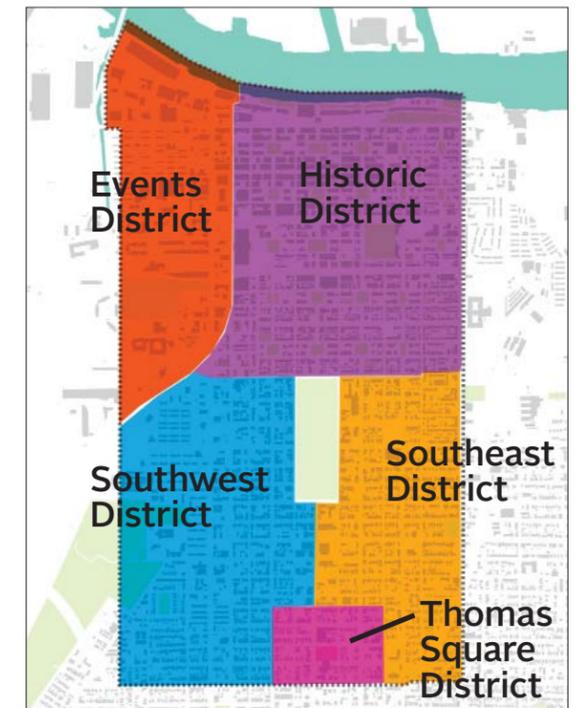
The Parking Matters study area is extensive and the plausibility of sharing parking over such a large district is limited by distances between uses. For analysis purposes, the Parking Matters study team divided this overall area into five subareas. These were defined primarily from an understanding of issues and challenges drawn from public and stakeholder comments, though the team also sought to define areas based on general land use mix and where complementary uses were most likely to generate particular patterns of travel behavior and parking. These are defined in the following sections and illustrated on the map to the right.

### Historic District

This area includes Savannah's core office and retail district but also entertainment-focused areas such as City Market and River Street. It includes all of the Historic District's Oglethorpe Plan squares and extends as far south as Gaston Street (the northern edge of Forsyth Park).

### Events District

Located primarily to the west of Martin Luther King, Jr. Boulevard, this area includes the Coastal Georgia Center and several hotels. It also includes a small district along the Savannah River along Indian Street where potential new development has been discussed.



### Southeast District

This is the area south of Gaston Street and east of Bull Street. Although it is primarily residential in nature, it does also include retail and office uses.

### Southwest District

This is the area south of Gaston Street and west of Bull Street. It is a primarily residential district, though contains a larger concentration of retail uses than any of the other districts except the Historic District and small but significant amounts of office and restaurant uses.

### Thomas Square District

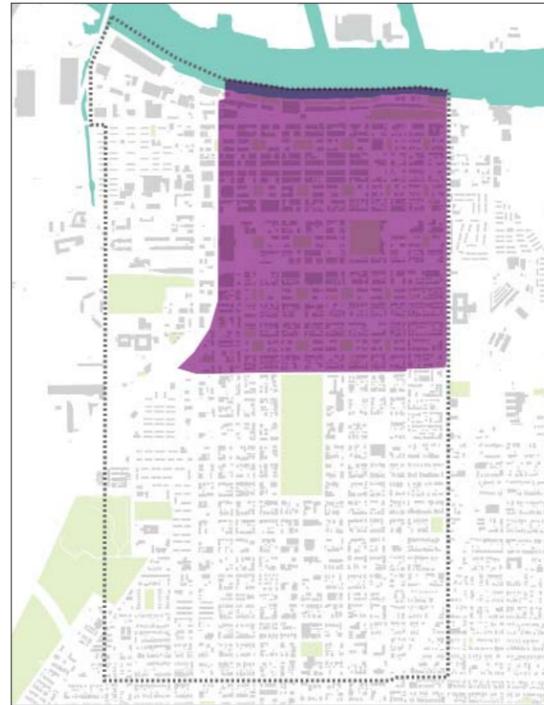
This includes Thomas Square in the south of the study area as well as the neighborhood immediately around it. This area has changed considerably in recent years with SCAD's acquisition and opening of Arnold Hall as an academic facility. While it already included a small commercial district adjacent to the square, the expansion of SCAD use into the district is expected to add more demand for non-residential uses and increased parking activity.

## HISTORIC DISTRICT

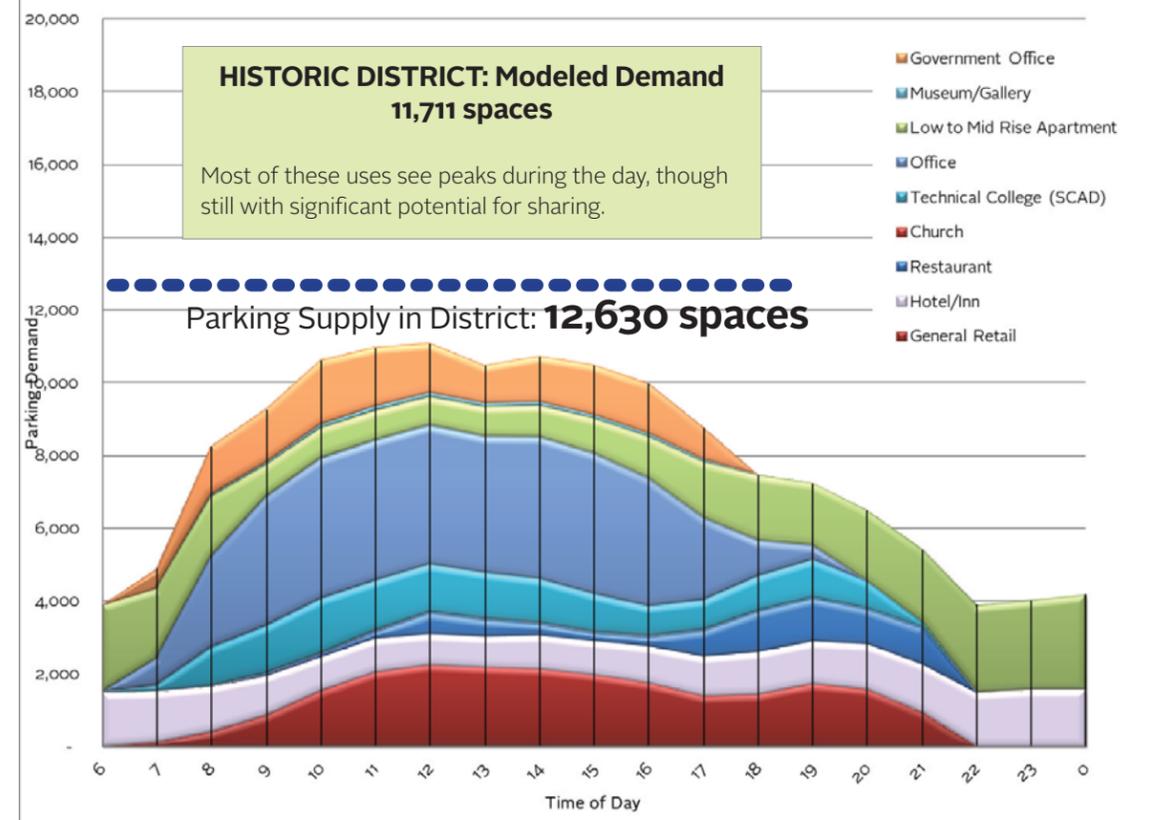
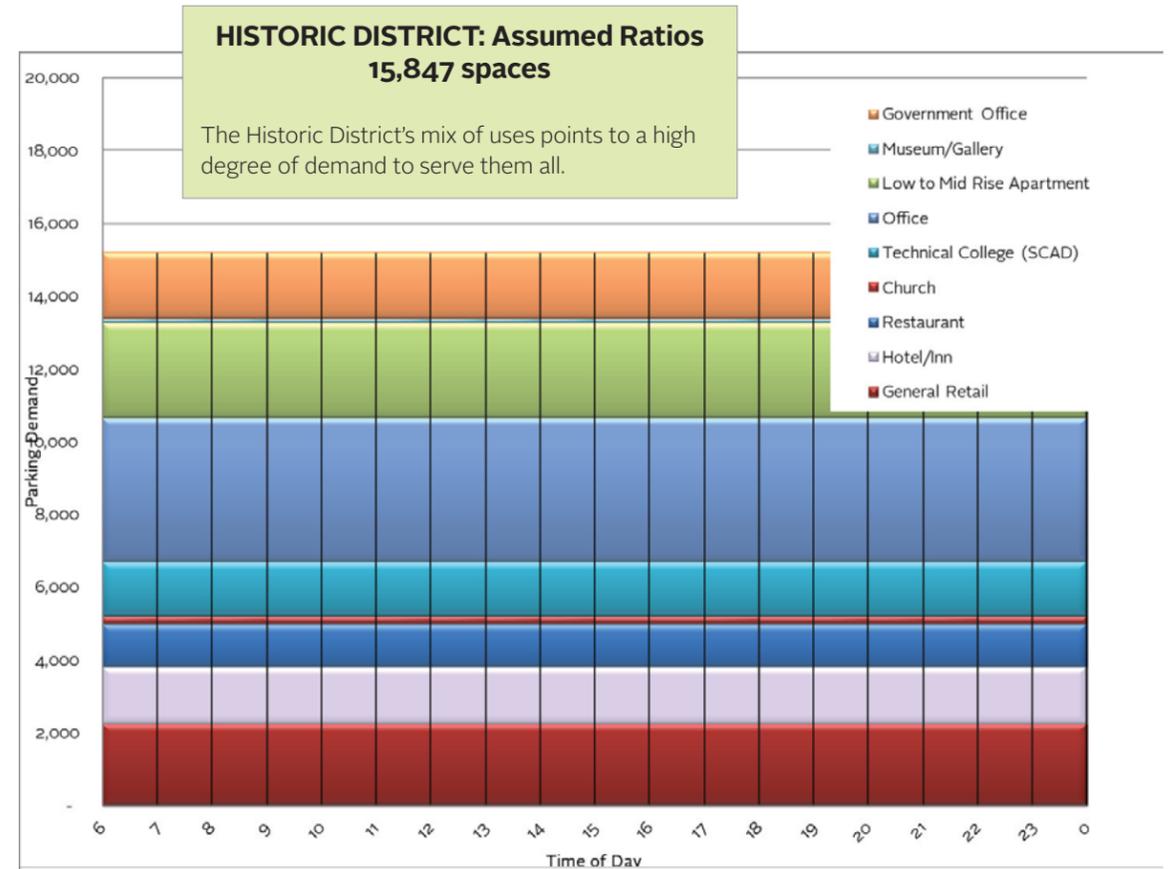
As discussed previously, the Historic District area includes most of Savannah's designated National Historic Landmark District (bounded by Martin Luther King, Jr. Boulevard, East Broad Street, the Savannah River and Gwinnett Street). Within this area is the primary business district of the city, with over 2 million square feet of office space and nearly 1 million square feet of retail space. This is also a major location for SCAD facilities, with many of the administrative buildings for the college located here.

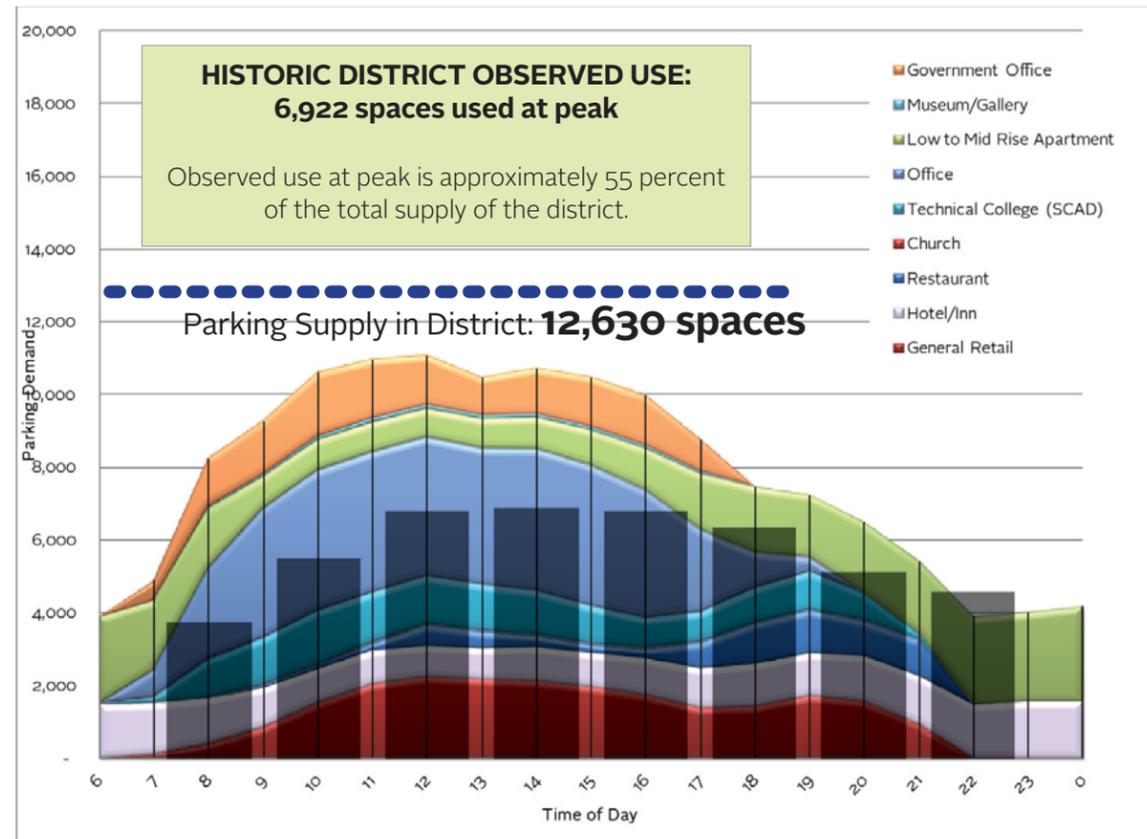
The district features the study area's greatest intensities of land uses, but also the greatest mix, with significant amounts of each of the major land use categories for which parking demand is estimated. Current zoning already allows large portions of this district to provide no parking. For purposes of the demand analysis, the study team assumed lower ratios than conventional ITE requirements or current zoning definitions, based on reduced parking allowances in mixed use districts in comparable downtown districts in other U.S. cities. This is driven by a general assumption that a higher degree of walking trips within the area meets overall travel demand than in more single-use-oriented districts, a concept referred to in transportation planning and engineering as internal capture. This assumption in turn is supported by feedback from visitors and residents, who express a strong desire to be able to walk short distances to reach destinations.

