Historic Town Center Parking Study Update (2019)

Presented to City Council on February 18, 2020

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Executive Summary

Every five years, the City of McKinney conducts a study of parking in its downtown area in order to ensure the City's vibrant downtown atmosphere is supported by its parking supply. This study was conducted over several weeks in June/July and October/November of 2019.

Previous studies involved confirmation of the supply of parking in the downtown study area and included analysis of *occupancy.* Occupancy identifies how full the parking lots and on-street spaces are, and the peak periods, the times when parking lots are at their fullest. This study also analyzes *turnover* of the on-street spaces around the Square, which describes how many individual vehicles were parked in those parking spaces and how long they remained in the same spaces. Each issue area is described below, along with its key findings.

Occupancy: Occupancy counts were taken at four intervals throughout the day (morning, mid-day, afternoon, and evening).[1] Since the results indicate summer had a higher total number of vehicles parked in downtown than the fall, this report focuses on the data from summer. Tables comparing the occupancy rates between summer and fall are provided in Appendix A.

Key Findings:

- Off-street private parking lots had the lowest peak occupancy throughout the study.
- On-street parking experiences the highest occupancy rates with those around the Square proper reaching a peak rate of 97 percent.
- Even at the busiest times, the occupancy rate for all public parking was just 59 percent, which means there were hundreds of parking spaces available to the public. At these peak times, available parking spaces are concentrated in the east and northern areas of downtown, mostly in the Chestnut Commons parking garage.

Turnover: In order to gain an understanding of how on-street parking is being utilized, a license plate survey was conducted on two days in June and two days in October. This provides a snapshot of how many unique individual vehicles were parked on the street and how long they were parked in those spaces.

Key Findings:

- Drivers parking on-street around the Square do not stay for an excessive length of time.
- The pilot valet service program was an efficient use of on-street parking spaces and makes good use of underutilized outlying parking lots.
- On-street parking occupancy is high around the Square, frequently reaching 100 percent.

Recommendations: Based on this information, the following recommendations are proposed to address the key findings. Additional information on the recommendations can be found starting on page 28.

Improve utilization of existing supply: Given that there is available parking supply at even the peak times, the most important thing the City can do is to connect drivers to the parking supply

[1] Summer occupancy counts occurred between June 22nd and 29th with an additional evening count on Saturday July 13th due to inclement weather. Fall occupancy counts occurred between October 19th and 26th with additional counts on November 1st and 7th to capture a full week due to inclement weather.

that is underutilized and improve the experience of walking to downtown destinations from those parking lots. This could be accomplished by increased promotion of existing programs like the Downtown Area Shuttle (DASH), which offers a comfortable and convenient way for drivers to reach their destinations. Further consideration should be given to instituting a long-term valet program, including where it should be located and the best way to administer a valet service. Both the DASH and valet service have the added benefit of using the existing parking supply that is outside the Square proper. In order to improve utilization of the existing supply, this recommendation includes modifying sign regulations in the downtown area in order to ensure that drivers can easily understand where they are able to park, when, and for how long.

Improve wayfinding to and within Downtown McKinney: Wayfinding, or the system of how people navigate a place using signs and other visual cues, has been identified as a citywide need and a wayfinding study will be conducted in 2020. This report recommends a focus on guiding drivers to the areas with the most available parking spaces through an updated system of physical signs, as well as exploring online outreach to reach drivers before they begin a trip to downtown. An update to the existing pedestrian-scale wayfinding would also ensure that people can comfortably navigate to and from parking lots around downtown and from place to place.

Introduction

Every five years since 2004, the City of McKinney has conducted a study of parking in the downtown area. This study provides a snapshot that describes how the parking is functioning in terms of supply and occupancy, provides a comparison to past parking studies, and offers additional analysis on parking-related policy questions.

For example, the most recent parking study (2014) resulted in updates to downtown parking signage, partnerships with private developers to construct new parking garages, and the "3 for Free" policy, which limits some on-street and off-street parking to 3 hours on weekdays.

The current parking study was conducted by taking vehicle counts in June/July and October/November of 2019 to account for any seasonal differences. This report:

- Provides an update to the supply of parking available in downtown. As a result of recent public and private development, the supply of parking in downtown has increased.
- Describes occupancy of on- and off-street parking in downtown McKinney. Occupancy rates are broken down by parking type (public off-street, parking garages, private off-street, and on-street) and geographic area.
- Analyzes turnover of on-street parking spaces on the four main streets surrounding the central downtown square (Kentucky Street, Tennessee Street, Virginia Street, and Louisiana Street). Turnover describes how long vehicles were parked in the most visible and in-demand parking spaces in the area.
- Recommends strategies to better utilize those areas identified as having available parking and to improve the experience of driving and parking in Downtown McKinney.

Definitions

Duration of stay: Length of time each vehicle remains in each parking space.

Parking Occupancy: The number of parking spaces occupied by vehicles as a proportion of the total available in the supply (expressed as a percentage).

Parking Supply: The number of parking spaces available to the general public (customers, employees, or other visitors).

Peak Occupancy: Peak occupancy refers to the highest occupancy rate that was observed.

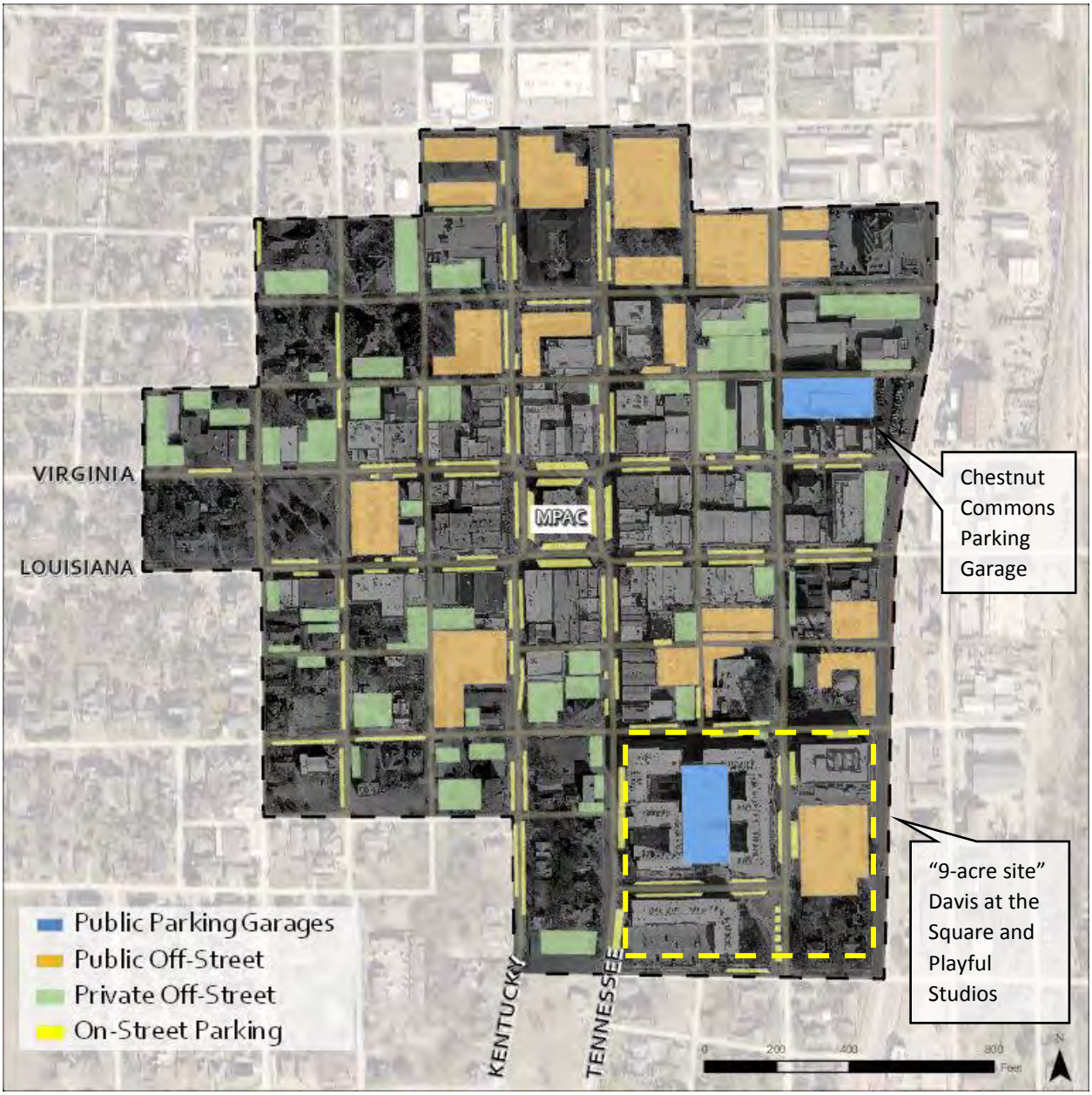
Private off-street parking: Parking spaces owned by private property owners, usually reserved for employees or customers, and provided in off-street parking lots.

Public off-street parking: Parking spaces owned by the City available to the public in off-street parking lots. Public parking garages are described in a separate category, although they meet this definition of public off-street parking.

Turnover: How many times a parking space is occupied by a new unique vehicle. Described in terms of unique vehicles and duration of stay.

Unique Vehicles: How many individual vehicles were recorded in each parking space.

***Figure 1**: Study Area*



Parking Supply

Approach

At the beginning of each parking study an assessment of the supply of parking downtown is conducted to show changes that have occurred during the previous five years. Any changes in parking supply in downtown were identified by comparing the parking spaces seen in the field with the most recently conducted parking study update (2014). A comparison of the parking supply in the study area over the past ten years is provided in Table 11 in the Appendix to this report. The downtown area parking supply has changed since 2014 in the following ways:

- Development of the Davis at the Square mixed-use project, and the office building located at 300 E. Davis Street, collectively known as the "9-acre site" prior to development (outlined in yellow in Figure 1) resulted in a net new 109 public parking spaces. Additionally, 125 new parking spaces at the Playful Studios office building property are available to the public in the evenings and on weekends.
- Construction of the Chestnut Commons parking garage, which opened to the public in February 2019 and provides 312 parking spaces. The garage is shown in blue in Figure 1 on page 4.
- Expansion of the study area to include two parking lots accessed from Kentucky Street, directly west of Hall Library. Previous studies omitted these two parking lots; however, they are included in this study because one is a publicly owned lot and the other serves as public parking through an agreement with the Methodist Church.
- New businesses provide off-street parking that did not exist prior to the 2014 Downtown Parking Study while also creating new demand for parking in the downtown area.

In addition to changes in the supply of parking available, there have been operational changes that affected the use of parking in downtown McKinney during the study period including:

- Creation of the Downtown Area Shuttle (or "DASH"), which provides on-demand, short-distance trips around the downtown area. This program has provided over 9,000 trips since 2017.
- During summer of 2019, the McKinney Performing Arts Center (MPAC) and Main Street began a trial valet parking program in order to improve the experience of parking for downtown McKinney visitors on Fridays and Saturdays. The program allowed drivers to park for any length of time for a $5.00 flat fee. Several downtown businesses provided validation. The valet service occupied on-street parking spaces and vehicles were then moved to off-street parking lots.

Parking Supply by Type

In 2014, the parking supply studied comprised approximately 2,576 parking spaces with similar proportions of each type of parking (public off-street, private off-street, and on-street). Since then, the parking supply in the study area has increased by 404 parking spaces to a total of 2,989 parking spaces. This is due to the increase in public off-street parking at the Chestnut and Davis at the Square parking garages. Table 1 shows the makeup of the parking available in downtown, with a description of each in the following section.

Table 1: *Parking Supply by Type*

Public Off-Street Parking	Public Parking Garages	Private Off-Street Parking	On-Street Parking	Total
1,081 spaces **(36%)**	508 spaces **(17%)**	799 spaces **(27%)**	601 spaces **(20%)**	**2,989 spaces (100%)**

The study area consists of four types of parking:

Public Off-Street Parking: These publicly available off-street parking spaces account for 1,081 parking spaces (53 percent of the total supply).[2]

Public Parking Garages: This category is made up of the publicly available parking at Davis at the Square (196 parking spaces) and the Chestnut Commons public parking garage (312 parking spaces). Both structures were constructed since the 2014 parking study and provide a combined total of 508 parking spaces, which make up 17 percent of the total parking supply.

Private Off-Street Parking: This private parking is located on privately owned land and is available for public use. Private off-street parking is included in the downtown parking study because it is available for parking by customers or employees of downtown businesses; however, these parking lots may have posted signs limiting parking to customers only or may limit the length of time a vehicle can be parked there. Private parking makes up 27 percent of the total parking supply, with 799 spaces available.

On-Street Parking: These publicly available parking spaces are located curbside and are generally divided by pavement markings and accompanied by signage with information on limitations to length of stay. For the purposes of this study, on-street loading spaces were included in the parking supply because they are available to customers for short stays. These 601 parking spaces make up 20 percent of the total supply.