Diagrams on the following page illustrate the potential of these different uses to share parking spaces and lower the overall amount of parking needed in the Historic District, with a difference of over 4,000 spaces between estimated demand based on traditional zoning and expected demand.



HISTORIC DISTRICT: PRIMARY LAND USES AND ASSUMED ACTIVITY		
Land Use Type	Intensity	Assumed Parking Ratio
Single-Family Residential	695 units	not used in model estimates (self-parked)
Condo	964 units	1 space per unit
Other Multi-Family	1,653 units	1 space per unit
Retail	922,895 SF	2.5 spaces per 1,000 SF
Office	2,176,105 SF	2.75 spaces per 1,000 SF
Hotel	2,460 rooms	0.67 spaces per room
Restaurant	472,643 SF	2.5 spaces per 1,000 SF
SCAD student population*	3,000 students	0.5 spaces per student
Museum/Gallery	115,000 SF	1 space per 1,000 SF
Church	60,000 SF	3.8 spaces per 1,000 SF





### Comparison to Observed Utilization

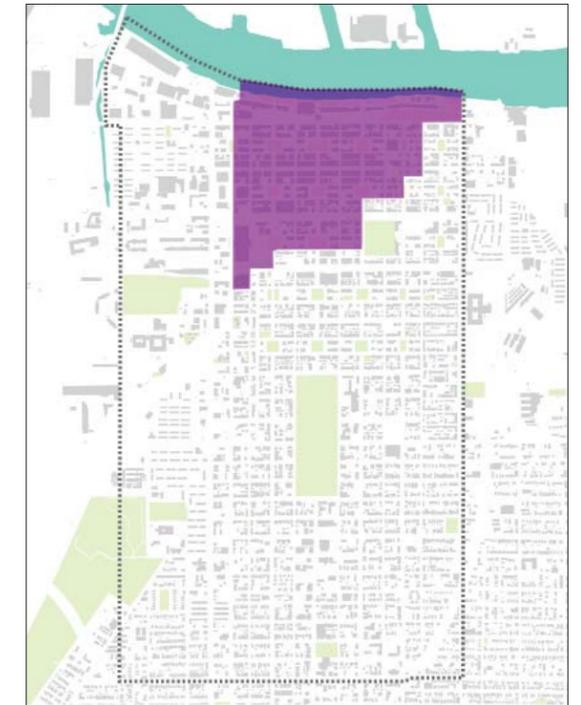
When comparing the level of expected demand in the Historic District to actual utilization, using figures discussed in Technical Memorandum 3.1, actual parking activity levels are lower throughout most of the day. There is a significant gap between estimated demand and actual use during the middle of the day, although this gap narrows into the evening to a point where parking activity exceeds estimated shared demand from 9 to 11 PM. This is likely due to the Historic District's concentration of entertainment land uses that may extend the high-demand time periods of land uses generally classified as restaurants.

Nonetheless, there is still a difference between this amount and the maximum total amount of parking available in the Historic District. The district contains all five of the City of Savannah-owned garage facilities as well as numerous lots (accounting for nearly 3,000 spaces) and on-street facilities (another 7,000 spaces).

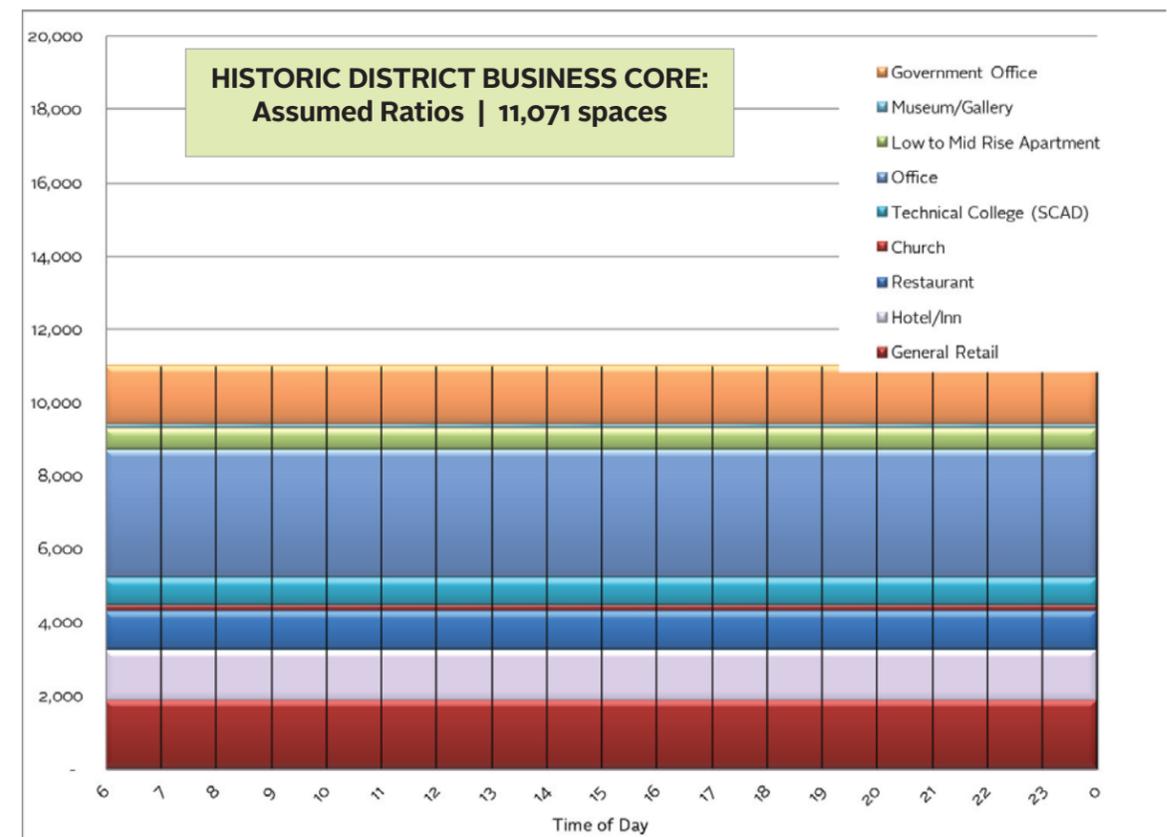
Overall, the peak levels of use only account for around 55 percent of parking in this district, well below the estimated demand.

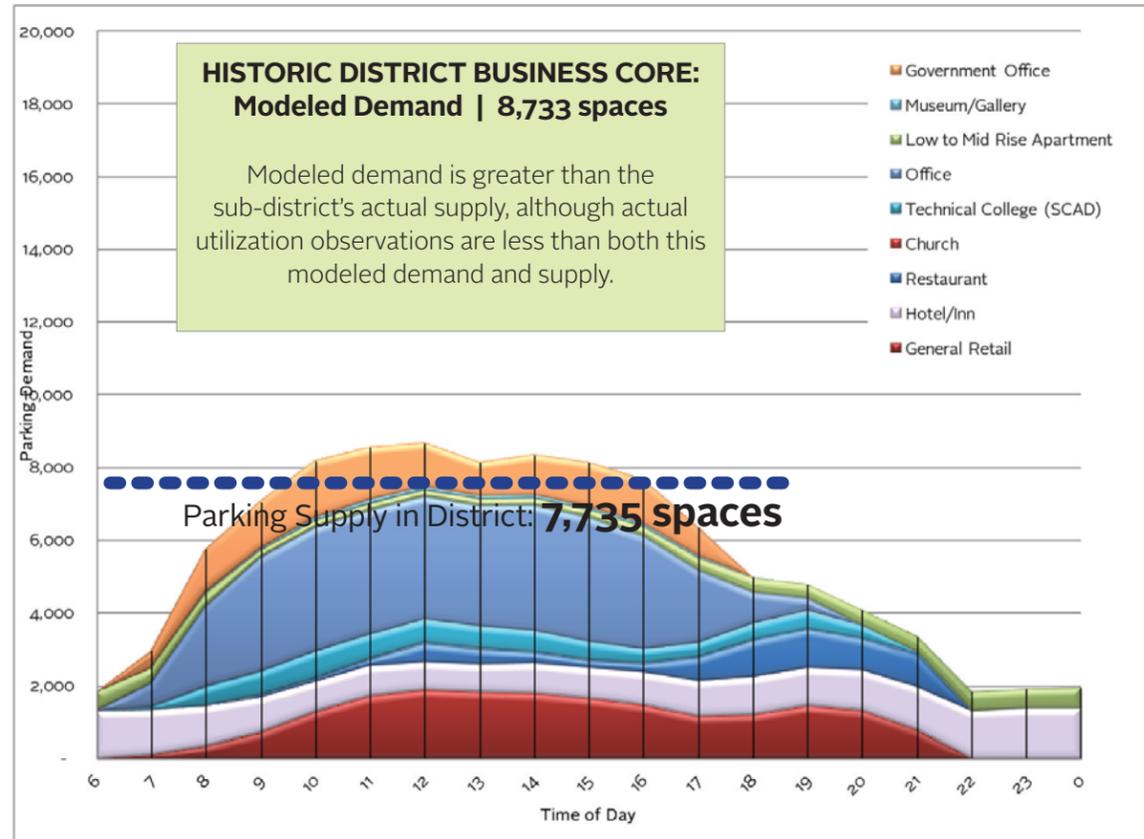
### Historic District Subareas: Business District Core

Because of the complex nature of the Historic District area, this analysis subdivided it into two additional subareas to better understand the potential for neighborhood spillover and demand related more closely to business and residential uses. One of these focused on the business core generally located along Bull and Broughton Streets and constituting the northwest half of the district, and the other focused on the primarily residential areas around the southern squares and Colonial Park Cemetery, constituting the southeastern half of the district. Both of these subareas used the same parking ratios assumed for the overall district and presented in the table on page 24.



While the business district generates much of the Historic District's demand, it also sees the greatest levels of parking sharing, as shown in the diagrams on the following page.

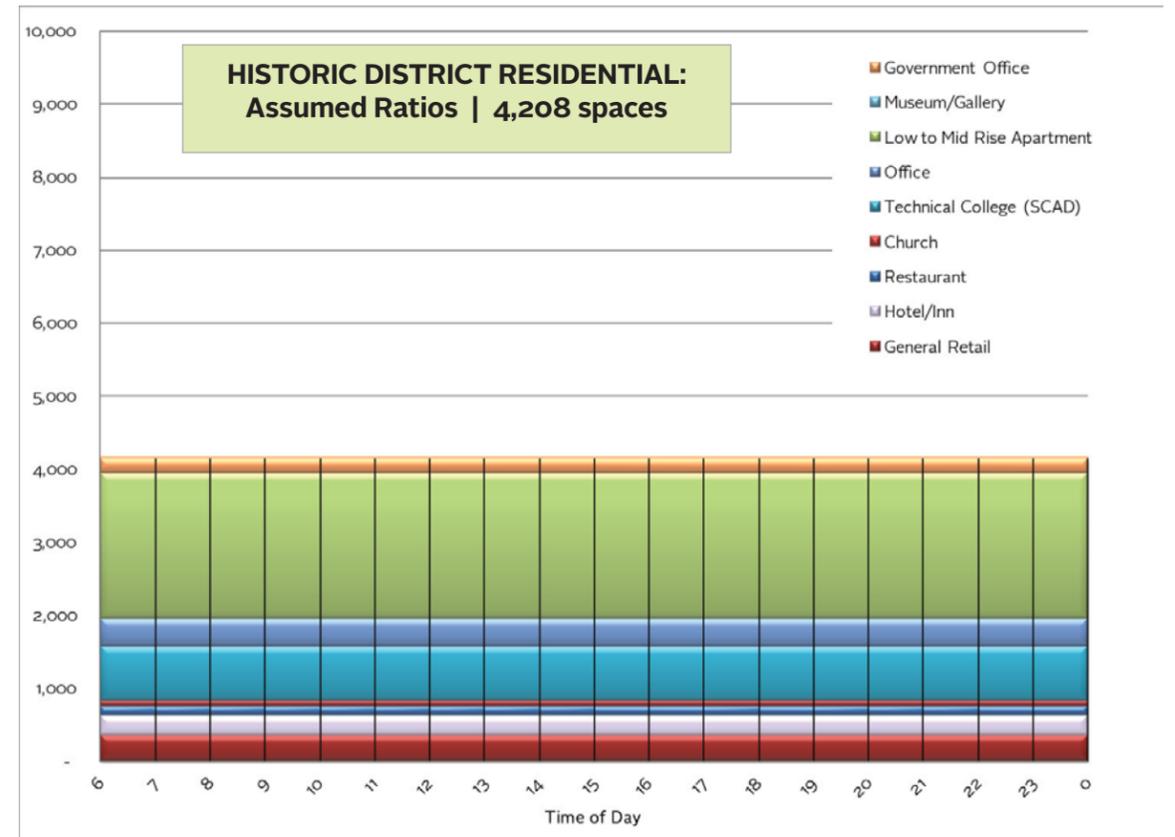
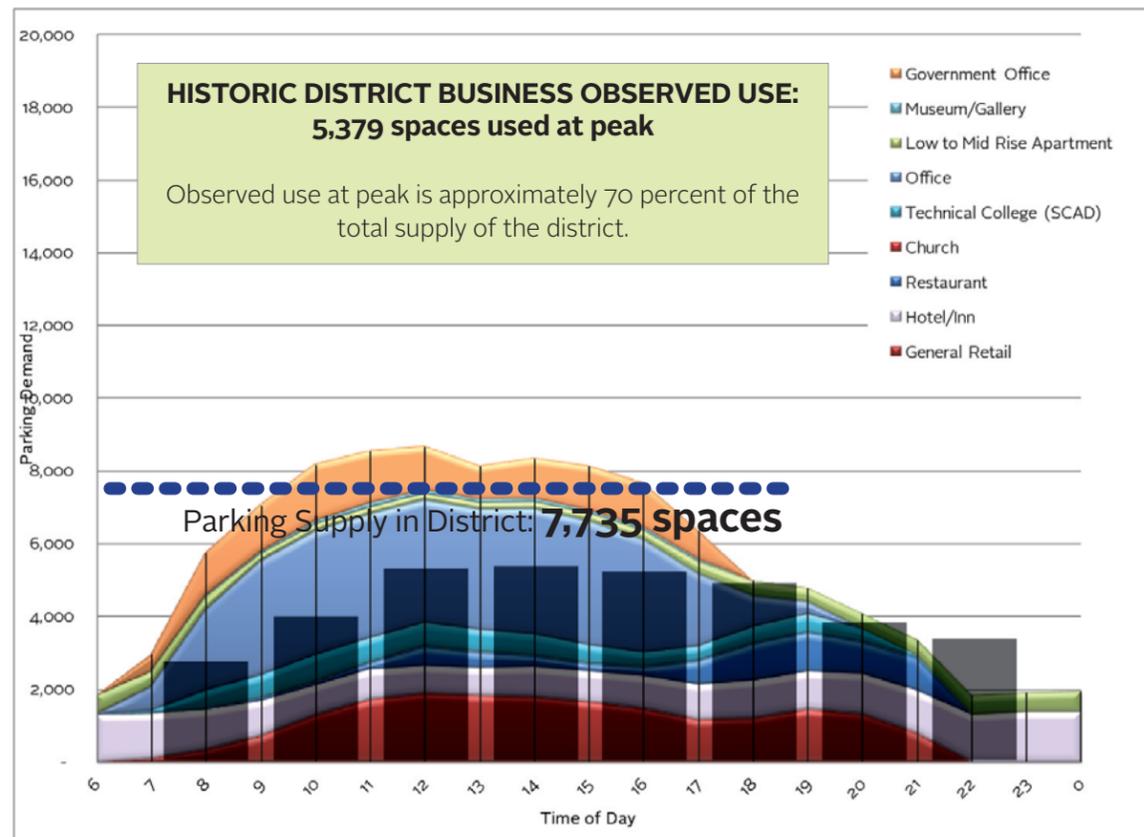
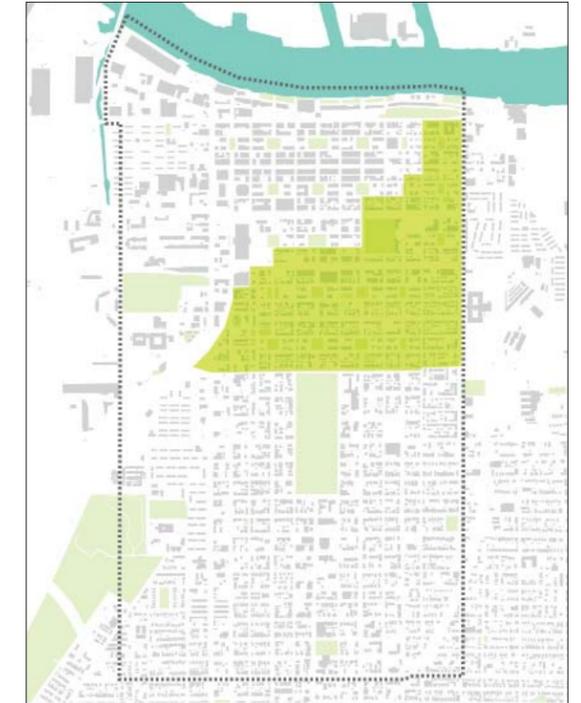


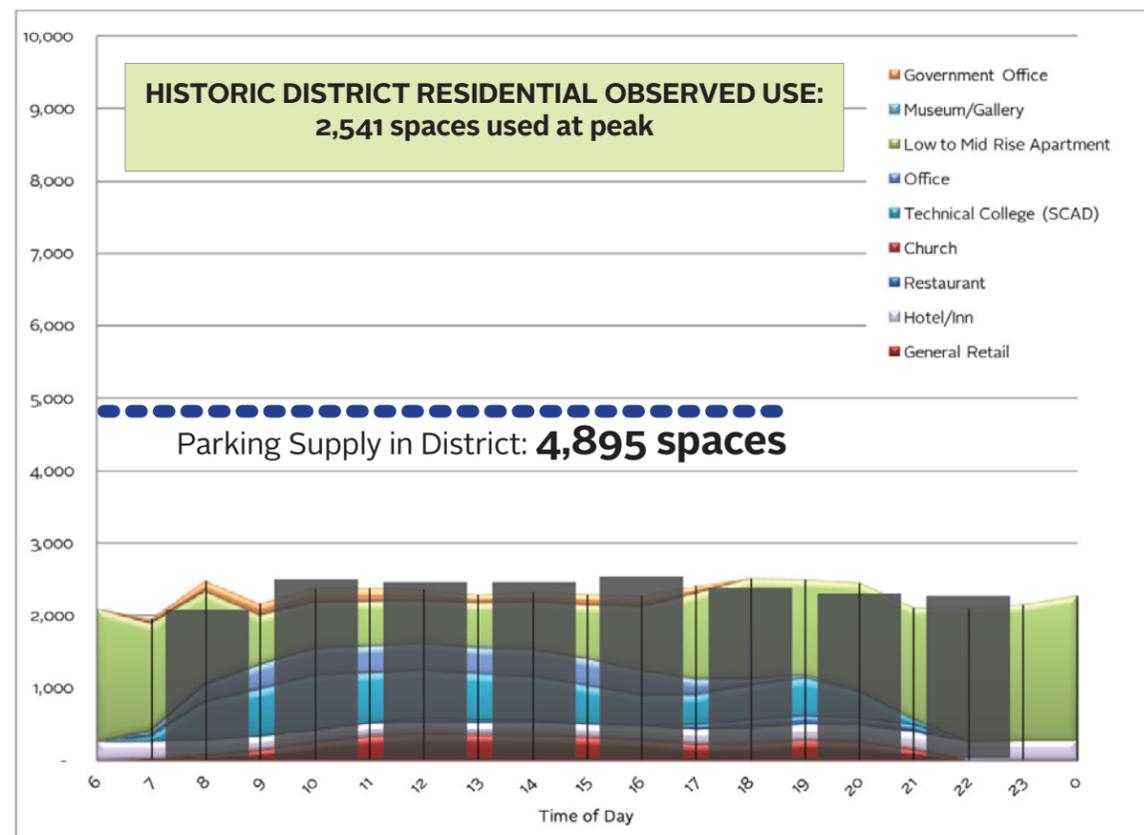
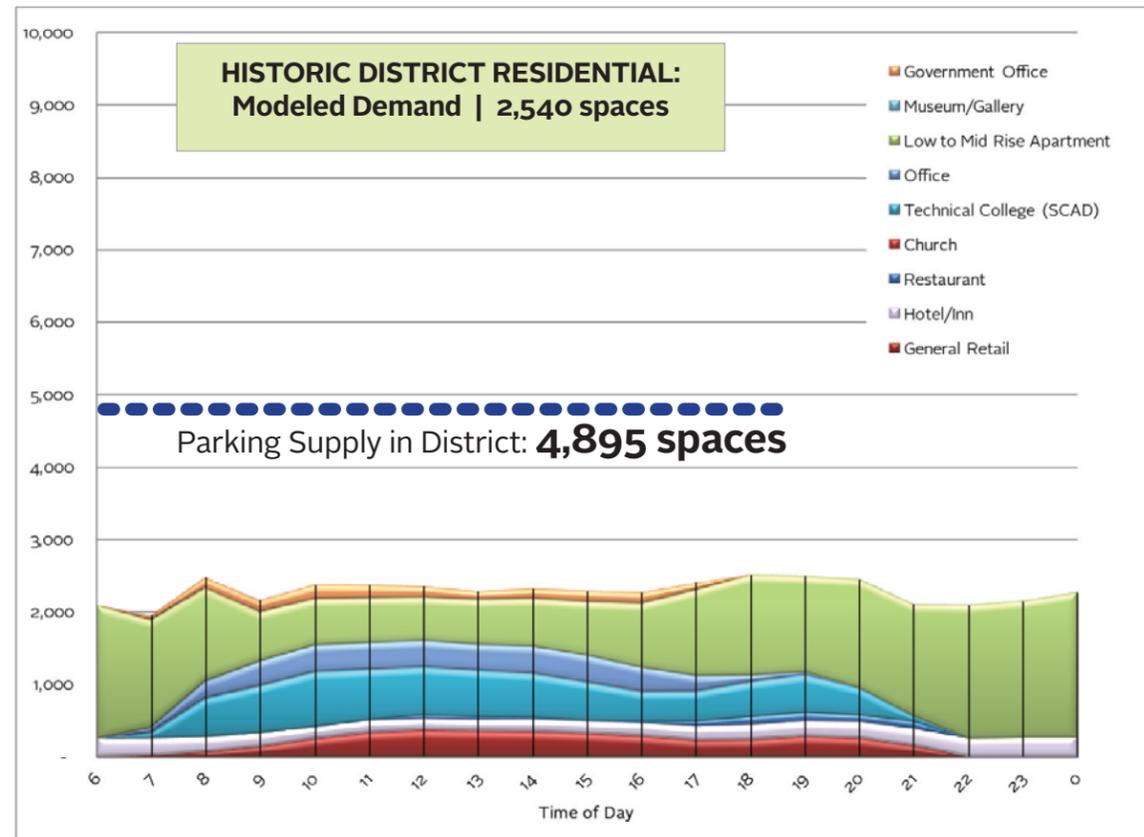


### Historic District Subareas: Residential Neighborhoods

The residential portion of the Historic District has a smaller supply of parking, more dependent on street parking and small lots, although it still features nearly 5,000 spaces. Parking demand in this sub-district is driven primarily by residential uses, though its mix of uses still offer potential for sharing of spaces and an overall lower modeled demand. Actual observed utilization amounts are at or slightly greater than modeled demand (depending on time of day), suggesting that this district's parking supply may serve demand of the adjoining business subdistrict.

Nonetheless, this level of demand is less than supply at peak periods by approximately 2,350 spaces (nearly half of the supply).





## EVENTS DISTRICT

The Events District is located immediately to the west of the Historic District and generally includes the portion of the study area north of Interstate 16 and west of Montgomery Street. This area includes the Coastal Georgia Center, SCAD Museum and major SCAD residential facilities, and several restaurants and hotels.

This district also includes a small but significant area of historically light industrial and warehousing uses along the Savannah River and north of Bay Street, centered on Indian Street. However, this area has undergone (and continues to undergo) major change in use, with SCAD recently opening facilities and new retail businesses opening on Indian Street.