Parking Supply by Ring

One of the most important ways that people decide where to park is the distance to their destination(s), especially when the price is the same for all possible options. The study area is divided into three rings based on distance from the Square/MPAC, with Ring 1 at the center, Ring 2 in the middle, and Ring 3 at the outer edge.

Ring 1: This ring is generally developed with older buildings and relies primarily on on-street parking. Ring 1 provides just 8.5 percent of the overall parking supply in the study area.

Ring 2: Ring 2 begins two blocks from the Square and includes 27 parking lots, 10 of which are public. Ring 2 makes up 29.4 percent of the overall parking supply in downtown McKinney.

Ring 3: Ring 3 provides 62 percent of the parking spaces in the study area, with a greater total supply than both Rings 1 and 2 combined, in large part due to a high concentration of off-street parking lots and both parking garages. The furthest northern boundary of the outer ring is approximately 4 blocks or 1,000 feet from the Square.[3]

[2] Note: The parking lot that serves the Playful Studios office building located at 300 E. Davis Street is classified as public off-street parking because it is available to the public during evenings and weekends. However, it is limited to employee parking between 8 AM and 5 PM on weekdays.

[3] As noted above, the parking lot that serves the Playful office building located at 300 E. Davis Street is classified as public off-street parking because it is available during evening and weekend hours. However, these 125 parking spaces may overstate the amount of publicly available off-street parking in Ring 3 during daytime weekday hours.

Figure 2: *Study Area by Rings*

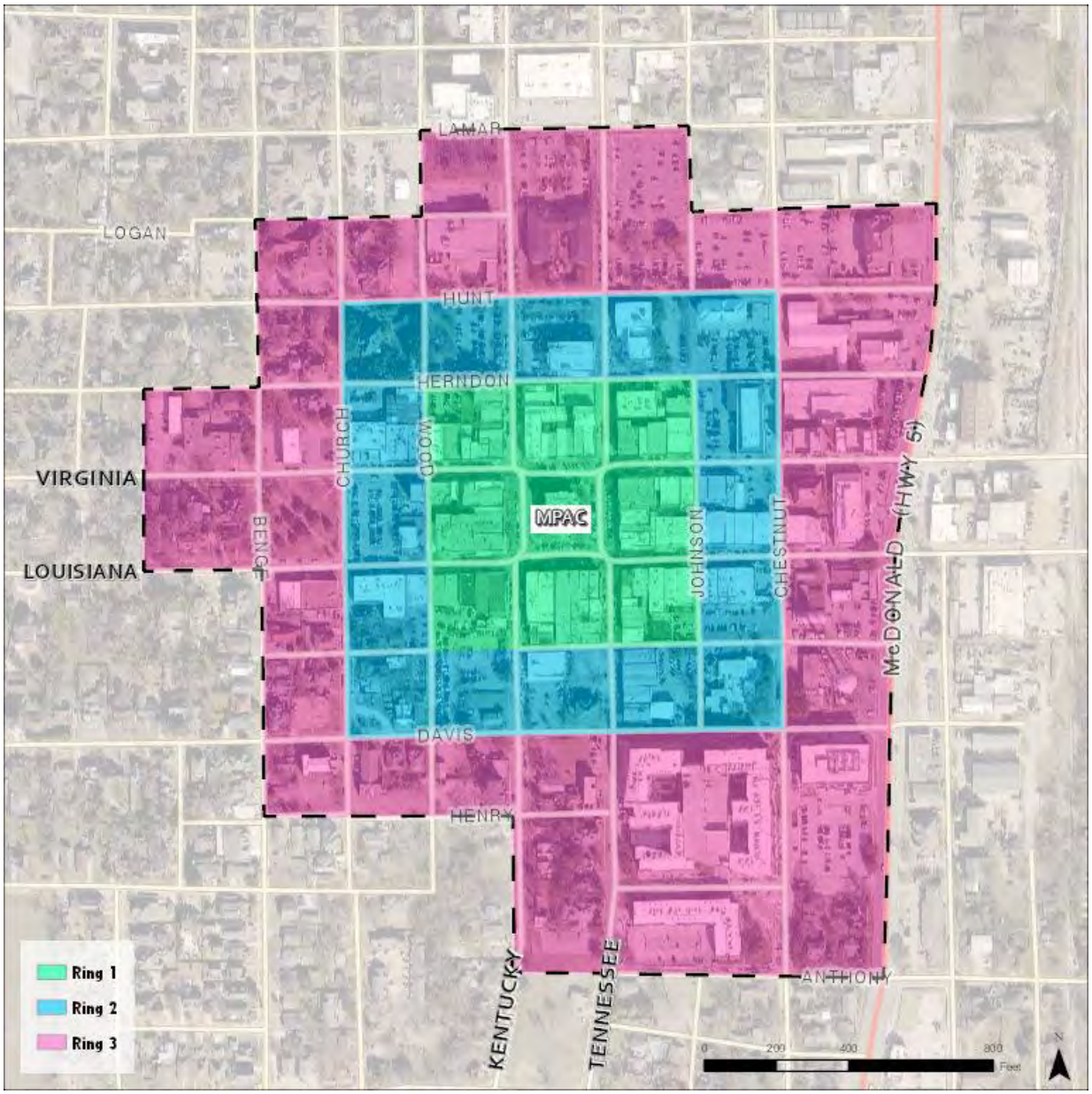


Table 2: *Parking Supply by Rings*

	Public Parking Garages	Public Off-Street Parking	Private Off-Street Parking	On-Street Parking	Total
Ring 1	0	0	57	201	**258 (9%)**
Ring 2	0	443	324	110	**877 (29%)**
Ring 3	508	638	418	290	**1,854 (62%)**
Total	**508 (17%)**	**1,081 (36%)**	**799 (27%)**	**601 (20%)**	**2,989**

Parking Supply by Zone

Zone A: Located in the northwest of the study area, Zone A has the greatest number of both private off-street parking and on-street parking. This zone has the highest number of on-street parking spaces, with a total of 210, and a total of 842 parking spaces (28 percent of the total parking supply).

Zone B: Zone B is the northeast area of the study area and has the most parking spaces of the four zones, with a total of 962 parking spaces (32 percent of the total supply). This zone also has the most public off-street parking spaces, with 651 of these spaces (39 percent of the total public off-street supply). The addition of the Chestnut garage contributed 312 public parking spaces to this zone.

Zone C: Zone C, in the southwest portion of the study area, provides 466 parking spaces (16 percent) of the total supply in the study area, with a higher proportion of those spaces made up by private off-street parking spaces (48 percent) than that of other zones.

Zone D: The southeast corner of the study area, Zone D, has the second-highest number of public off-street parking spaces, with a total of 476 spaces, bolstered by the addition of Davis at the Square. This zone has a total of 710 parking spaces (24 percent of the overall total) with 28 percent of the total public parking in the study area (including public off-street parking and on-street spaces). Davis at the Square's 196 parking spaces make up 27.6 of the total supply in Zone D.[4]

Figure 3: *Drone Photo, Zone D*
Playful Studios Office Building (left) and Davis at the Square (right), looking south

[4] As noted above, the parking lot that serves the Playful Studios office building located at 300 E. Davis Street is classified as public off-street parking because it is available during evening and weekend hours. However, these 125 parking spaces may overstate the amount of publicly available off-street parking in Zone D during daytime weekday hours.

Figure 4: *Study Area by Zones*

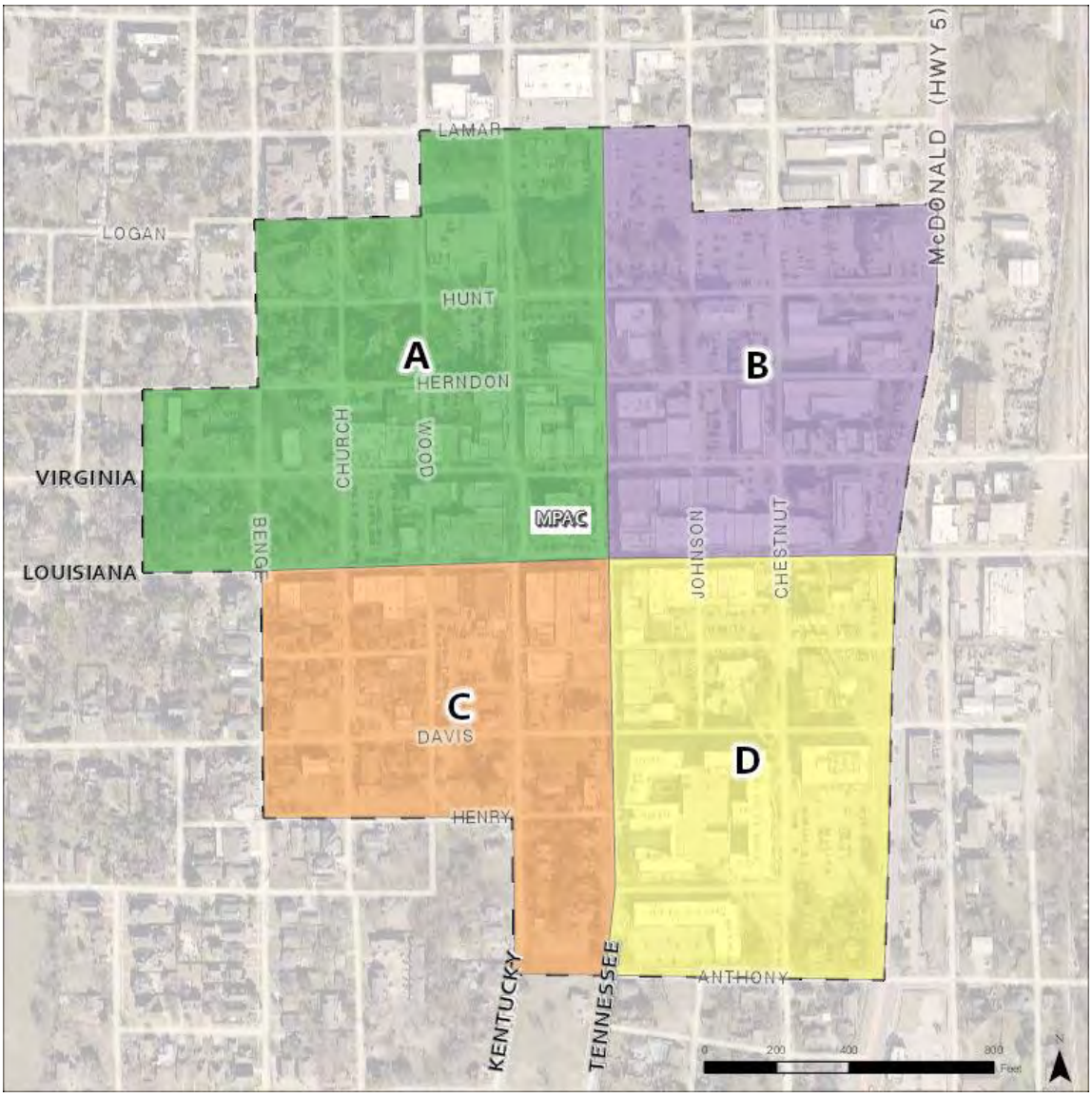


Table 3: *Parking Supply by Zone*

Zone	Parking Garages	Public Off-Street Parking	Private Off-Street Parking	On-Street Parking	Total
A	0	350	291	210	**851 (28%)**
B	312	339	220	91	**962 (32%)**
C	0	112	224	130	**466 (16%)**
D	196	280	64	170	**710 (24%)**
Total	**508 (17%)**	**1,081 (36%)**	**799 (27%)**	**601 (20%)**	**2,989**

Parking Occupancy

Approach

In keeping with past practice, this study analyzes parking occupancy using observations taken over a week-long period. Parking occupancy counts occurred at four intervals throughout the day (morning, mid-day, afternoon, and evening) across more than a week, which included observations on two Saturday evenings and Tuesday through Friday.[5] Occupancy counts were taken both in the summer (in June-July) and in the fall (in October-November) to provide a sense of the seasonal differences between the two periods.

During the summer occupancy counts, occupied parking spaces were counted using drone photography from multiple locations throughout downtown, as well as by driving the interior of parking structures where the drone could not safely fly. In addition, on-the-ground photos and counts supplemented the drone photography to capture parking areas with limited views. In the fall, counts were conducted in real time using a Google form. This report focuses on the summer peak periods because the summer data showed a greater number of vehicles parked in downtown in comparison to the fall and there were not substantial variations in peak occupancy rates between them. In terms of downtown special events, the summer counts included a Saturday when Classics on the Square was taking place, as well as the downtown farmers' and an evening of a Second Saturday. The fall counts included the evening of the McKinney Wine & Music Fest.

Figure 5: *Drone Photo, Zones A and C*

[5] Summer occupancy counts were taken the week of June 22nd and June 29th. Due to a rainstorm on the evening of Saturday, June 29th, an additional Saturday evening count was taken on July 13th and is combined with the June 29th daytime counts in order to capture a full Saturday. Fall occupancy counts were taken the week of October 19th through October 26th. Due to rain, additional occupancy counts were taken on November 1st and 7th.

Parking Occupancy

Table 4 identifies each parking type and the day and time at which it reached its peak occupancy (the time period when the most vehicles were parked in that type of parking). As shown, public off-street parking reached a peak occupancy of 64 percent during three different afternoon counts, as well as during the Saturday mid-day count. Private off-street parking occupancy reached a weekday peak of 47 percent during the Friday mid-day period and its Saturday peak occurred in the evening with 35 percent occupancy. On-street parking reached a peak rate of 79 percent on Thursday evening and 80 percent on Saturday evening.

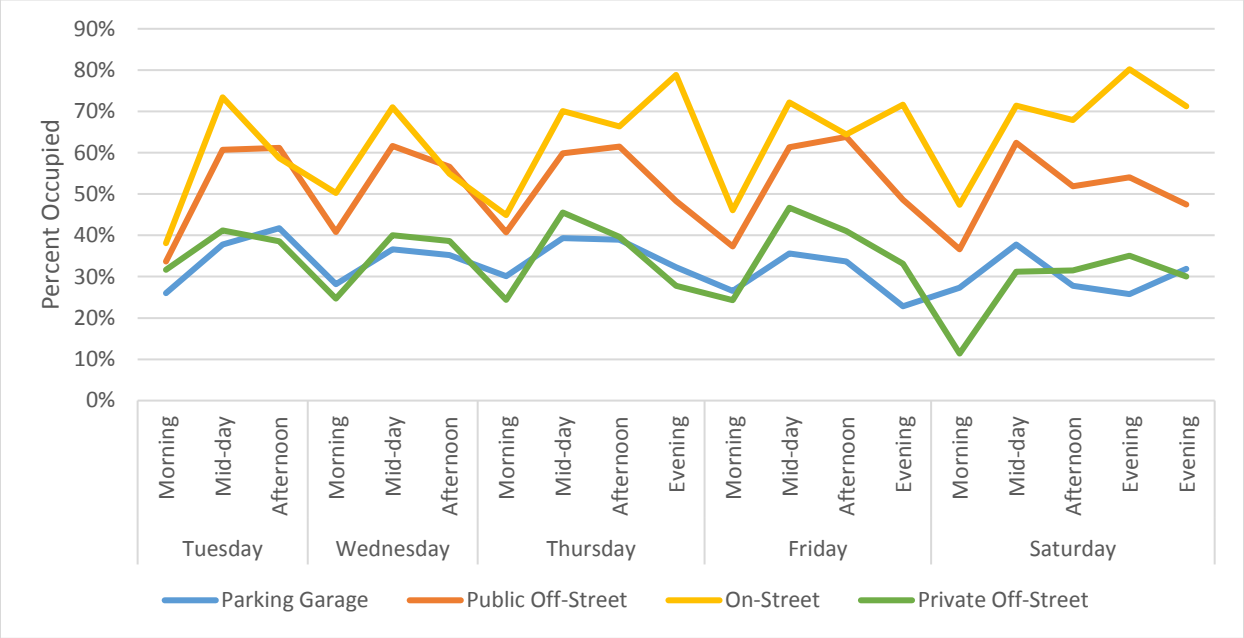
The Overall Parking Occupancy rate identifies the peak time at which the overall supply of parking in downtown is most constrained, considering all types of parking available to the public, which occurred on Friday at mid-day during the week. At that time, 55 percent of all parking in the downtown area was occupied. This peak aligns with the peak time for private off-street parking and was the third-highest occupancy rate observed for public off-street parking at 61 percent occupancy.

Table 4: *Peak Occupancy Rates by Type*

Time	Public Parking Garages	Public Off-Street Parking	Private Off-Street Parking	On-Street Parking	Overall Parking Occupancy
Weekday	42%	64%	47%	79%	**55%**
Saturday	38%	62%	35%	80%	**52%**
Note: Parking occupancy counts took place on June 22, June 25-29, and July 13, 2019 at the following times: 8-10 AM (Morning), 11 AM - 1 PM (Mid-day), 3-5 PM (Afternoon), and 6-8 PM (Evening).					

Figure 6 shows how occupancy for each type of parking rises or falls throughout the day and the week. All four parking types have lower occupancy rates in the mornings, with increases in the mid-day and afternoon periods. The on-street parking type consistently has the highest occupancy rate, due to its lower amount of supply, high visibility, and convenient location. In the occupancy charts to follow, the two Saturday evening counts are grouped at the right side of the chart for easier comparison, although they were taken on different weeks.

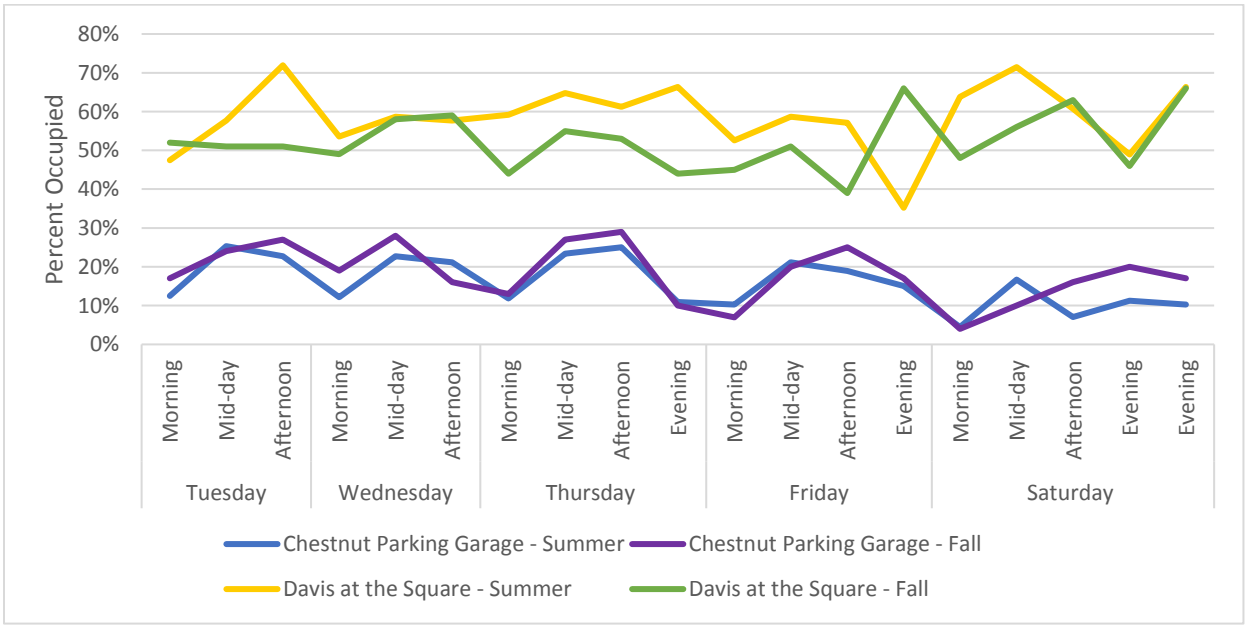
Figure 6: *Occupancy by Type*



Occupancy of New Parking Structures

As noted in the introduction to this report, two new parking structures offer over 500 parking spaces for public use. Davis at the Square and the Chestnut Commons parking structures provide free parking to the public; there is no time limit for length of stay in these parking garages, regardless of the day of the week or time of day. The following occupancy results focus specifically on the use of these structures.

Figure 7: *Parking Garage Occupancy, Summer and Fall*



Davis at the Square: This parking garage provides 196 parking spaces for public use. As shown in Figure 7, the parking structure at Davis at the Square is consistently used throughout the week and experiences few dips in occupancy. The lowest occupancy rate was observed during the Friday evening count, with 35 percent occupancy while the majority of the observations showed it consistently above 50 percent, reaching a peak of 72 percent occupancy on Tuesday afternoon in the summer.

Chestnut Commons Parking Garage: This parking garage opened to the public in February of 2019 and provides 312 parking spaces and is less utilized by the public as compared to Davis at the Square. In the summer, the peak occupancy rate was 25 percent, which occurred during the Tuesday mid-day period. At that time, just 79 parking spaces were occupied, leaving 233 parking spaces available. In the fall, this garage reached a peak of 29 percent occupied, with a remaining 221 spaces available on Thursday afternoon.

Figure 8: *Chestnut Commons Parking Garage*

Occupancy by Ring

As shown in Figure 9 on the following page, Rings 1 and 2 generally follow the same patterns as the overall parking supply, with dips in the morning and peaks at mid-day. Due to its lower amount of available parking and proximity to destinations on the Square proper, Ring 1 has the highest occupancy rate for all the counts that occurred. Ring 3, with its greater supply and longer walking distance to the Square, reliably has the lowest parking occupancy of the three rings.

Table 5 on the following page provides the peak rates observed for each parking type by weekday and on Saturday. Ring 1 has no public off-street parking and experiences higher peaks in its on-street and private off-street parking than the other two rings, with peak rates of 97 percent and 80 percent, respectively. The occupancy rates in Ring 3 are the lowest of the three, likely due to the greater walking distance to the Square and the much higher supply of parking available. Two peak rates illustrate the relationship between the distance to the Square and peak occupancy: On-Street parking peaks at 87 percent in Ring 2, dropping to 67 percent in Ring 3. Second, public off-street parking in Ring 2 was 91 percent, and drops to a peak of just 44 percent in Ring 3.

Figure 9: *Occupancy by Ring*

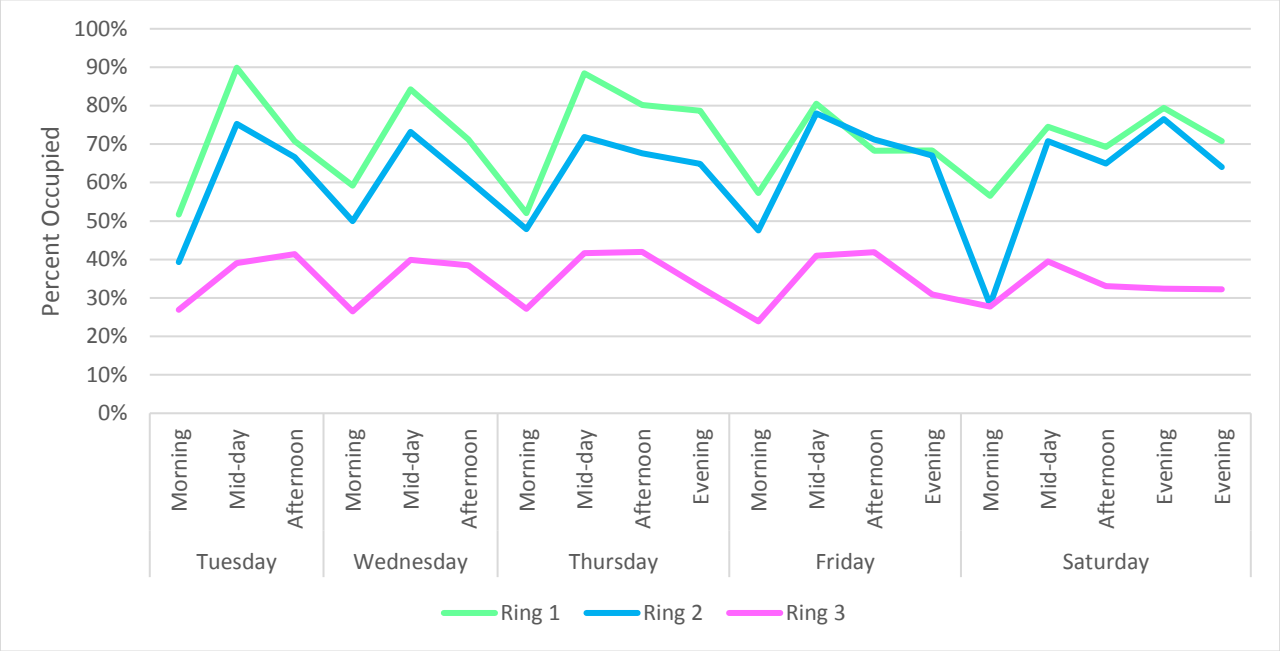


Table 5: *Peak Occupancy Rates by Ring*

	Public Parking Garages		Public Off-Street Parking		Private Off-Street Parking		On-Street Parking	
Ring	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday
Ring 1	N/A		N/A		80%	33%	97%	95%
Ring 2	N/A		91%	92%	58%	50%	87%	91%
Ring 3	42%	38%	49%	44%	36%	30%	67%	67%
Note: Parking occupancy counts took place on June 22, June 25-29, and July 13, 2019 at the following times: 8-10 AM (Morning), 11 AM - 1 PM (Mid-day), 3-5 PM (Afternoon), and 6-8 PM (Evening).								

Occupancy by Zone

Figure 10 shows the occupancy rate across the study period by zone. Each zone experiences a dip in occupancy in the morning. In part due to its higher supply, Zone B experiences a lower occupancy rate than the other three zones throughout the week and days. Zone A exceeds the occupancy rate of the other zones only on one occasion, during the Thursday mid-day period. Zones C and D have a consistently higher occupancy rate than Zones A and B. This may be due to a comparably lower supply combined with several destinations located in the southern portion of the downtown area (such as Chestnut Square and restaurants and shops). On Saturday morning, Zone D breaks from the usual pattern and experiences its highest occupancy, exceeding that of the other three zones, likely as a result of the Farmers' Market,

which takes place in Zone D at that time. Again, the two Saturday evening observations are grouped together at the right side of the chart.