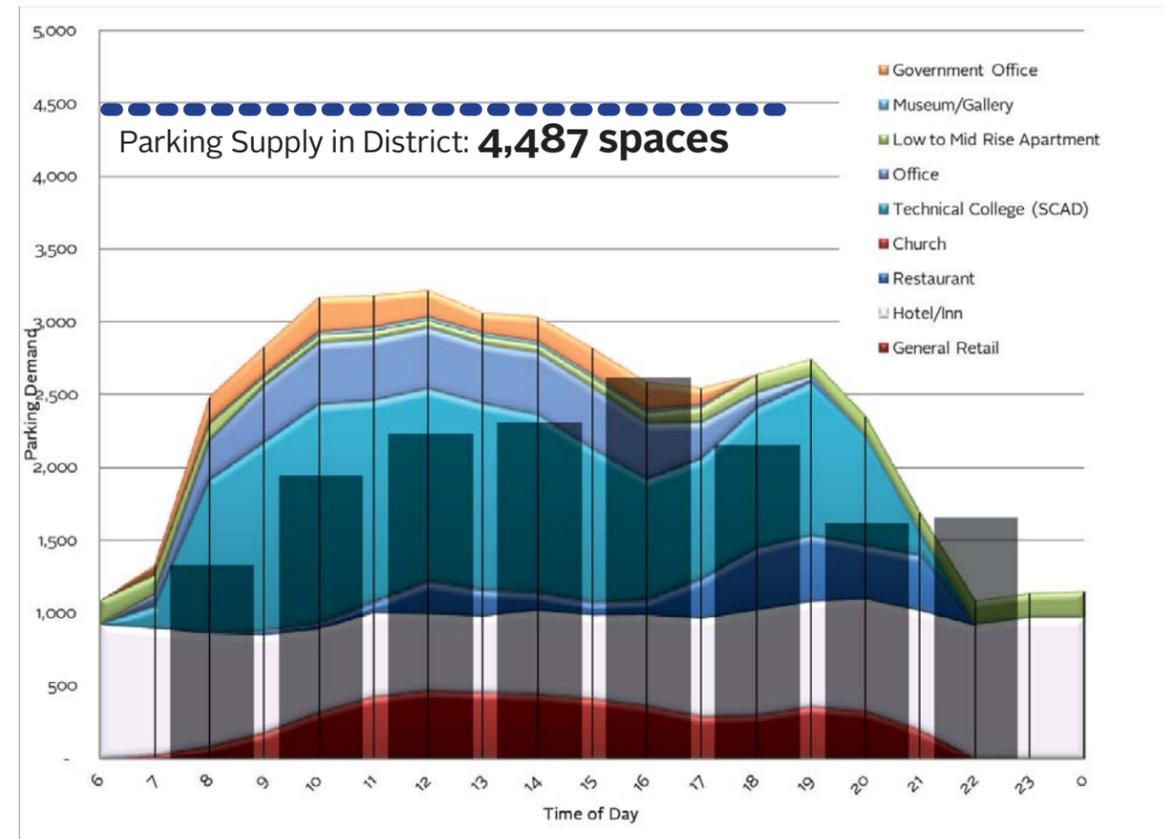
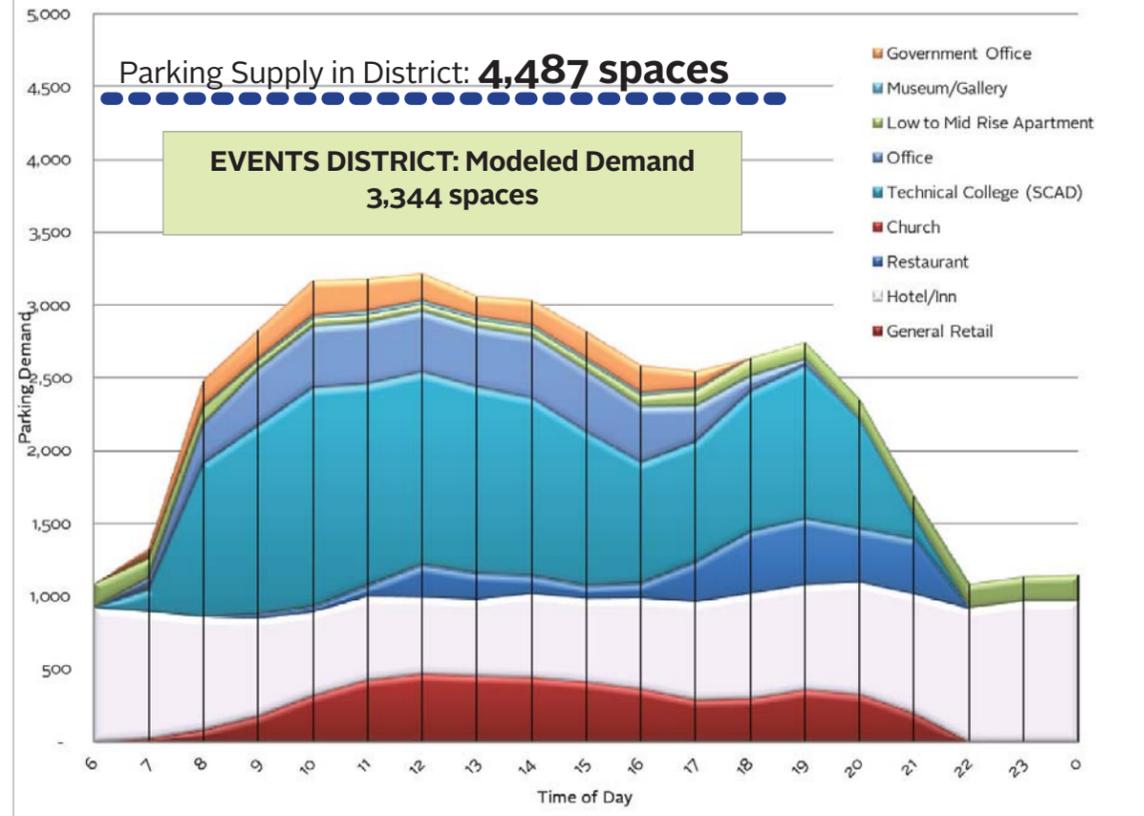
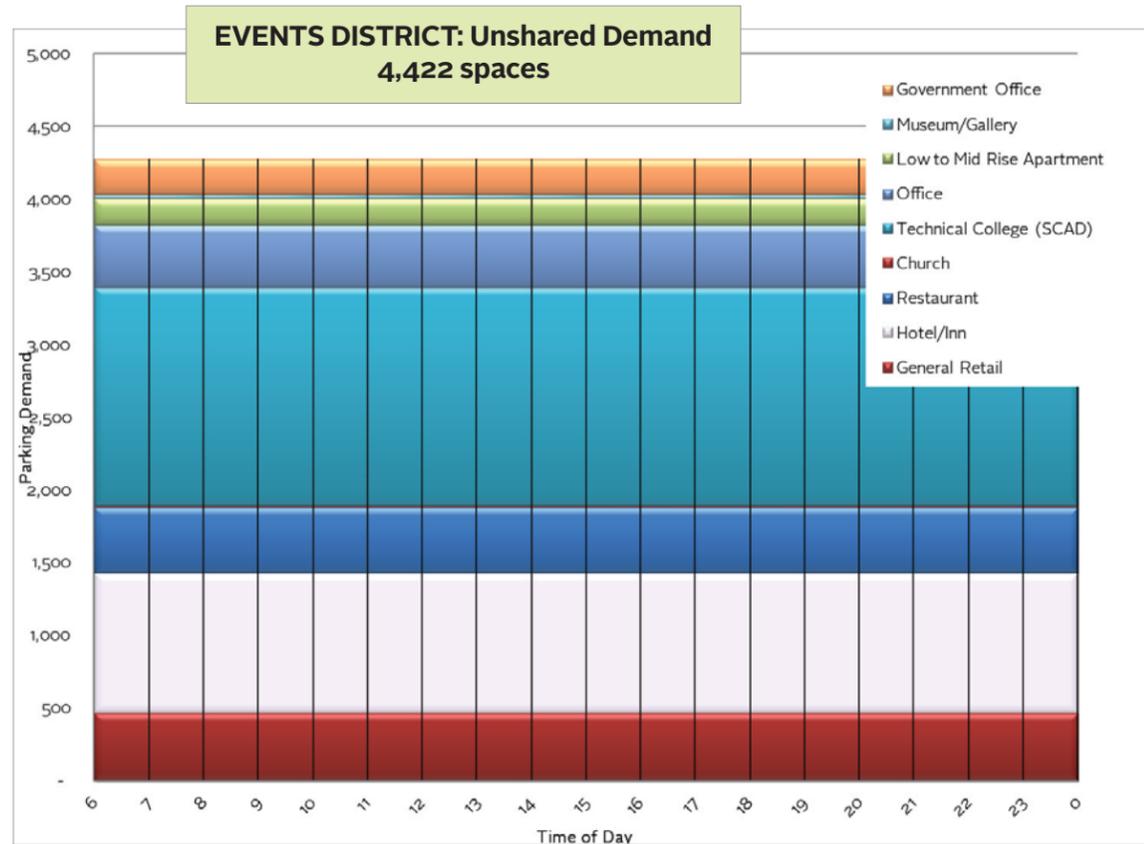
As the Events District is increasingly offering a mix of land uses that mirrors the Historic District and hotels have expanded into this area, the parking demand analysis assumed similar rates to those used for the Historic District—and these are lower than those currently suggested in the minimum requirements of the current City of Savannah zoning ordinance.

The diagrams on the following page illustrate how these estimated levels of demand compare between shared and unshared parking.



### EVENTS DISTRICT: PRIMARY LAND USES AND ASSUMED ACTIVITY

Land Use Type	Intensity	Assumed Parking Ratio
Single-Family Residential	10 units	not used in model estimates (self-parked)
Condo	48 units	1 space per unit
Other Multi-Family	133 units	1 space per unit
Retail	191,720 SF	2.5 spaces per 1,000 SF
Office	281,704 SF	2.75 spaces per 1,000 SF
Hotel	1,500 rooms	0.67 spaces per room
Restaurant	179,400 SF	2.5 spaces per 1,000 SF
SCAD student population*	3,000 students	0.5 spaces per student
Museum/Gallery	95,000 SF	1 space per 1,000 SF
Church	2,900 SF	3.8 spaces per 1,000 SF
Warehouse	305,000 SF	0.4 spaces per 1,000 SF



### Comparison to Actual Utilization

When comparing the level of potential shared parking demand in the Events District to actual utilization, actual parking activity levels are lower throughout most of the day, with the only time they match or even exceed these levels in the last hours of the business day (3 to 5 PM) and in the late evening (9 to 11 PM). This may occur for multiple reasons that have been suggested during the study's stakeholder and public discussions: the late afternoon period is a time when SCAD facilities may draw students wishing to park, the district is adjacent to (and increasingly home to) numerous restaurants where employees may look to find nearby available parking, and visitor-oriented uses may be drawing guests. It is also possible, based on input from members of the public and area stakeholders, that parking activity increases during this time because it is the last two hours of enforcing

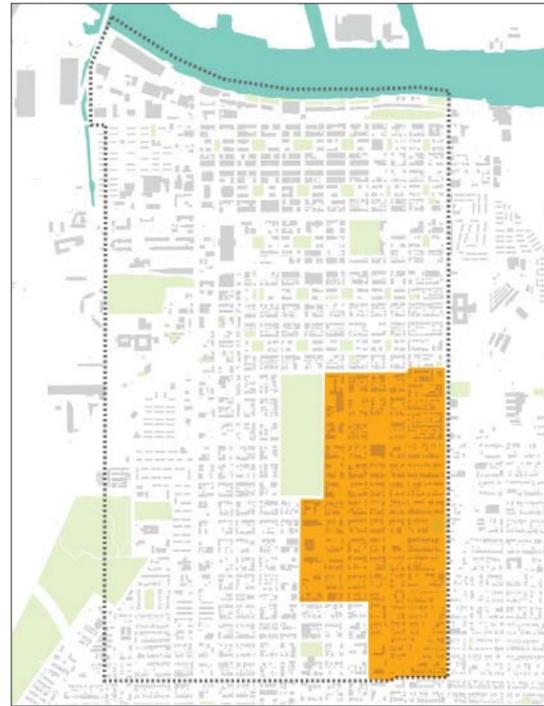
on-street regulations, and any of the users mentioned above may be drawn to on-street locations in this district due to their proximity to attractions in the Historic District such as City Market, Ellis Square, and the Savannah Civic Center.

However, actual use and demand in this district are still below the total number of spaces available.