Figure 10: *Occupancy by Zone*

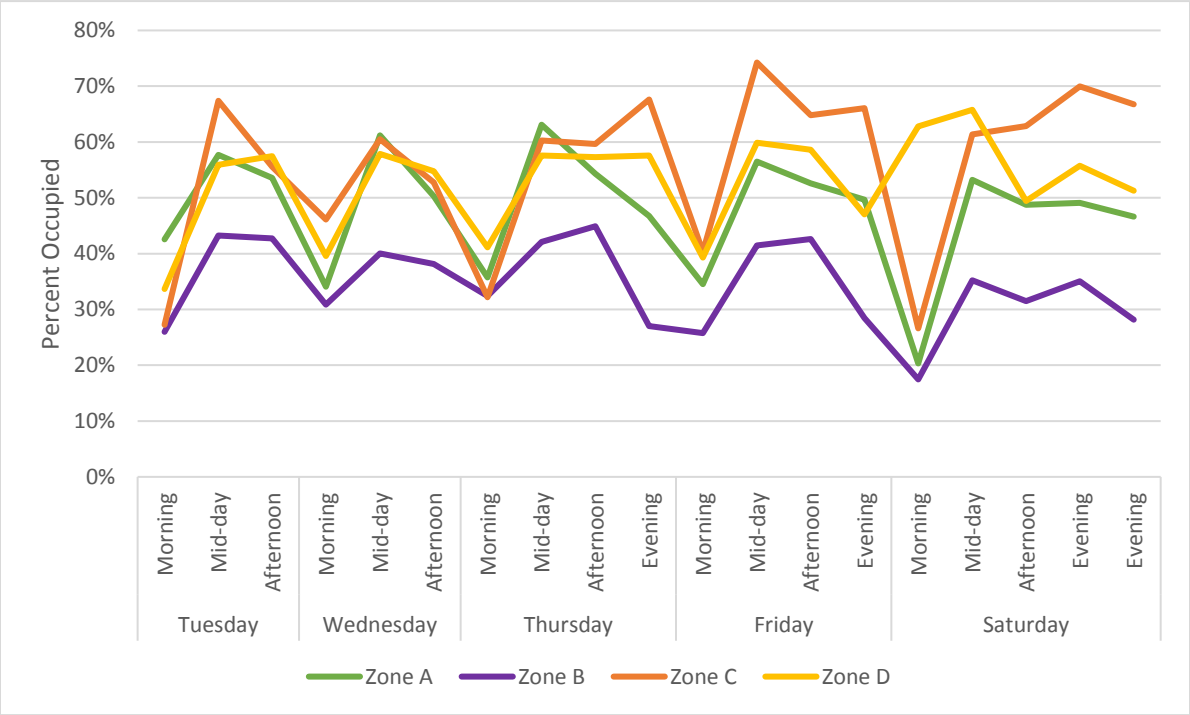


Table 6 shows the peak occupancy by parking type in each zone. Zones A and B have similar occupancy rates for the different types. The Chestnut Commons parking garage may be the primary cause for the lower general occupancy rate for Zone B due to a high number of vacant parking spaces observed throughout the study. Zone C experienced a peak occupancy of public off-street parking at 102 percent when parking Lot 1 was observed to be over capacity. Lot 1 is located south of Louisiana between Kentucky and Tennessee. Further, public off-street parking in Zone C reached 100 percent occupancy at five other times during the study. It is also important to note that although the public off-street and on-street parking in Zone C experiences high occupancy, there is capacity available in the private parking in that area (though it is not obviously available for use by any member of the public). Zone D, on the other hand, has relatively low occupancy rates for all types of parking, as compared with the other zones.

Table 6: *Peak Occupancy Rates by Zone*

	Public Parking Garages		Public Off-Street Parking		Private Off-Street Parking		On-Street Parking	
Zone	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday
A	N/A		68%	67%	47%	35%	86%	79%
B	29%	17%	55%	47%	46%	38%	88%	87%
C	N/A		102%	100%	53%	41%	93%	94%
D	72%	71%	62%*	73%	64%	61%	69%	71%

Note: Parking occupancy counts took place on June 22, June 25-29, and July 13, 2019 at the following times: 8-10 AM (Morning), 11 AM - 1 PM (Mid-day), 3-5 PM (Afternoon), and 6-8 PM (Evening).

* The peak period identified in Zone D for public off-street parking occurs at Wednesday Mid-Day, which may be affected by employee parking in the Playful Studios lot, which is not available at that time. The weekday peak time for public off-street parking when the lot is open to the public is Thursday evening with a 50% occupancy rate.

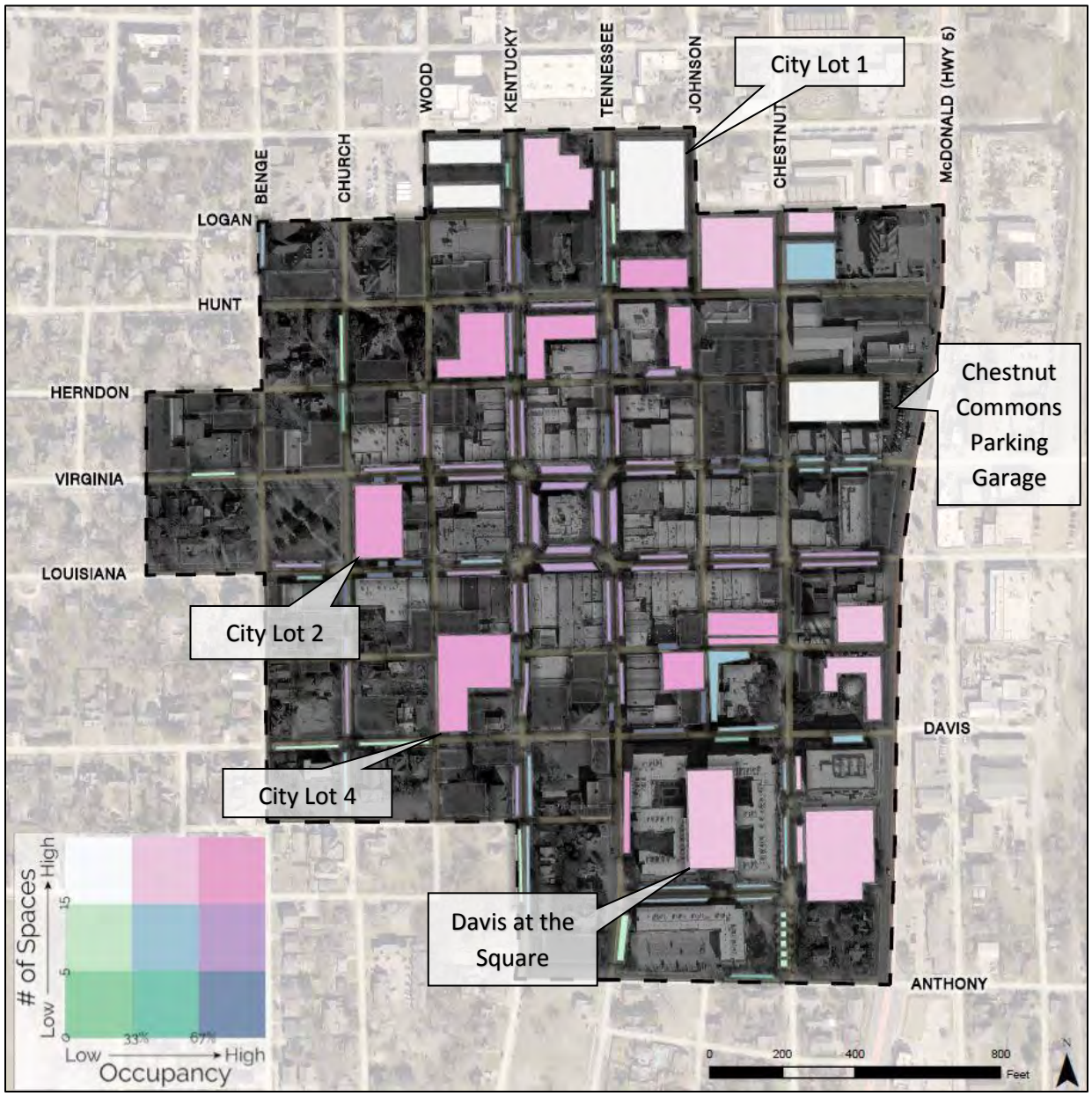
Parking Occupancy at Peak Times

As discussed in the preceding sections, parking supply and occupancy are not evenly distributed throughout the downtown. Due to demand for centrally located, on-street parking, a large number of areas with fewer than ten parking spaces are consistently full, while a small number of large parking areas are largely vacant. In Figure 11, parking areas are categorized by both number of parking spaces and their occupancy rates at mid-day. In this map, private parking areas have been excluded to focus attention on the publicly available parking spaces.

The dark pink category represents large parking areas that were consistently full. This color applies to City Lot 2 (at Church between Louisiana and Virginia), City Lot 3, and City Lot 4. All of these are within two blocks of the Square proper. The purple category depicts small lots with very high occupancy rates, a category made up mostly by on-street parking. These categories show us where parking is being effectively utilized.

Conversely, the white category shows us the large parking lots with many available spaces at peak times. This white category includes large lots at the north end of downtown, particularly City Lot 1, and the Chestnut Commons parking garage, and represents the areas of greatest underutilization of existing parking. Private parking lots are not shown in Figure 11, but they typically fall into the light and dark green categories due to their low occupancy rates and because they generally contain lower numbers of spaces. Maps similar to Figure 11 are provided in Appendix A show the distribution of all parking lots in downtown, as well as a separate map of private parking lots alone.

Figure 11: *Mid-Day Parking Occupancy by Lot Size (Public Parking Only)*



On-Street Turnover

Another important dimension to how parking functions is *turnover*, which describes how long individual vehicles are parked in individual spaces. This can reveal how many unique vehicles are being served by a limited number of parking spaces. On-street parking spaces are of interest because these spaces are both the most visible parking spaces in downtown and they are also limited in availability.

Approach

A license plate survey was conducted of the 282 total on-street parking spaces on Kentucky Street, Tennessee Street, Virginia Street, and Louisiana Street within Rings 1 and 2 (see Figure 2 on page 7 for a map of the Study Area Rings). Hourly surveys were conducted on Thursdays and Saturdays between 10 AM and 6 PM in the summer and fall. These results focus on the summer results because more unique vehicles were recorded during the summer period. All four streets are covered by free 3-hour parking from 8 AM to 5 PM on weekdays and have no time limit on Saturdays.

Duration of Stay

With a limited number of parking spaces in this central location, only so many vehicles can park on the street if the rate of turnover is too low. For example, if the average length of time a driver is parked in a given space is four hours, then just two vehicles could be expected to utilize that parking space over an eight-hour period. Conversely, if the duration of stay is low with a higher rate of turnover, then more unique vehicles could use a given parking space. The latter appears to be the case in downtown McKinney:

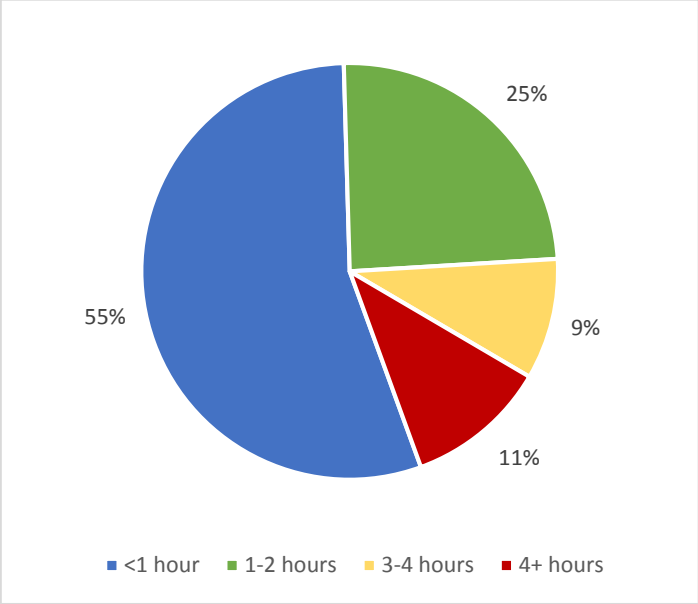
> On Thursday, the average duration of stay was 1.95 hours for all blocks in the study area but two blocks on Virginia Street. At this turnover rate, the 282 on-street parking spaces were able to provide parking for 1,060 unique vehicles over the course of the day. On Saturday, the average duration of stay increased on almost all of the street segments, with an overall average duration of 2.54 hours. This duration of stay resulted in a total of 1,000 unique vehicles utilizing the on-street parking in the study area over the course of the day. The longer weekend duration of stay may be attributed to the weekend exemption from the 3-hour parking limit.