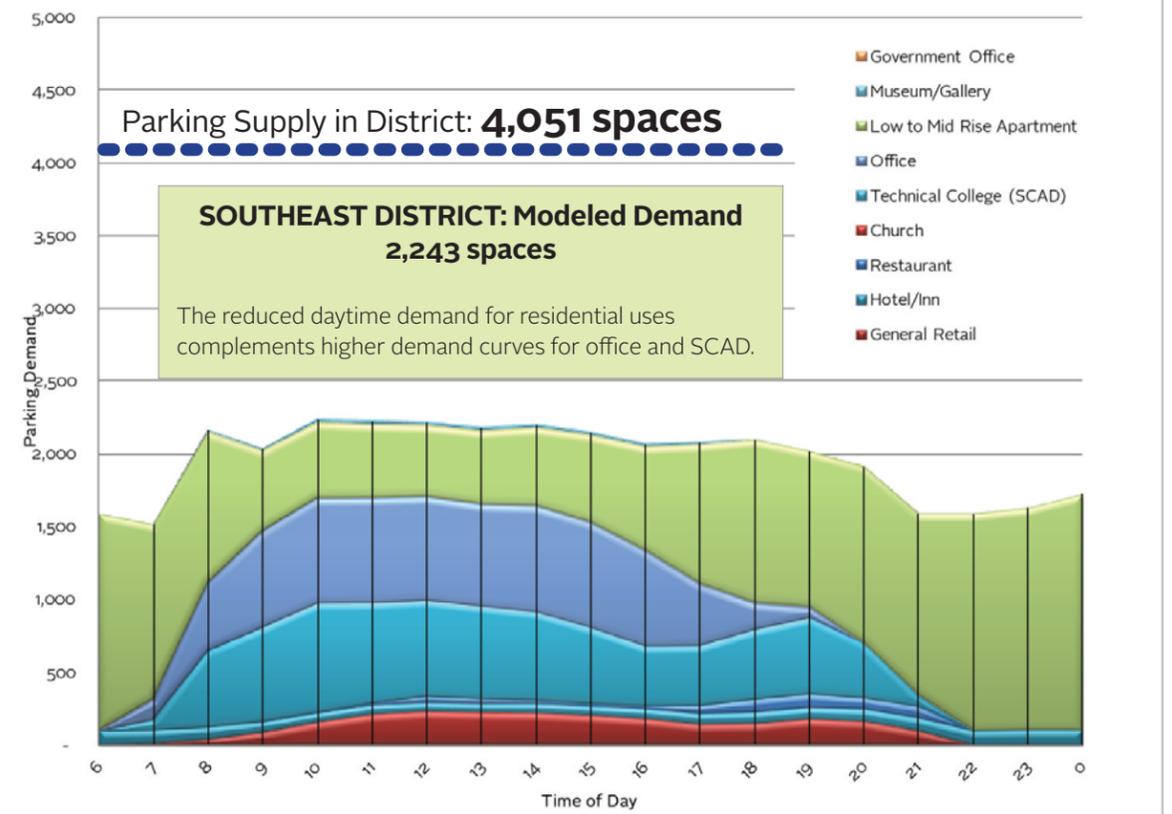
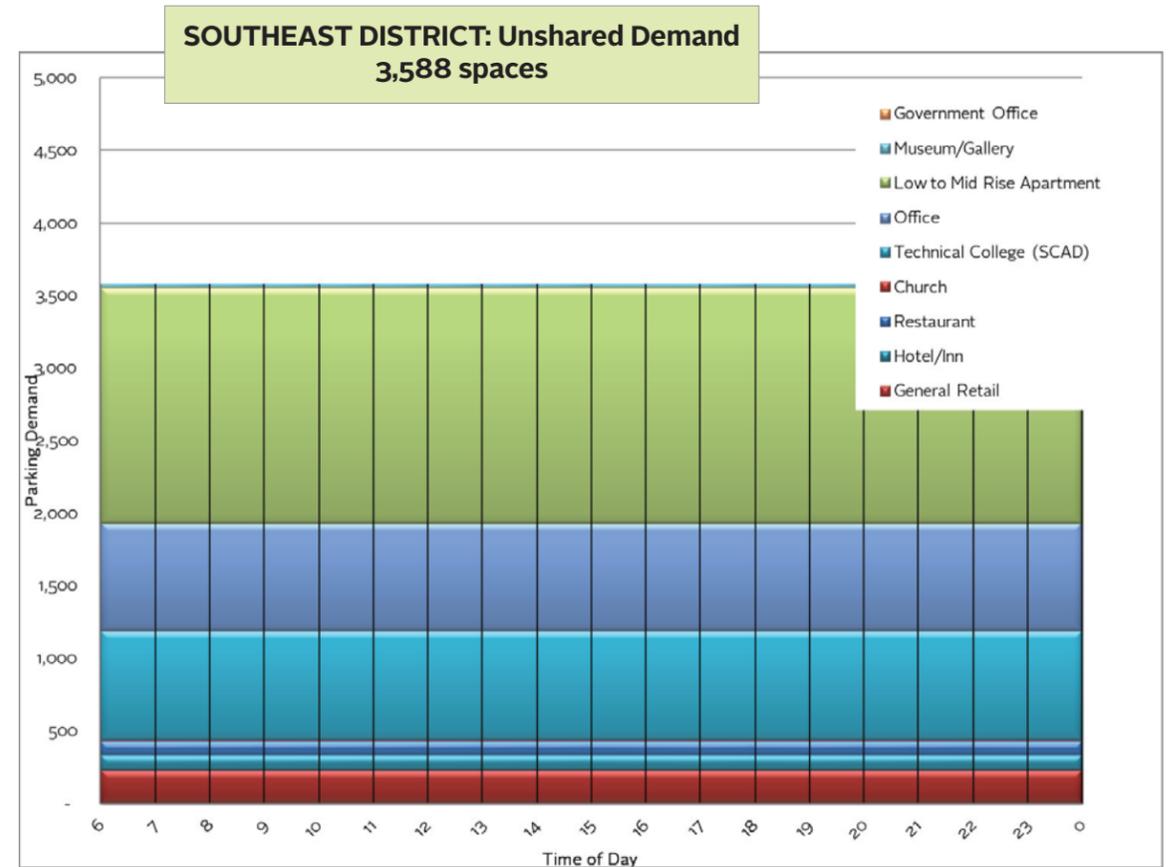
## SOUTHEAST DISTRICT

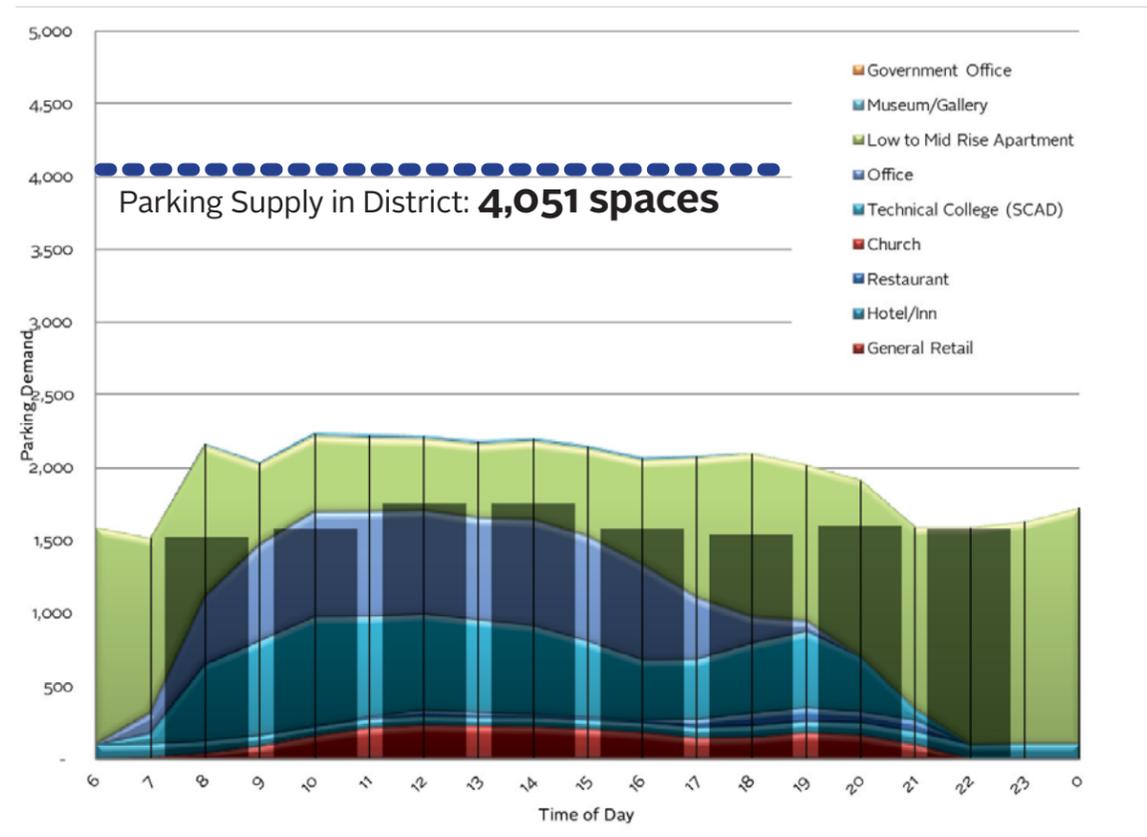
The portion of the study area south of Gaston Street and not within the Thomas Square district was divided into two sections (along Bull Street) to set a more reasonable boundary for potential sharing of parking facilities. The eastern half of this area, termed the Southeast District in this parking demand analysis, is primarily residential but includes a larger amount of office space than any other district outside of the Historic District and the study area's only supermarket (the Kroger on Gwinnett Street) and a substantial number of lodging and restaurant uses. Lodging in this area features many bed and breakfast uses, and the degree to which these businesses provide their own off-street parking varies.

In this district, due to land use patterns and demand assumed to follow a more conventional pattern of uses, the analysis assumed parking requirements as proposed in NEWZO and that take advantage of potential reductions that it would allow.



SOUTHEAST DISTRICT: PRIMARY LAND USES AND ASSUMED ACTIVITY		
Land Use Type	Intensity	NEWZO Parking Requirements
Single-Family Residential	563 units	not used in model estimates (self-parked)
Condo	202 units	1 space per unit
Other Multi-Family	1,417 units	1 space per unit
Retail	95,027 SF	3.5 spaces per 1,000 SF
Office	299,794 SF	2.75 spaces per 1,000 SF
Hotel	165 rooms	1 space per room
Restaurant	58,212 SF	4 spaces per 1,000 SF
SCAD student population*	1,500 students	0.5 spaces per student
Museum/Gallery	115,000 SF	1 space per 1,000 SF





### Comparison to Actual Utilization

The actual level of parking utilization in the Southeast District is generally at or below estimated demand during all times of the day, with the only time where the two are roughly equal being in the early morning (around 7 AM) and the late evening (9 to 11 PM). The actual use levels are fairly uniform throughout the district throughout the day, suggesting that residential and non-residential uses, primarily SCAD facilities and

offices, complement the levels of residential demand throughout the day.

In any case, the number of available spaces in the district is higher than both estimated demand and actual use.

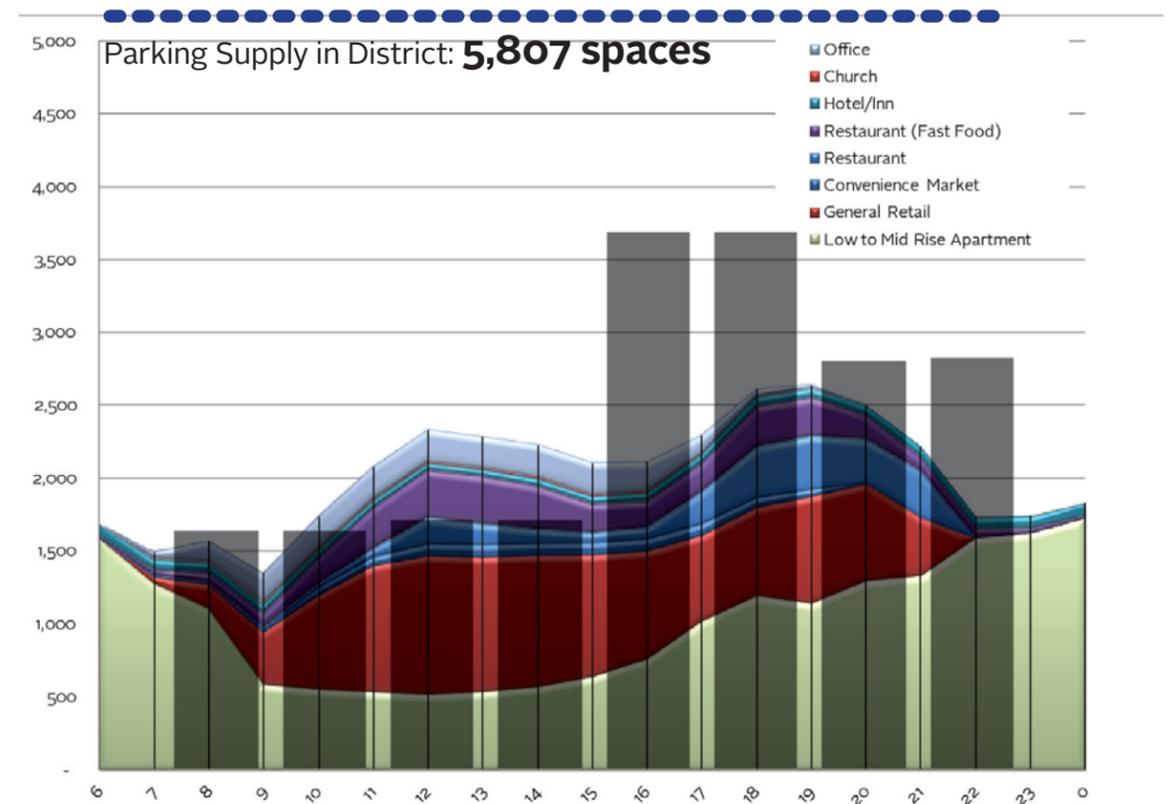
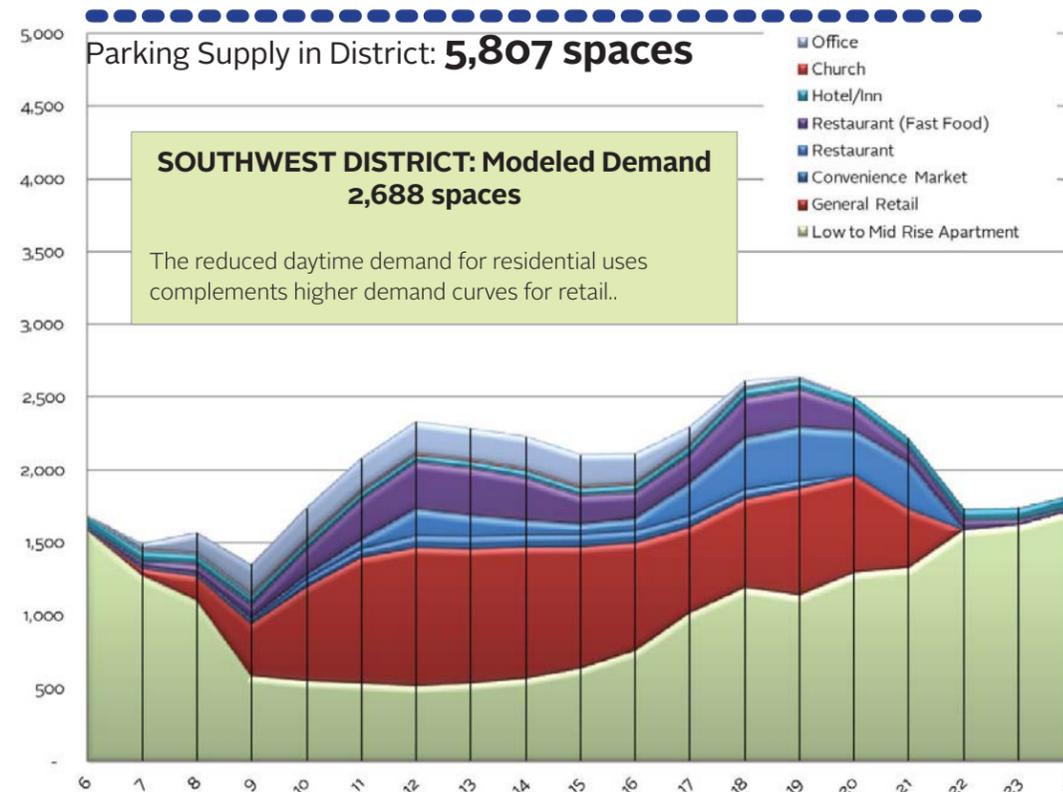
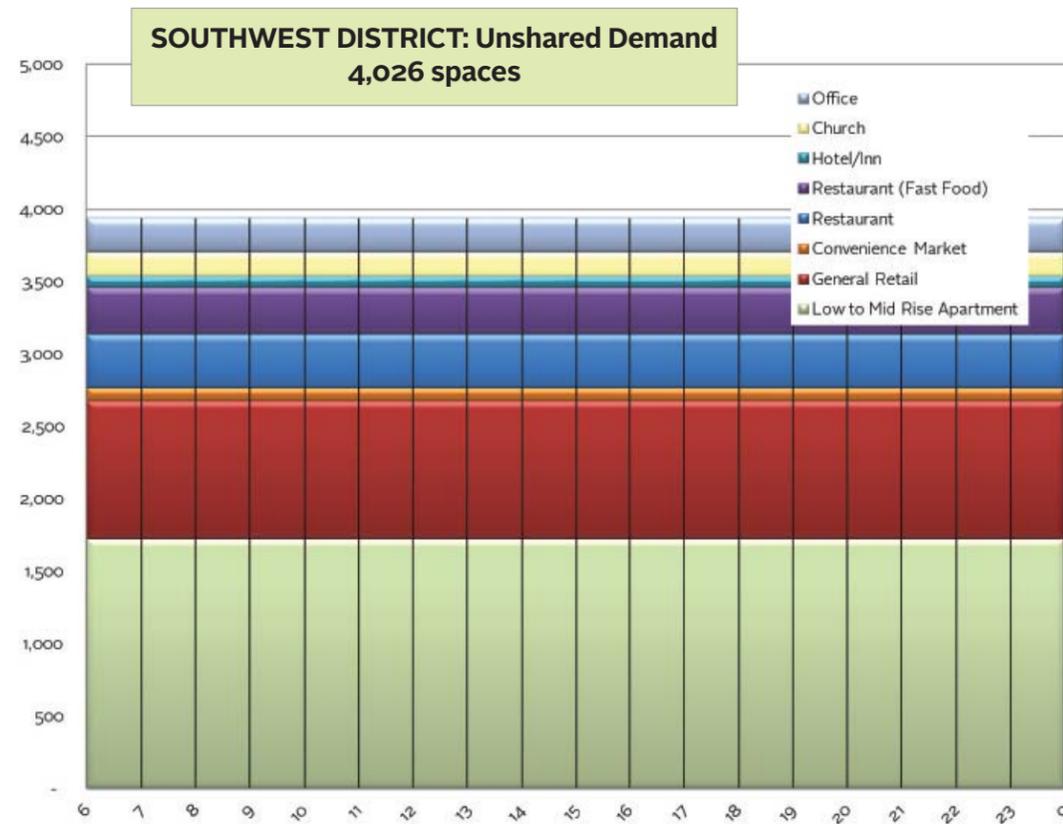
## SOUTHWEST DISTRICT

On the western side of Bull Street and Forsyth Park south of Gaston, termed the Southwest District in this parking demand analysis, land use patterns are primarily residential but also include retail and restaurant uses along Martin Luther King, Jr. Boulevard. The demand calculations for this area assumed higher parking ratios than in the Historic and Events Districts, though Census data indicate that this district features relatively low rates of automobile ownership.

Of note in this district is the assumption that SCAD has no direct student activity associated with district parking facilities. Adjacency to the Thomas Square district (discussed beginning on Page 26) and its SCAD facilities may have an impact on the on-street parking in this district, but was not used in calculations provided here.



SOUTHWEST DISTRICT: PRIMARY LAND USES AND ASSUMED ACTIVITY		
Land Use Type	Intensity	NEWZO Parking Requirements
Single-Family Residential	486 units	not used in model estimates (self-parked)
Condo	169 units	1 space per unit
Other Multi-Family	1,211 units	1 space per unit
Retail	229,394 SF	4.5 spaces per 1,000 SF
Office	121,031 SF	3 spaces per 1,000 SF
Hotel	65 rooms	1.25 spaces per room
Restaurant	61,490 SF	6 spaces per 1,000 SF
Fast Food Restaurant	40,000 SF	8 spaces per 1,000 SF
Church	44,900 SF	3.8 spaces per 1,000 SF



### Comparison to Actual Utilization

The study's utilization counts discussed in Technical Report 3.1 identified notably high levels of on-street parking utilization throughout a large area of the Southwest District during one period (afternoon from 3 to 7 PM) only. This does not have an apparent explanation when considering the area's land use characteristics, especially in the absence of SCAD facilities and student housing in the area. However, stakeholders and community members have suggested that the counting period may have coincided with a special event in the area on that particular day, possibly at one of the churches in the area.

However, the actual levels of observed parking in the area meet or exceed estimated demand based on land use profile at other periods of the day as

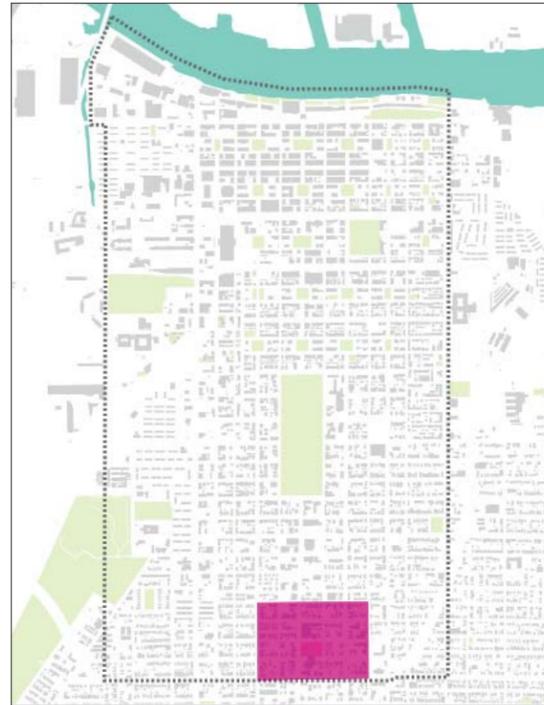
well. This may be due to single-family residential units depending more on street parking than in other districts. It may also be related, as suggested previously, to the adjacency of the Southwest District to Thomas Square and a spillover effect of SCAD students, some of whom are not permitted to park directly at academic facilities, who may be opting to use free or unregulated parking outside of the Thomas Square district.

The Parking Matters study team will continue to assess parking patterns in this district to gain additional perspective on these high levels of utilization, especially in the late afternoon/early evening period.

## THOMAS SQUARE DISTRICT

In the relatively small area around Thomas Square, SCAD's recent acquisition and conversion of an historic library building into Arnold Hall has introduced a new level of access and parking demand in the area. The Parking Matters study team defined this area as one for special attention early in the study due to stakeholder concerns that this area, formerly marked by primarily residential uses and patterns of parking demand typical of residential areas, was undergoing change related to SCAD's expansion and beginning to experience parking problems as a result.

The area accounts for a small number of parking spaces due to its extent (bounded by 33rd Street on the north, 37th Street on the south, Barnard Street on the west and Lincoln Street on the east). It accounts for both office and academic-related uses for SCAD, as well as a significant retail component, much of this located at the district's south end along 37th Street.

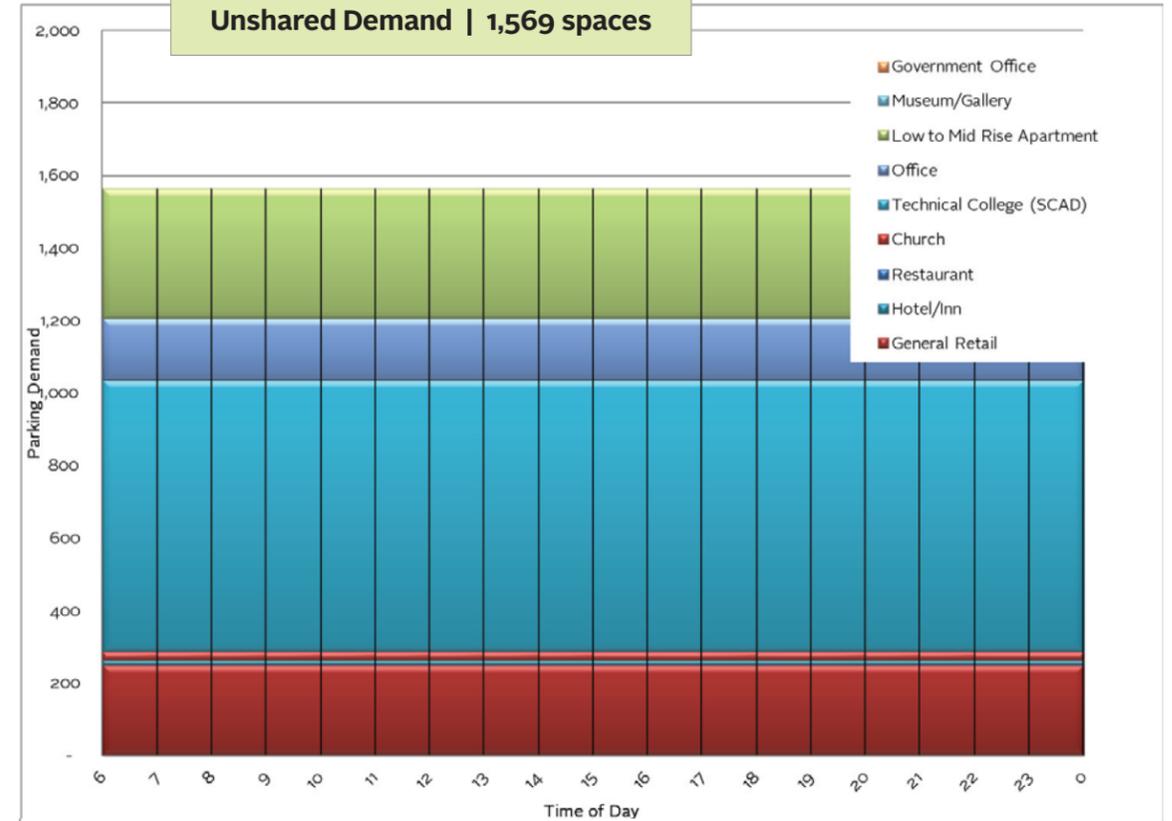


As illustrated in the diagrams on the following page, the high level of SCAD activity expected for the district is a primary driver of assumed parking demand. Although the shared parking diagram suggests that this demand occurs principally through the day and complements the demand profile for residential uses, it remains high and offers moderate potential for reduction of spaces demanded through shared parking.