Table 7: *Parking Turnover - Unique Vehicles and Duration of Stay (Summer)*

	Total Parking Spaces	**Thursday**		**Saturday**	
		Unique Vehicles Recorded	**Average Duration of Stay (hours)**	**Unique Vehicles Recorded**	**Average Duration of Stay (hours)**
Kentucky Street	70	236	1.79	218	2.71
Tennessee Street	68	257	1.92	245	2.51
Virginia Street	70	255	2.15	273	2.56
Louisiana Street	74	312	1.84	264	2.40
Total	**282**	**1,060**	**1.95**	**1,000**	**2.54**

A second license plate survey was taken in the fall and found similar results, despite a heavy rainstorm on the Thursday of the study. For comparison: In October, there were 975 unique vehicles with an average duration of stay of 2.12 hours and on Saturday there were 983 unique vehicles with an average duration of stay of 2.55 hours. Additional supplemental turnover information for October is provided in Appendix B of this report.

Figure 12: *Duration of Stay (Saturday, Summer)*



As shown in Figure 12, on Saturday in the summer, the majority of vehicles were parked for 1 hour or less (55 percent); 25 percent were observed in the same spaces for 2 hours, only 11 percent were observed for greater than four hours. Only 2 percent of vehicles were parked in the same parking space for a full 8 hours (21 total vehicles). The duration of stay was similar on Thursday: 57 percent stayed for 1 hour or less; 26 percent stayed for 1-2 hours; 10 percent stayed for 3-4 hours; and 7 percent were parked for four hours or more.

Because these averages provide only a general sense of the dynamics of turnover, the diagrams in Figures 13 and Figure 14 depict the unique vehicles observed on Saturday of the study. The colors of the boxes correspond to the number of hours they were observed parked in the same spaces on that day. There is one white box with a diagonal line through it, which represents the only parking space observed that was empty for the entire day (at the south end of Kentucky Street).

Figure 13: *Turnover Diagram – Virginia Street and Louisiana Street (Saturday, Summer)*

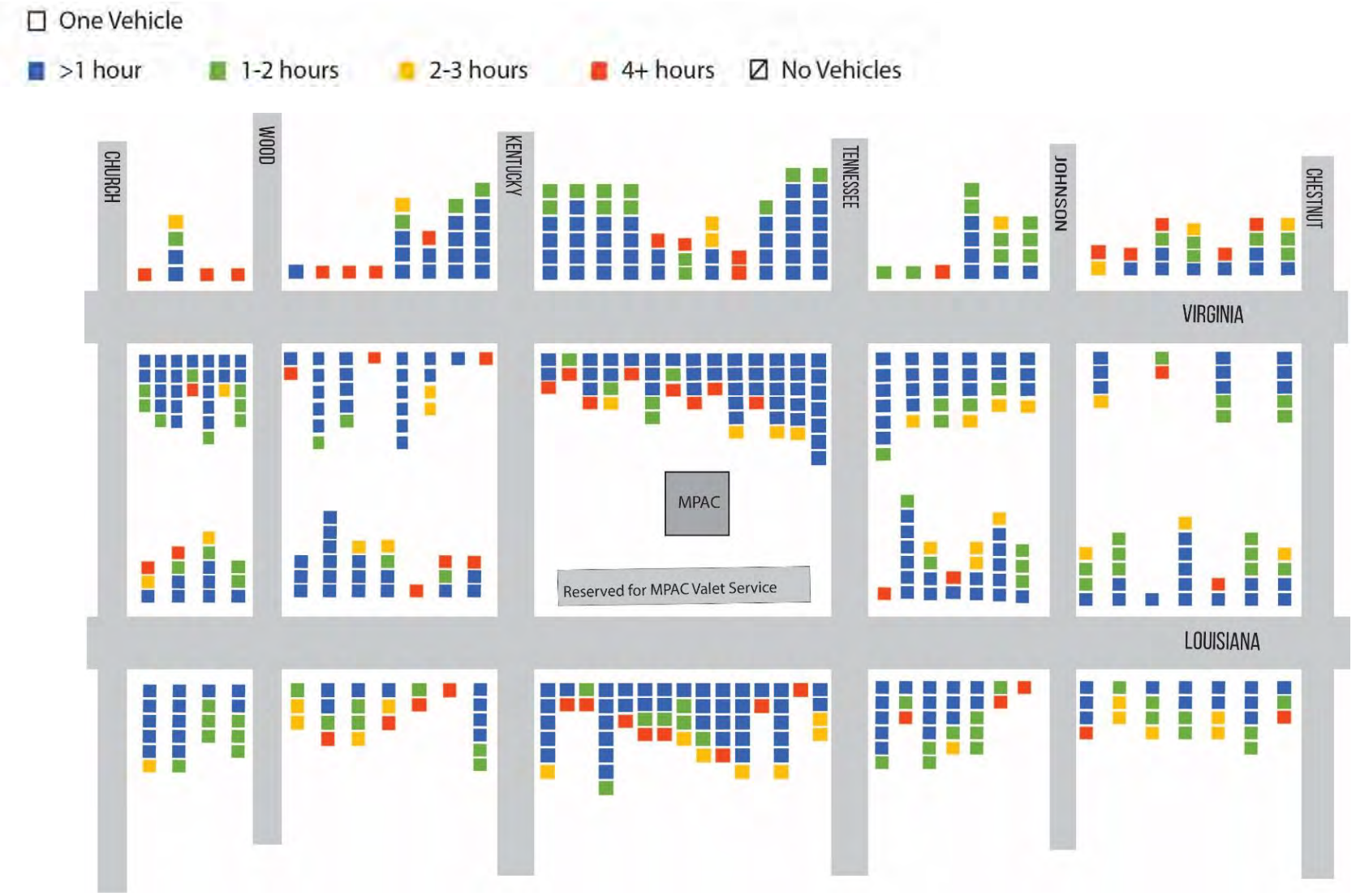
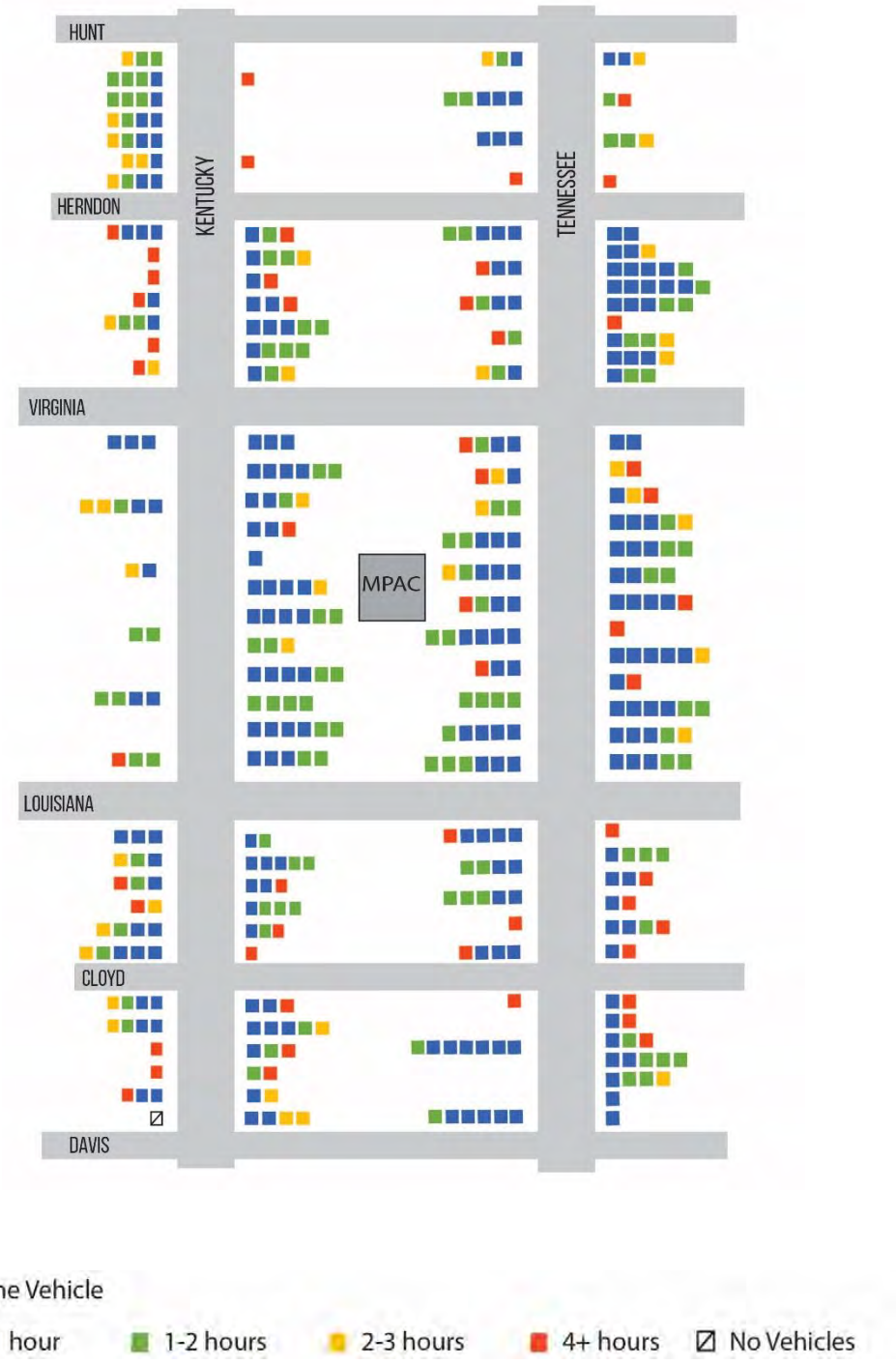


Figure 14: *Turnover Diagram – Kentucky Street and Tennessee Street (Saturday, Summer)*



Valet Parking Pilot Program

The pilot program tested by MPAC and Main Street this summer offers a useful point of comparison. The valet service was located on the north side of Louisiana Street adjacent to the McKinney Performing Arts Center. The valet service served 145 vehicles on the Saturday that the turnover study was undertaken (June 29th).[6] The valet stand served approximately 11.6 vehicles per hour (over a 12.5-hour period). This far exceeds the average number of vehicles per hour for the other blocks on the Square proper, as shown on Table 8. For comparison, on Saturday in the fall, the same block where the valet stand was located on Louisiana Street served a total of 41 unique vehicles, or 5.1 average vehicles per hour.

Table 8: *Average Vehicles per Hour on Square Proper*

		Thursday		Saturday	
Street	**Block Location (Total Spaces Per Block)**	**Total Unique Vehicles**	**Average Vehicles per Hour**	**Total Unique Vehicles**	**Average Vehicles per Hour**
Kentucky Street	Adjacent to MPAC (12)	49	6.1	59	7.4
	Across from MPAC (6)	21	2.6	20	2.5
Tennessee Street	Adjacent to MPAC (11)	47	5.9	51	6.4
	Across from MPAC (13)	46	5.8	54	6.8
Virginia Street	Adjacent to MPAC (13)	53	6.6	56	7.0
	Across from MPAC (11)	49	6.1	59	7.4
Louisiana Street	Adjacent to MPAC **Valet Location** (11)	42	5.25	145	11.6
	Across from MPAC (13)	62	7.75	53	6.6

Block-by-Block Occupancy

When considering whether on-street parking is performing well, the first step is to establish an ideal occupancy rate. Current industry best practices suggest that the ideal occupancy rate is around 85 percent on each block for on-street parking. This ensures that one or two spaces would be available on a block at any time and that the price is not so high that drivers feel compelled to circle downtown to find a free or cheaper parking space. The "one or two spaces available" rule is intended to reflect how likely a driver is to find a parking space on any given block and to offer an element of convenience to the drivers willing to pay to park. Since downtown McKinney offers free parking on-street and in public off-street parking lots

[6] Hourly averages are provided because the valet program operated later than the 6 PM end time for the turnover study.

and garages, this offers a useful baseline measurement for how the on-street parking spaces function on an hourly, block-by-block basis and when all publicly accessible parking is priced at the same low rate.

The images in Figure 15 and Figure 16 illustrate the block-by-block occupancy rate on an hourly basis during Saturday in summer. In order to show the occupancy rates on each block over the course of the day, the bars were stacked from bottom to top representing each hour, starting with 10 AM and moving up to 5 PM. The color-coding of each bar is based on the occupancy rate, using dark blue to show occupancy less than 60 percent, lighter blue to show between 60 and 70 percent, light green to show between 70 and 80 percent, and darker green to show 80 to 90 percent, the goal rate. Finally, red shows occupancy between 90 and 100 percent. Figure 15 omits the north side of Louisiana, which was reserved for the MPAC valet program at this time. The tables showing the exact occupancy rate for each block are provided in the Appendix of this report. For the fall observations, which closely match the June observations, occupancy rate tables are provided in the appendix.