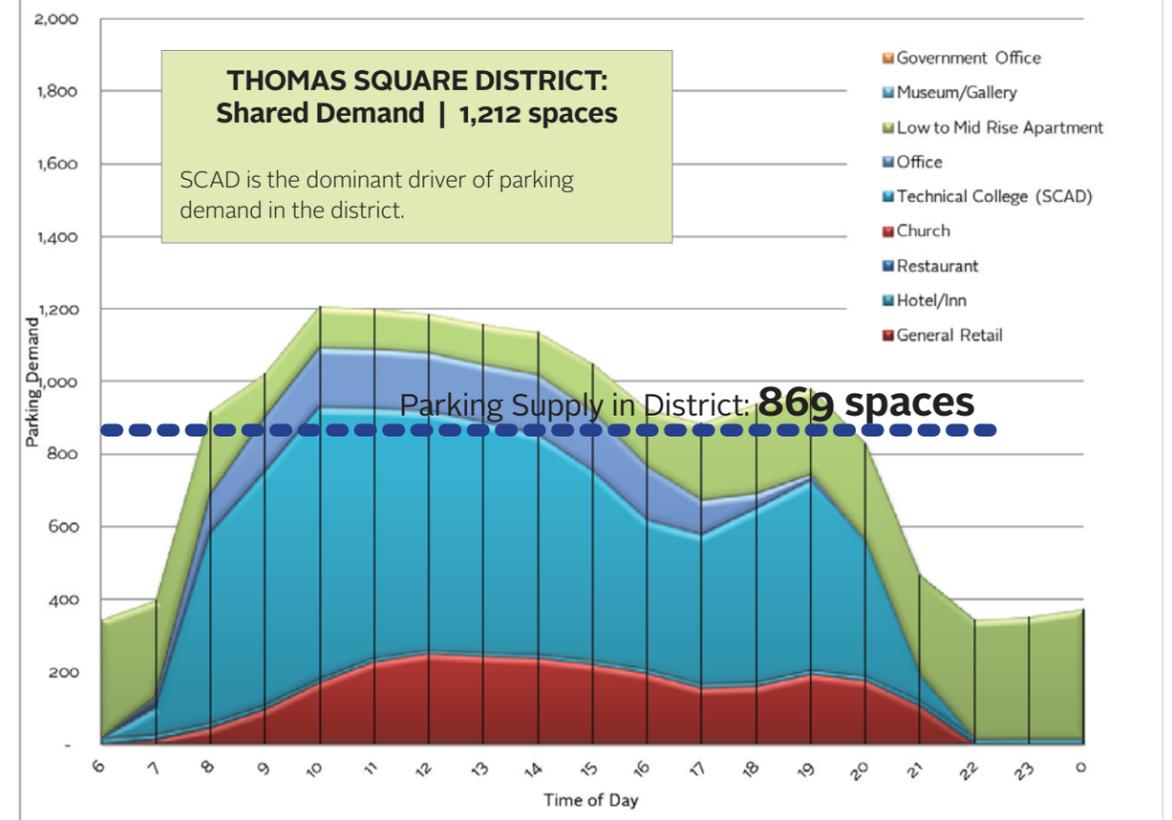
### THOMAS SQUARE DISTRICT: PRIMARY LAND USES AND ASSUMED ACTIVITY

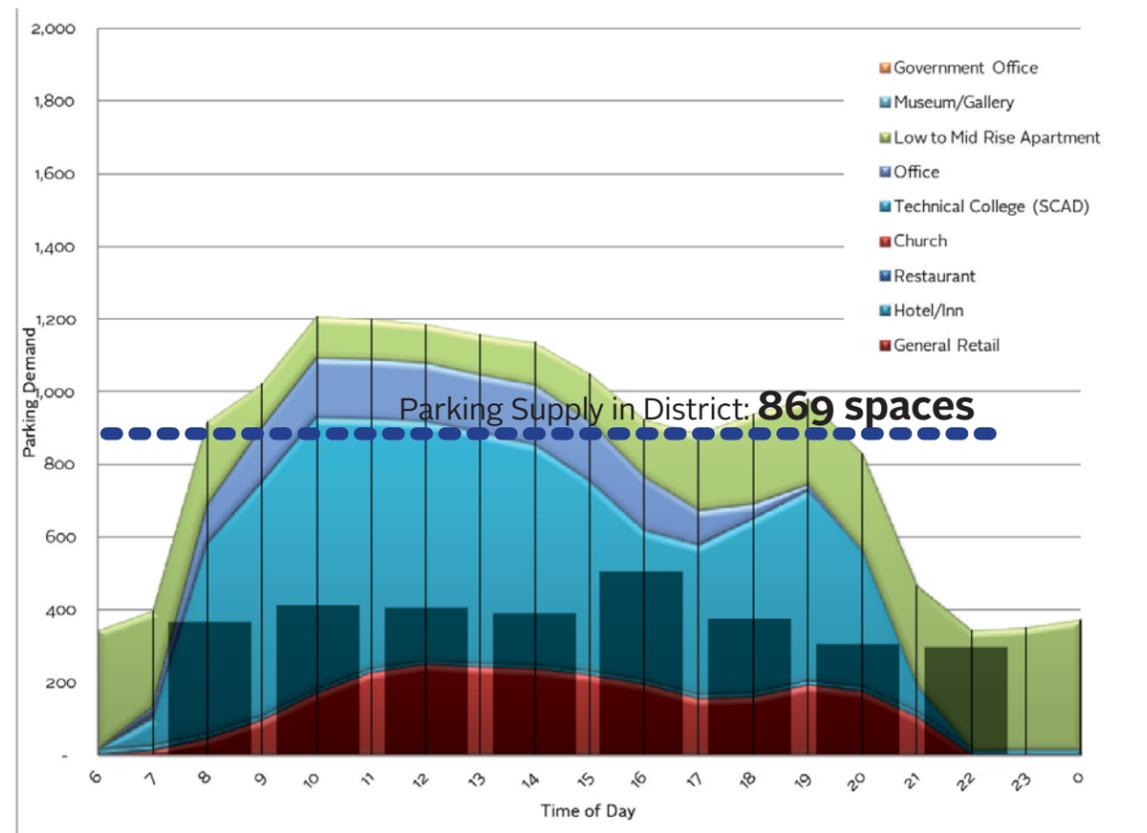
Land Use Type	Intensity	NEWZO Parking Requirements
Single-Family Residential	71 units	not used in model estimates (self-parked)
Condo	10 units	1.25 spaces per unit
Other Multi-Family	277 units	1.25 spaces per unit
Retail	83,693 SF	3 spaces per 1,000 SF
Office	96,920 SF	2.9 spaces per 1,000 SF
Hotel	25 rooms	1 spaces per room
Restaurant	5,000 SF	4 spaces per 1,000 SF
SCAD student population*	1,500 students	0.5 spaces per student
Church	5,800 SF	3.8 spaces per 1,000 SF

### THOMAS SQUARE DISTRICT: Unshared Demand | 1,569 spaces



### THOMAS SQUARE DISTRICT: Shared Demand | 1,212 spaces





### Comparison to Actual Utilization

Estimated demand in the Thomas Square district is notably higher than current levels of parking utilization. This echoes concerns expressed by stakeholders and community members throughout the process—namely, that the district does not have sufficient parking supply. When comparing both actual utilization and estimated demand to the supply of on-street spaces, estimated demand exceeds available supply.

As discussed in the assessment of the Southwest District, this may be related to higher levels of parking activity there, especially related to SCAD facilities and student parking.

However, actual utilization is lower than the current supply by approximately 370 spaces, a difference of over 40 percent. The restriction on SCAD student parking (especially freshmen) at academic facilities may be responsible for this difference in modeled demand and actual use.

## GENERAL OBSERVATIONS

The calculation of parking demand based on existing land use patterns generally reflects levels of parking demand and use both lower than the actual supply. The exception to this is in the Thomas Square district. As discussed previously, demand calculations are based on multiple factors, including time of day of the peak activity periods for specific uses, the potential for sharing related to proximity of complementary uses, and the parking ratios assumed. The following sections outline observations that should be considered along with the demand estimates presented in this Technical Report. They are not offered as explanations for the relationships between parking demand and actual parking use patterns; instead, they are intended to underscore important dynamics in how parking needs are understood and met in central Savannah. These topics are explored in other Technical Reports, especially Technical Report 3.2 on the role of multimodal transportation options in the study area's overall travel profile.

### Parking Ratios and 'Park-Once' Potential

In some districts, parking ratios may be higher than actual levels of use would suggest, even when these ratios are lower than those used in conventional parking demand analysis—and similar to many of those in the current City of Savannah zoning ordinance. In particular, many uses in the Historic District oriented to Savannah's large visitor population expect for some of their customers and visitors to walk from other nearby uses; even if visitors access the district by vehicle and use a parking space, it is likely that they may visit multiple land uses while their vehicles remained parked in the same locations. For this reason, even lower parking ratios than those assumed in this analysis might better align estimated demand with the actual number of spaces used.

## SCAD Transit and Bicycles

The levels of parking demand used in the demand calculations for SCAD follow current zoning requirements for student housing units (namely one space per two students); this assumes a similar level of driving and parking activity for all academic facilities. However, SCAD operates an extensive bus system between facilities that meets part of the overall travel demand of the college. Bicycles are likely another part of managing this demand; SCAD officials estimate that a Spring 2015 bicycle registration drive led to 500 new registrations alone, suggesting a larger number of bicycles (and bicyclists) within the SCAD community. Although SCAD does not maintain detailed information on who travels between specific facilities and when, it is likely that overall demand related to SCAD students is lower than the levels assumed in this analysis. More detailed discussion of the role of bicycles and transit in meeting overall SCAD-related travel demand is discussed in Technical Report 3.2.

### Auto Ownership Rates

The Parking Matters study area features several locations where lower-than-expected parking activity might be driven by lower auto ownership rates. These include student population related to SCAD and lower-income neighborhoods in the southern parts of the Parking Matters study area. Retail and other community serving uses in these areas do not have the same destination-oriented businesses as in the Historic District, suggesting that some of their parking demand may be met by walking and other non-driving trips.

## Section 3

# Future Land Uses and Potential Effects on Demand

## Key Points

The study also incorporates forthcoming development activity, both approved and still in planning stages, to gauge its impact on overall parking demand.

The primary uses expected are multifamily housing in projects of over 50 units, student housing and hotels.

Many smaller infill projects are expected to add yet more housing units to the study area.

In addition to the existing parking levels and estimation of demand based on existing land uses, the Parking Matters study also considers future development. Throughout the period of the study, numerous development applications have been submitted to the Metropolitan Planning Commission and City of Savannah for review. Even for only the approved and potential development projects for which land use program information has been submitted, these applications include at least 1,000 hotel units, approximately 550 multifamily dwelling units, and student housing for over 2,000 students adjacent to the Parking Matters study area boundary. Many more potential projects have been presented only as concepts and did not include detailed program information at the time of developing this analysis and Technical Report.

The Parking Matters team worked with Metropolitan Planning Commission staff to understand the magnitude and land use nature of this forthcoming development and incorporated it into the demand calculations for parking. New projects were only proposed in or adjacent to the Historic District, Events District and Southeast District.

### NEW DEVELOPMENT

The table on the following page summarizes the estimated development program levels for which MPC staff were able to provide working program estimates. It does not identify specific projects, but does indicate how projects are distributed by each of the five parking demand analysis districts.

A notable observation on this data is that much of the development applications have proposed to add parking along with developments. While new development will add to parking demand, the estimates of future development have also accounted for how this development will add to parking supply. Detailed discussions of specific district-level impacts follow beginning on page 46.

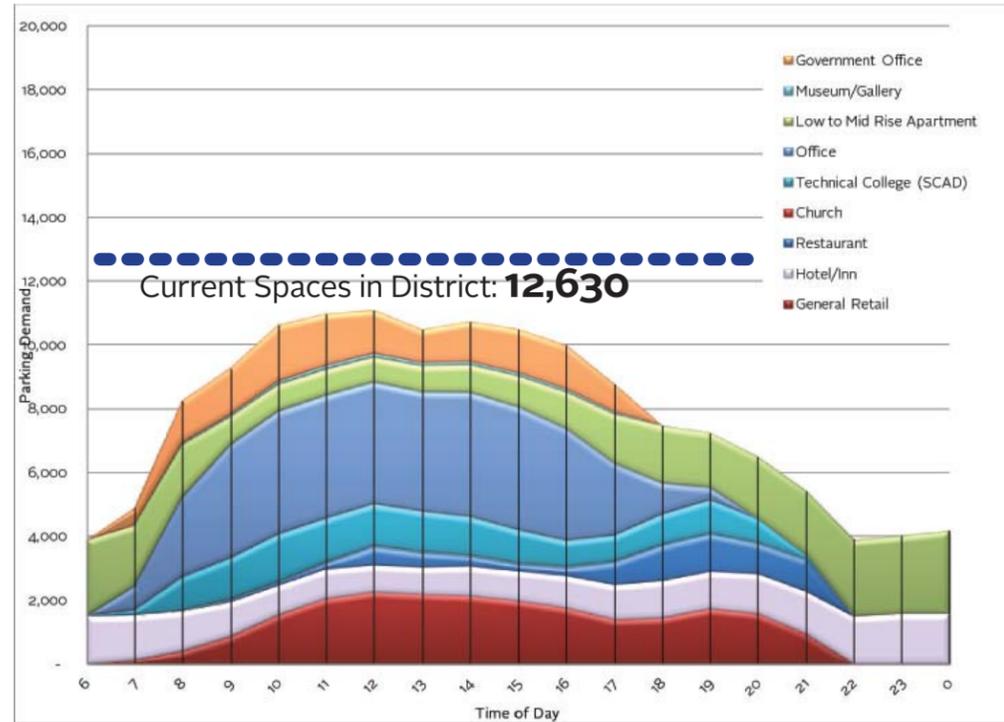
APPROVED AND PLANNED DEVELOPMENT ACTIVITY IN THE PARKING MATTERS STUDY AREA			
	Land Use Type	Intensity	Parking to be Provided
Parking Matters Study Area	Single-Family Residential (detached and semi-detached)	22 units	714 spaces
	Multifamily (apartments or condominiums)	550 units	
	Student Housing	2,037 beds	1,029 spaces
	Hotel	1,003 rooms	967 spaces
	Museum/Gallery/Cultural Center	27,400 SF	none specified
	Office	11,000 SF	220 spaces
	Event Space	not specified	
	APPROVED AND PLANNED DEVELOPMENT ACTIVITY IN EACH STUDY AREA SUBDISTRICT		
Historic District	Multifamily	72 units	none specified
	Hotel	172 rooms	167 spaces
Events District	Multifamily	359 units	none specified
	Student Housing	2,037 beds	1,029 spaces
	Hotel	839 rooms	802 spaces
Southeast District	Multifamily	122 units	130 spaces

## HISTORIC DISTRICT

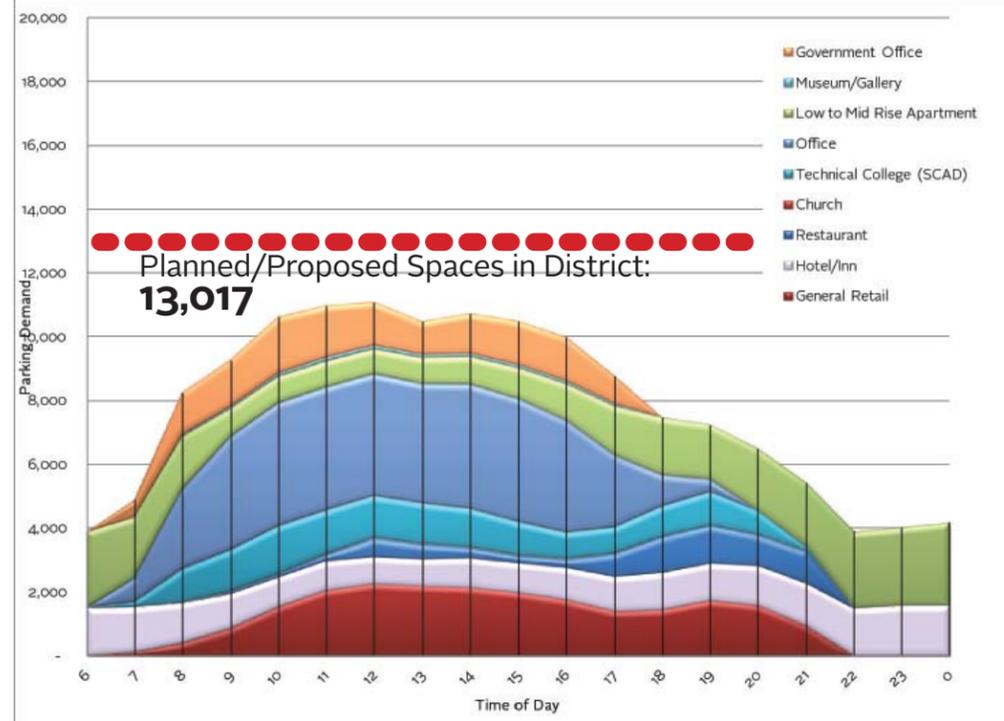
Changes in estimated parking demand are marginal because of the limited number of land use changes proposed in the historic district.

The amount of parking being added through hotels increases the district's overall supply, potentially deferring the need to construct additional facilities.

HISTORIC DISTRICT: Supply and Expected Demand Today



HISTORIC DISTRICT: Supply and Expected Demand With Forthcoming Development

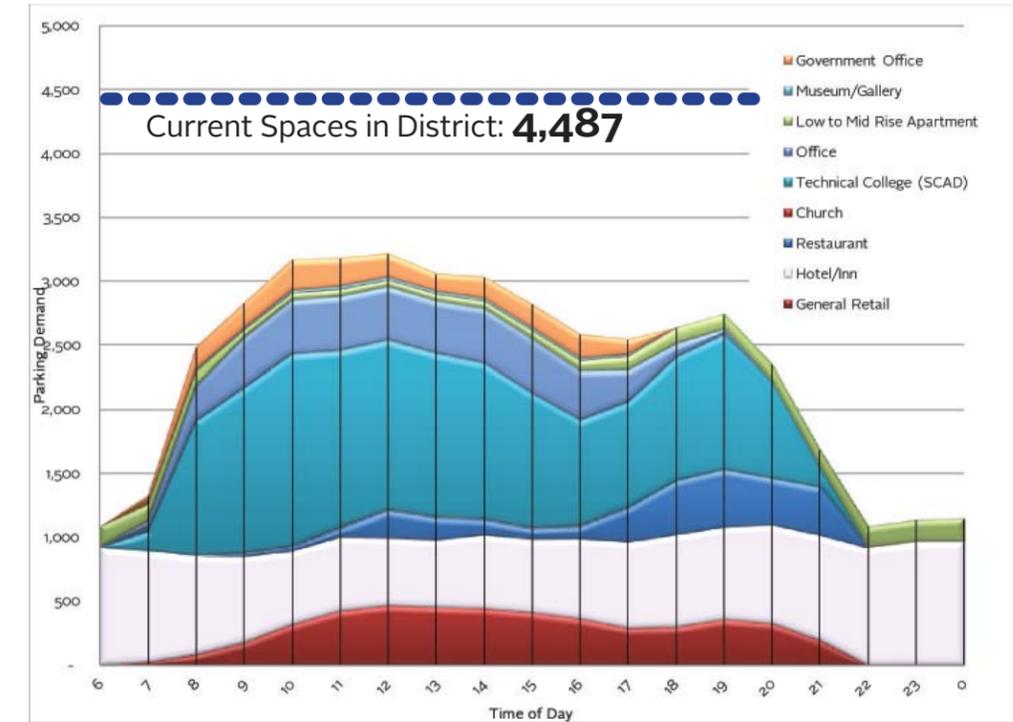


## EVENTS DISTRICT

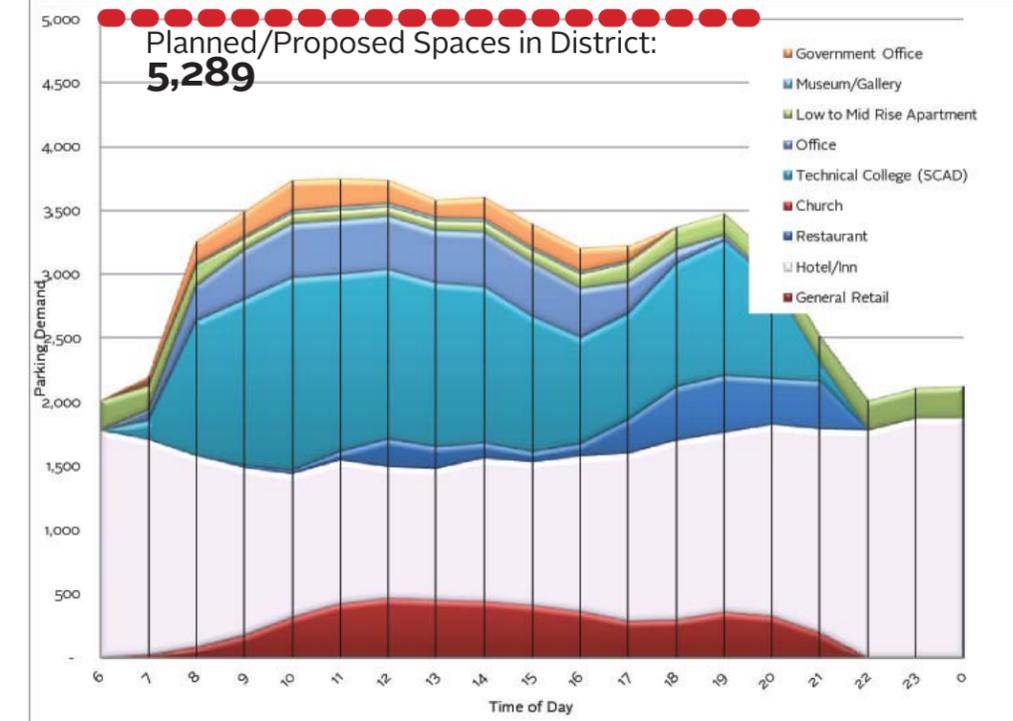
Most of the hotel rooms planned or forecast for the Parking Matters study area are west of Montgomery Street. While the addition of these hotels constitutes a major impact, they also propose to add a substantial

amount of parking to the district. This parking may not be readily available for sharing, but at a minimum may free up other spaces currently used in the district for other uses.

EVENTS DISTRICT: Supply and Expected Demand Today



EVENTS DISTRICT: Supply and Expected Demand With Forthcoming Development

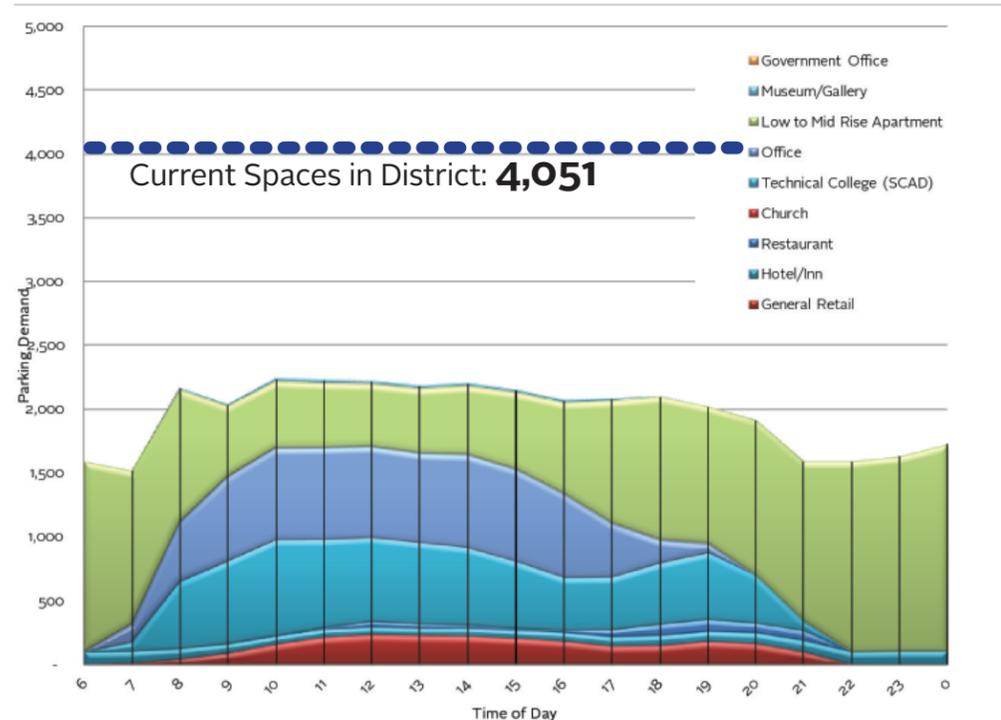


# SOUTHEAST DISTRICT

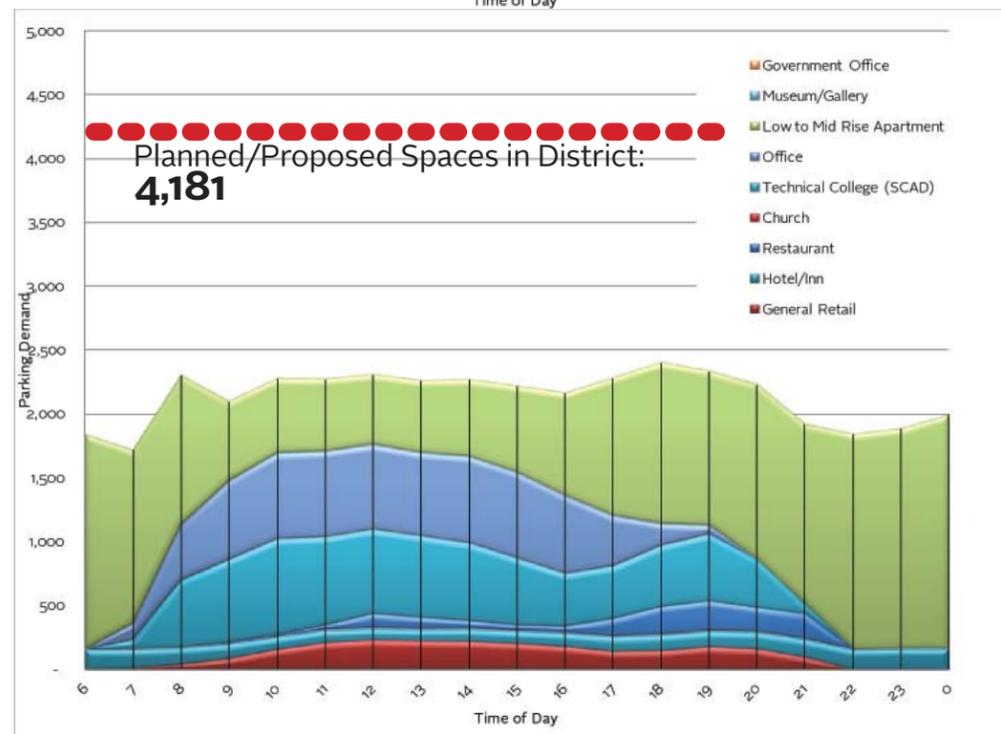
The multifamily uses proposed in the Southeast District are proposed to add parking spaces. This district does not currently see a level of demand that surpasses the number of spaces available, although

multifamily units bringing more than one vehicle may add to on-street parking activity in their immediate areas.

SOUTHEAST DISTRICT: Supply and Expected Demand Today



SOUTHEAST DISTRICT: Supply and Expected Demand With Forthcoming Development



# CONCLUSIONS

In most of the Parking Matters study area, demand from current land uses and forthcoming development fits within the available parking of different subarea districts. This is not to say that the study area does not experience spot shortages or challenges with availability—observation of parking utilization discussed in Technical Report 3.1 identified multiple locations where parking utilization exceeds 90 percent. However, comparing land use profiles and modeled demand to supply does point to potential to better utilize parking supply with low levels of use today. This is particularly true outside of the core historic district, and these parts of the study area are the locations of most new development activity in central Savannah.

The analysis in this technical report also suggests that parking requirements in much of the study area may be higher than actual use patterns suggest. In many areas, there is sufficient parking supply to meet the modeled demand, although much of it is in public parking spaces (garages and on-street locations) that, under current zoning, could not be counted toward parking requirements for development projects. Development projects on constrained sites may be able to take advantage of this supply if future modifications to the City's zoning ordinance allow greater flexibility in how parking requirements can be met.