Figure 15: *Hourly Occupancy on Virginia and Louisiana (Saturday, Summer)*

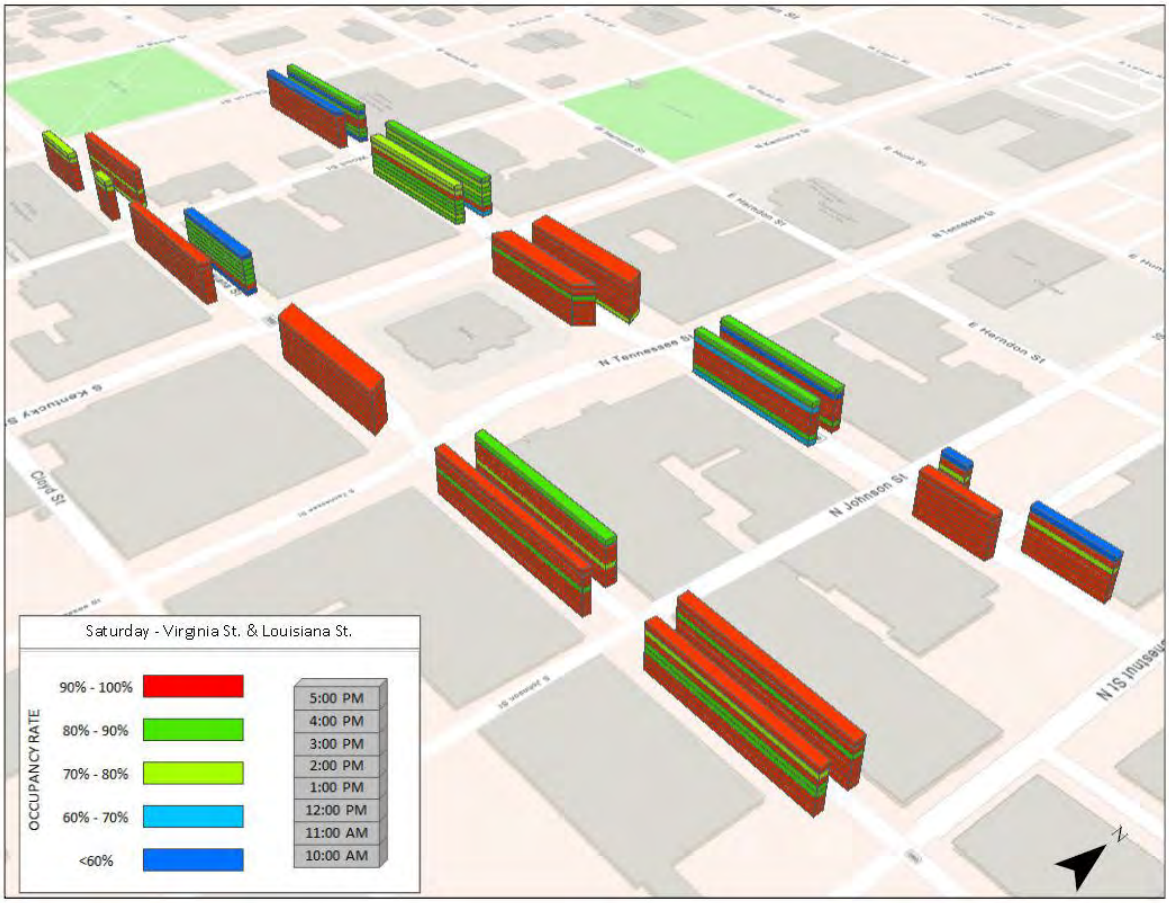
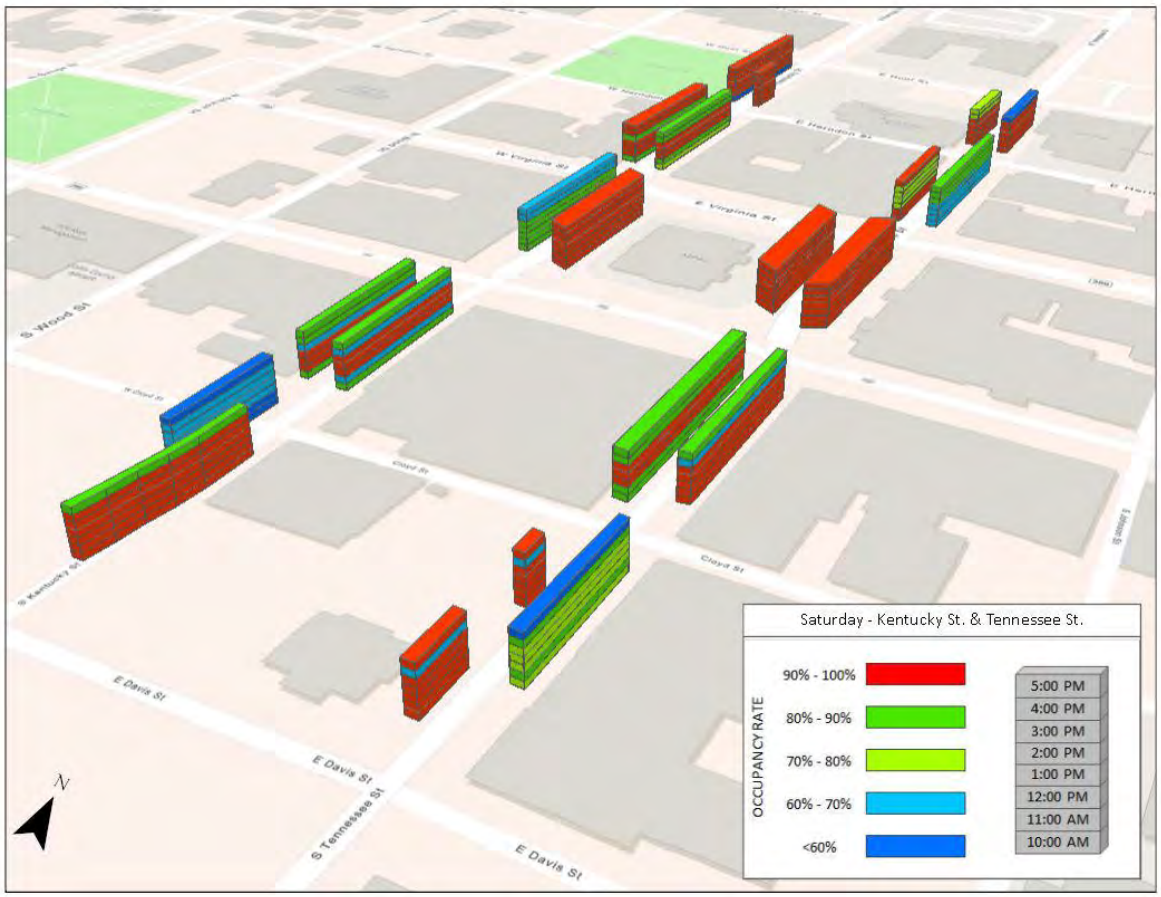


Figure 16: *Hourly Occupancy on Kentucky and Tennessee (Saturday, Summer)*



These maps show a high frequency of blocks with an occupancy rate above 90 percent (shaded in red) across all time periods and all the streets shown. Using the 85 percent as a guide indicates that the price may be too low, given how frequently these on-street spaces reach an occupancy of 100 percent. Given the high frequency of 100 percent occupancy on the blocks shown above throughout the day, and consistently at the mid-day period, a driver would find it difficult to park on-street immediately adjacent to the Square. Given that 58 percent of the hourly observations by block showed an occupancy rate of 100 percent on Saturday in the summer, it may be appropriate to consider a pricing strategy to manage on-street parking that leaves one or two spaces available on each block. On Thursday, 27 percent of block observations reached 100 percent. In the fall, the number of blocks observed to be 100 percent occupied were 36 percent on Thursday and 64 percent on Saturday.

Conclusions and Recommendations

Downtown McKinney is one of the City's unique assets – it provides a walkable environment, historic points of interest, and access to art, culture, and shopping. In order to improve access to downtown, the City should pursue a strategy to connect drivers to the existing available parking and to walk to their destinations. Downtown's walkability is what sets it apart from other parts of the city and region as a pleasant place to spend time and shop. Below are conclusions related to downtown's parking occupancy and on-street turnover, along with recommendations for improving how parking functions in downtown.

Occupancy Conclusion

The existing supply of parking is currently underutilized. The following trends were observed in the occupancy portion of the study and indicate that the existing parking supply is underutilized:

1. **Off-street private parking lots had the lowest peak occupancy throughout the study.** This parking type makes up 27 percent of the overall parking supply, but experiences lower occupancies due to private property owners' current practice of restricting who can park in these lots and to enforce those restrictions through towing. These low occupancy rates persist even in the evenings when some signs indicate that towing would not be enforced (i.e., some state that towing would be enforced between 6 AM and 6 PM).
2. **On-street parking experiences the highest occupancy rates.** These parking spaces are highly visible and in demand due to the general convenience of parking curbside. On-street parking makes up 20 percent of the overall supply, but all on-street parking is not equally in demand. Distance to the Square proper makes a substantial difference in how full these spaces were. The on-street spaces in Ring 1 experienced a peak rate of 97 percent (out of 201 parking spaces), while those in Ring 3 reached a weekday peak of just 67 percent (out of 290 parking spaces).
3. **Even at the busiest times, there were hundreds of parking spaces available to the public.** For example, on a Tuesday afternoon in October, the peak time for all the types of public parking taken cumulatively, the occupancy rate was 59 percent. This means that even at the busiest time in the study, 902 public parking spaces were still available. This remaining available parking can be found in the public parking lots at the northern side of downtown and in the Chestnut Commons parking garage, which had a minimum of 221 public parking spaces available at any given time during the study.
4. **Available parking spaces are concentrated in the east and northern areas of downtown.** Zone C, or the southwest area of downtown, experiences the greatest peak levels of occupancy, while the available supply is focused in the east side of downtown, with the two parking garages are located, and in the north end of downtown, where there are several large public parking lots.

Turnover Conclusion

On-street parking spaces can accommodate a high number of vehicles, but the high occupancy rates indicate that drivers may have a difficult time finding a space. The following trends were observed in the turnover portion of the study and support this conclusion:

1. **Drivers parking on-street around the Square do not stay for an excessive length of time.** In terms of the on-street parking spaces surrounding the Square proper, the license plate survey revealed that the average duration of stay is less than 3 hours on both weekdays and weekends, and consistent across the summer and fall seasons. Anecdotally, people are aware of the "3 for Free" program, but are not necessarily aware that the 3-hour limit does not apply on Saturdays,
2. **Valet service is an efficient use of on-street parking spaces and can make effective use of outlying parking lots.** Based on a comparison between typical on-street parking on blocks around the Square proper, the temporary valet service was able to serve far more unique vehicles than typical on-street parking.
3. **On-street parking occupancy is high around the Square, frequently reaching 100 percent.** Fifty-eight percent of hourly observations showed blocks at 100 percent occupancy on the busiest

Saturday of the study, with a higher proportion at 100 percent later in the day. This condition could result in a frustrating experience for a driver who does not know where to find public parking.

Recommendations

Improve utilization of existing parking supply

There are two key ways the City can improve utilization of existing parking supply:

1. **Ensure that drivers are aware of the parking lots that they can use.** On average, vehicles are parked for less than three hours in the on-street spaces on both weekdays and weekends. This may indicate that people are aware of the City's "3 for Free" program. However, the 3-hour limit does not apply on Saturdays and there may be value to encouraging visitors to linger in downtown for more than three hours in either on-street or off-street parking spaces. Further, the City can promote its existing available supply, particularly the Chestnut Commons parking garage and northern lots, through improvements in signage and online tools designed to guide people downtown. This is addressed further in the second recommendation category related to wayfinding.

Figure 17: *Examples of Private Parking Enforcement Signs*

There are many private parking lots in prominent locations within the downtown area where property owners have posted signs stating that parking in private lots without permission will be enforced through towing. Many of these parking lots have several signs and there is little continuity between them in terms of design of the signs or when towing occurs (24 hours a day, 6 AM to 6 PM, etc.). The result is a substantial number of towing signs in highly visible locations in downtown, often adjacent to public parking lots, which may give the impression that parking in off-street lots presents a risk of being towed. The City's development regulation update, currently in its assessment phase, will likely include changes to the sign standards for the downtown area. This would be the ideal time to modify the downtown sign regulations to reduce sign clutter.

Private property owners also have a role to play in supporting downtown's vitality and could benefit by fully utilizing their parking lots: For example, it appears that some of the private parking lots appear to be used for valet parking. This has the effect of allowing private parties to redistribute parking demand from on-street or public parking lots to private parking lots. One example is the private parking lot at the northwest corner of Davis and Kentucky, which rarely exceeded 50 percent

occupancy during the summer. Yet in the fall, two Saturday evening counts showed that private lot to be at or above 75 percent occupancy. Private property owners can choose to use their parking lots at times when they are not needed by the primary business, while offering a benefit for people who drive downtown and the business that they are visiting. Downtown visitors can then spend their time dining and shopping, rather than searching for a parking space. In the future, the City should seek out partnerships with private property owners in order to more effectively utilize the existing parking supply in a way that works well for visitors and downtown businesses.

2. **Provide a comfortable and intuitive way for drivers to reach their downtown destinations.** Two programs merit additional evaluation for their ability to support this goal:

DASH: The Downtown Area Shuttle (DASH), receives funding through the Main Street program. It currently functions as an on-demand service and runs a semi-regular route through as it waits for calls for service. The City should explore ways to promote the DASH because it offers a fast, comfortable option for getting people from downtown parking lots to destinations nearer to the Square, with the convenience of door-to-door service. There are existing signs in public parking lots and the availability of the program is currently promoted through the City's social media and website. Informational signs with the DASH phone number are located around downtown. It would be worthwhile to reevaluate whether these signs should include additional information such as operating hours, typical wait times, or a map of the service area. Exploring use of the DASH as a downtown circulator could improve its visibility and provide additional predictability for riders.

Figure 18: *Sign advertising DASH Service in Zone C*

Valet Parking: As described in the turnover discussion, the pilot valet program provided insight into how a long-term valet program could be a promising addition to the parking options in downtown McKinney. First, the pilot program showed that a substantially higher number of individual vehicles could be served in the same amount of space as typical on-street parking spaces (these results show a 56 percent increase over comparable blocks). Second, a valet service helps to re-balance the demand for parking from the Square proper to areas where there is a greater number of available spaces. In addition to these benefits, a valet program offers qualitative benefits, such as the convenience of parking directly on the Square, avoiding confusion about where parking is allowed, and saving time and effort of looking for a parking space. It is noteworthy that so many drivers were willing to pay a fee of $5.00 to use the valet service this summer, even though there was free parking available to them. Notably, in a survey, 90 percent of customers of the service rated it as excellent and 75 percent of merchants said they would be in favor of seeing the service continue. The pilot valet program offered valuable insight about the willingness of downtown visitors to pay to use a valet service. Further

consideration should be given to whether a valet program should be instituted downtown, where it should be located, and the best way to administer the program.

Improve Wayfinding to and within Downtown McKinney

This recommendation relates to the first recommendation related to ensuring that drivers know where parking is available. Wayfinding is a system of navigating a place using visual cues, including signage and other tools. A citywide wayfinding study is planned for 2020. The following recommendations should be considered in the upcoming study and its implementation:

1. **Wayfinding for drivers:** This recommendation relates closely to the first set of recommendations because wayfinding for drivers will be essential to better utilize the parking supply in the northern area of downtown and Chestnut Commons parking garage.

   Physical signs: As signs have been updated and replaced over the years, there is a need to ensure a clear plan for signs that direct drivers to the existing supply once they're nearing the downtown area, including from Highway 5. Recent additions to the downtown signage, include neon signs on the Chestnut Commons parking garage and a monument sign in Lot 2, which identify the parking structure as public and the area as a cultural district, respectively. However, there are no signs which can be viewed from a moving vehicle that state that public parking lots are free, which may help drivers decide where to park. This is especially true for Chestnut Commons parking garage, where unfamiliar drivers might assume that the structure is not free. A comprehensive sign program for the downtown area should include wayfinding for drivers, as well as clear indications of the pricing or limitations of public parking lots.

   Online outreach: The City should explore strategies for online outreach to guide drivers to downtown parking through existing websites or applications, such as Google Maps and Waze. These services are essential for first-time visitors to Downtown McKinney and are likely to reach a wide audience that also includes regular visitors. Google Maps currently identifies public parking lots around local businesses when one searches for directions, but it may be possible to provide more information about the costs of these parking lots and the best ways to reach them. This requires expanding and improving the City's online presence and communication with the public and should include collaboration with the Communications and Marketing and Information Technology departments. This effort may involve bringing drivers

Figure 19: *Chestnut Commons Parking Garage Neon Sign*

into downtown from routes other than Virginia Street and Louisiana Street. If drivers arrive from Highway 5/McDonald Street from the east or north, they would be more likely to encounter a parking garage or public parking lot with available capacity than if enter downtown from Louisiana Street and focus on finding on-street parking. The Information Technology Division is creating a mobile application for a range of citywide services, which may include parking information in the future. If the City moves forward with an app with parking information, a parking occupancy study a year after implementation would provide a useful snapshot of its effectiveness on a quicker timeframe than the typical five years.

2. **Wayfinding for pedestrians:** Pedestrian wayfinding improvements would guide people to destinations in the downtown area, such as the MPAC, shops and restaurants, and local landmarks such as the Collin County History Museum. This type of pedestrian-scale wayfinding is already present in downtown McKinney. The planned study may identify strategies to improve the experience of walking from parking lots at the northern end of downtown or the two public parking garages, which are relatively recent additions to downtown. Pedestrian-scale wayfinding will be essential for ensuring that people who park in the furthest lots feel comfortable walking from their vehicles. In addition to bringing people to and from their cars, a wayfinding strategy for downtown would also ensure that people can comfortably navigate around downtown, from place to place, and will enhance the experience of walking and spending time in downtown McKinney.

City of McKinney

Appendix

Historic Town Center Parking Update (2019)

Presented to City Council February 18, 2020

Appendix A: Supplemental Supply and Occupancy Data

Overall Parking Supply, 2009 - 2019

Parking studies have been conducted since 2004; this appendix compares the three most recent studies, which have been conducted in 2009, 2014, and 2019. These past parking studies are available on the Planning Department's website (at https://www.mckinneytexas.org/1548/Downtown-Parking-Studies). The following tables focus on the two most recent past studies in order to provide the most directly comparable information. The majority of the supply of parking consists of off-street public parking spaces, consistent with past years. However, there has been an increase in public off-street parking as a result of new supply added by Davis at the Square, the Chestnut parking garage, and an expansion of the study area to include two surface parking lots that are publicly available at the north end of Tennessee Street. The percentages shown below identify the proportion of the total supply that each parking type made up for the study year.

Table 9: *Comparison of Parking Supply by Type, 2009 – 2019*

Parking Garages			Public Off-Street Parking			Private Off-Street Parking			On-Street Parking		
2009	2014	2019	2009	2014	2019	2009	2014	2019	2009	2014	2019
0 (0%)	0 (0%)	508 (17%)	1,262 (50%)	1,266 (49%)	1,081* (36%)	780 (31%)	853 (33%)	799 (27%)	461 (19%)	457 (18%)	601 (20%)

2009 Total: 2,503
2014 Total: 2,576
2019 Total: 2,989
Parking Supply confirmed by City of McKinney staff, June 2019.

*Note: The overall supply of public off-street parking includes the parking lot that serves the office building at 300 E. Davis Street ("Playful Studios") because that lot is available to the public during evening and weekend hours.

Parking Supply by Ring

By Ring, the greatest supply of parking is in Ring 3, which is consistent with past parking studies of downtown McKinney. In addition, the majority of spaces in Ring 3 are found in public off-street parking lots. This subset – public-off street spaces in Ring 3 – make up 38 percent of the total supply of parking available in downtown McKinney. This is also where most of the growth in supply has occurred, as previously noted.

Table 10: *Comparison of Parking Supply by Ring and Type, 2009 – 2019*

Ring	Public Parking Garages	Public Off-Street Parking			Private Off-Street Parking			On-Street Parking			2019 Total
	2019	2009	2014	2019	2009	2014	2019	2009	2014	2019	
Ring 1	0	0	0	0	62	61	57	199	194	201	258
Ring 2	0	396	412	443	332	336	326	120	127	110	877
Ring 3	508	866	854	638	386	456	418	142	136	290	1,854
Totals	**508**	**1,262**	**1,266**	**1,081**	**780**	**853**	**799**	**461**	**457**	**601**	**2,989**

Parking Supply by Zone

Table 11 below compares the overall parking supply across the three most recent parking studies. As shown, the supply in Zone B now provides 32 percent of the supply, and Zone D experienced a modest decrease in overall supply. The increases in supply are due to the addition of parking garages, expansion of the study area to include publicly available parking lots in the north. Only the supply available to the public (general public or customers of a business) was counted as part of this study. In total, the supply of parking in Zone D is slightly less than it was in the 2014 parking study.

Table 11: *Comparison of Parking Supply by Zone, 2009 – 2019*

Zone	2009	2014	2019
A (Northwest)	670 (27%)	701 (27%)	851 (28%)
B (Northeast)	674 (27%)	628 (24%)	962 (32%)
C (Southwest)	440 (17%)	462 (18%)	466 (16%)
D (Southeast)	719 (29%)	785 (31%)	710 (24%)
Totals	**2,503**	**2,576**	**2,989**

Table 12 provides a breakdown of how each type of parking has changed over the course of the last three parking studies by zone.

Table 12: *Comparison of Parking Supply by Zone and Type, 2009 – 2019*

	Public Parking Garages	Public Off-Street Parking			Private Off-Street Parking			On-Street Parking		
Zone	2019	2009	2014	2019	2009	2014	2019	2009	2014	2019
A (Northwest)	0	267	260	350	210	258	291	193	183	210
B (Northeast)	312	301	253	339	274	288	220	99	87	91
C (Southwest)	0	90	102	112	251	261	224	99	99	130
D Southeast	196	604	651	280	45	46	64	70	88	170
Totals	**508**	**1,262**	**1,266**	**1,081**	**780**	**853**	**799**	**461**	**457**	**601**

Comparison of Occupancy Results by Type, 2009 – 2019

As described in the body of the report, the overall occupancy by parking type is shown in this study to be consistent with past years. However, the occupancy rate for public off-street parking experienced a ten percent increase, from 53 percent to 62 and 63 percent on Saturday.

Table 13: *Peak Occupancy by Type, 2009 - 2019*

	Public Parking Garages		Public Off-Street Parking				Private Off-Street Parking				On-Street Parking			
Day	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)
Weekday	42%	39%	51%	51%	64%	62%	46%	36%	47%	45%	72%	83%	79%	74%
Saturday	38%	36%	46%	53%	62%	63%	43%	35%	35%	42%	74%	77%	80%	79%

Parking Occupancy data gathered on the following dates:
2009: July 7-11;
2014: June 14-21;
2019: June 29-July 13 and October 19-November 7

Comparison of Occupancy Results by Ring and Type, 2009 – 2019

Tables 14 and 15 provide the peak occupancy rates for each Ring by parking type on Weekdays and Saturday. As described in the report, on-street parking has consistently had a higher occupancy rate than other types. Over the years, there has been a steady increase in the peak occupancy rate in Ring 3, while Rings 1 and 2 have maintained high occupancy rates, particularly in the public off-street parking and on-street parking types. The occupancy rates generally follow similar patterns as those in past studies, with higher occupancy in Ring 1, decreasing in Ring 2, and a lower peak occupancy rate in Ring 3.

Table 14: *Weekday Peak Occupancy by Ring and Type, 2009 – 2019*

	Public Parking Garages		Public Off-Street Parking				Private Off-Street Parking				On-Street Parking			
Ring	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)
Ring 1	N/A	N/A	N/A	N/A	N/A	N/A	65%	67%	81%	82%	93%	99%	97%	97%
Ring 2	N/A	N/A	79%	92%	91%	94%	41%	53%	58%	51%	70%	89%	87%	91%
Ring 3	38%	42%	21%	33%	44%	44%	26%	23%	36%	34%	33%	54%	71%	52%

Parking Occupancy data gathered on the following dates:
2009: July 7-11;
2014: June 14-21;
2019: June 29-July 13 and October 19-November 7

Table 15: *Saturday Peak Occupancy by Ring and Type, 2009 – 2019*

	Parking Garages		Public Off-Street Parking				Private Off-Street Parking				On-Street Parking			
Ring	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)
Ring 1	N/A	N/A	N/A	N/A	N/A	N/A	52%	49%	35%	27%	99%	100%	95%	97%
Ring 2	N/A	N/A	66%	91%	92%	94%	33%	47%	50%	46%	74%	81%	91%	95%
Ring 3	38%	36%	15%	35%	41%	41%	47%	23%	30%	42%	44%	46%	68%	67%

Parking Occupancy data gathered on the following dates:
2009: July 7-11;
2014: June 14-21;
2019: June 29-July 13 and October 19-November 7

Comparison of Occupancy Results by Zone, 2009 – 2019

As outlined in the study, Zone C (in the southeast) is almost completely at capacity in the two public parking types at its peak. This sets it apart from the other three zones. No zone in past studies has had a peak occupancy rate exceeding 100 percent for any of the parking types or zones.

Table 16: *Weekday Peak Occupancy by Zone and Type, 2009 – 2019*

	Public Parking Garages		Public Off-Street Parking				Private Off-Street Parking				On-Street Parking			
	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)
A	N/A	N/A	85%	86%	68%	71%	40%	27%	47%	48%	68%	95%	86%	88%
B	25%	29%	34%	52%	55%	55%	32%	51%	46%	55%	75%	83%	88%	85%
C	N/A	N/A	72%	97%	102%	100%	31%	28%	53%	49%	63%	69%	93%	73%
D	72%	66%	21%	33%	62%	57%	73%	65%	64%	55%	79%	75%	69%	58%

Parking Occupancy data gathered on the following dates:
2009: July 7-11;
2014: June 14-21;
2019: June 29-July 13 and October 19-November 7

Table 17: *Saturday Peak Occupancy by Zone and Type, 2009 – 2019*

	Public Parking Garages		Public Off-Street Parking				Private Off-Street Parking				On-Street Parking			
Zone	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)	2009	2014	2019 (Jun.)	2019 (Oct.)
A	N/A	N/A	70%	75%	67%	70%	46%	38%	35%	26%	81%	80%	79%	76%
B	17%	20%	22%	39%	47%	48%	44%	53%	38%	33%	90%	80%	87%	89%
C	N/A	N/A	94%	100%	100%	100%	36%	44%	41%	74%	63%	76%	94%	89%
D	71%	66%	15%	44%	73%	71%	42%	83%	61%	47%	59%	84%	71%	75%

Parking Occupancy data gathered on the following dates:
2009: July 7-11;
2014: June 14-21;
2019: June 29-July 13 and October 19-November 7

Peak Occupancy Rates at Peak Times

As described on page 16 of the report, the following figures depict the parking areas in the downtown study area by mid-day peaks and number of parking spaces available.

Figure 20: *Mid-Day Parking Occupancy by Lot Size (All Parking Types)*

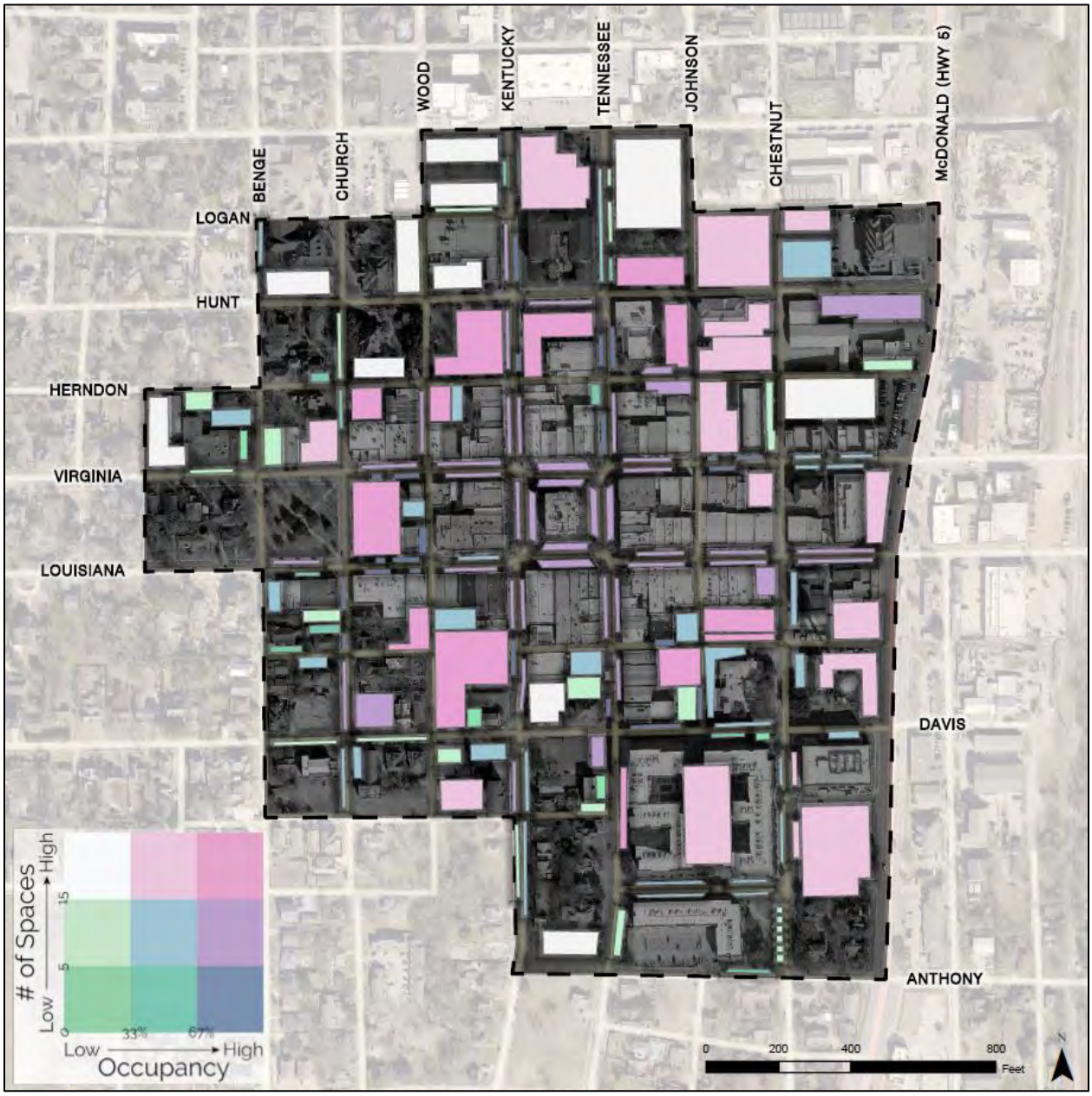
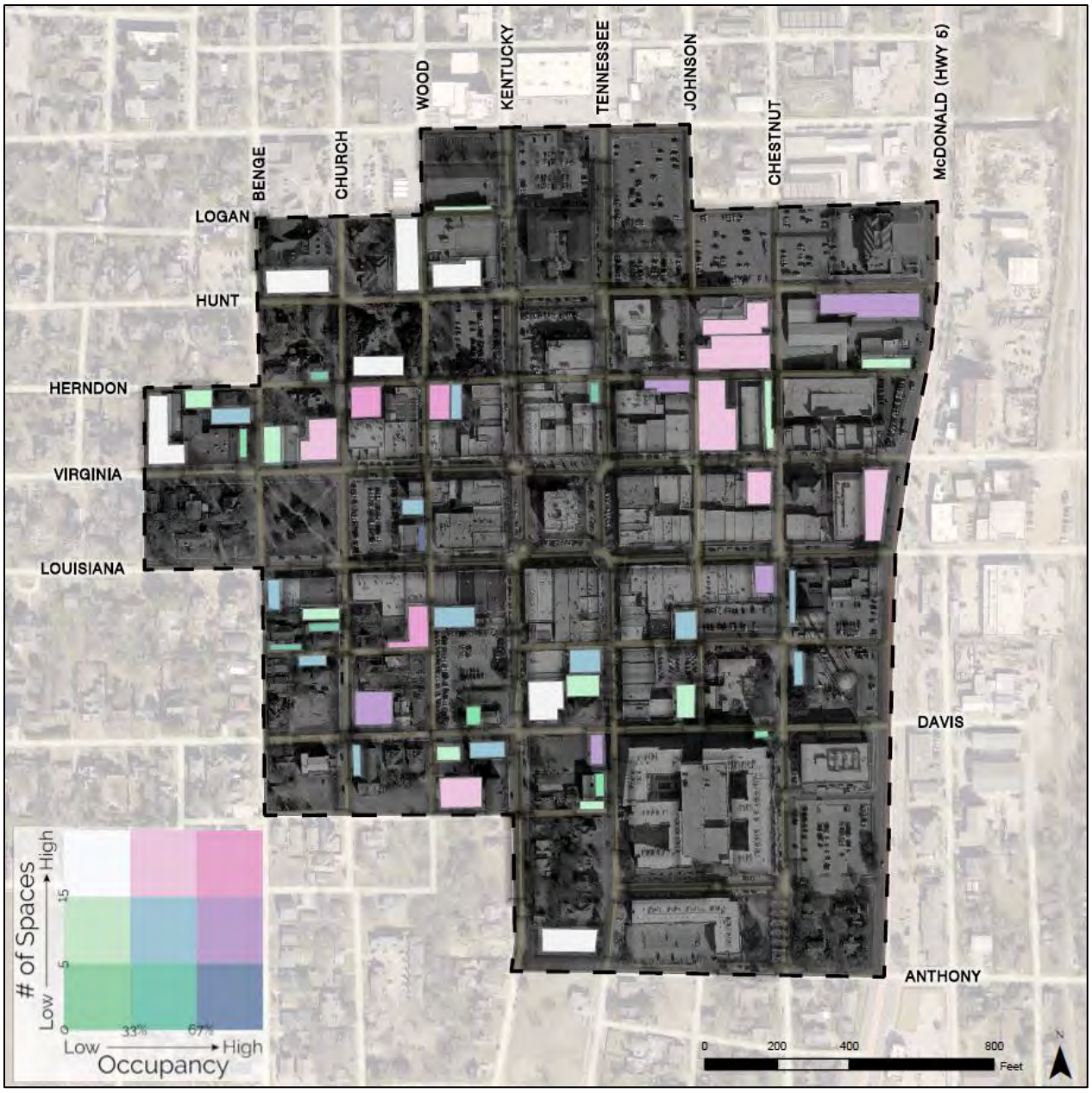


Figure 21: *Mid-Day Parking Occupancy by Lot Size (Private Parking Only)*



Appendix B: Supplemental Turnover Exhibits

As noted in the report, the results of the turnover portion of the study were very similar between the summer and fall. The number of unique vehicles observed in October on Thursday and Saturday are provided in Table 19 below, with the June totals provided for reference.

Fall Turnover Results

Table 18: *Unique Vehicles and Duration of Stay (Fall)*

	Total Parking Spaces	**Thursday**		**Saturday**	
		Unique Vehicles	**Average Duration of Stay (hours)**	**Unique Vehicles**	**Average Duration of Stay (hours)**
Kentucky Street	70	206	2.31	214	2.69
Tennessee Street	68	235	2.14	205	3.32
Virginia Street	70	242	2.06	284	2.09
Louisiana Street	74	292	1.98	280	2.10
October Totals	282	975	2.12	983	2.55
June Totals	282	1,060	1.95	1,000	2.54

Duration of Stay

In terms of duration of stay, the results of the study taken from October very closely mirrored those from the study in June. The majority of unique vehicles were observed for 2 hours or less (80 percent on Thursday and 77 percent on Saturday). Notably, very similar proportions of unique vehicles were present for 3 or more hours on Thursday and Saturday, which have different regulations with respect to time limits for on-street spaces. The 3-hour limit for on-street parking is not in effect on Saturday, yet only 2 percent more vehicles were observed remaining in the same spaces for 3 or more hours.

Figure 22: *Duration of Stay, Thursday, October 24*

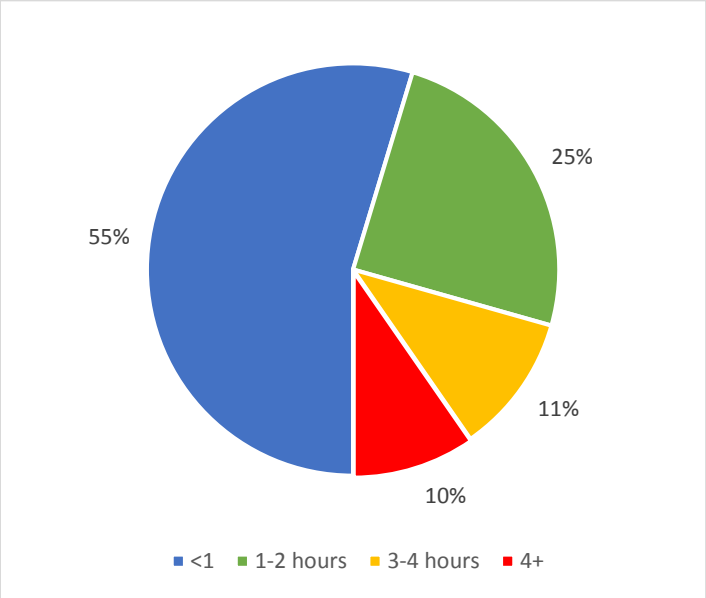
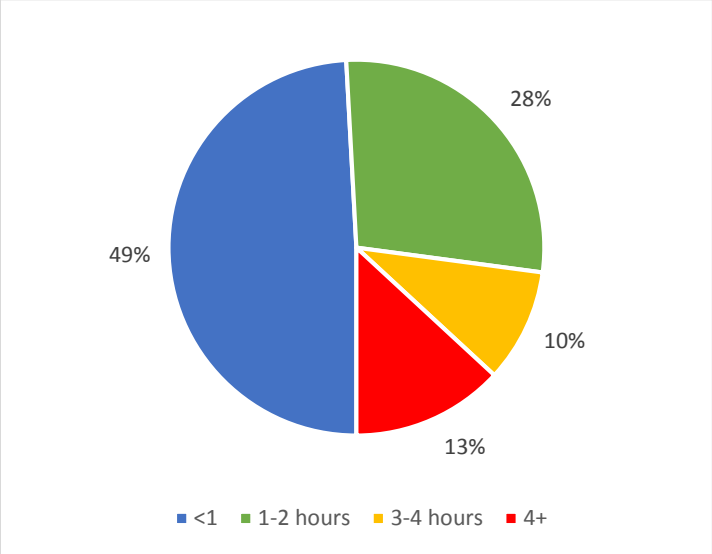


Figure 23: *Duration of Stay, Saturday, October 26*



On-Street Hourly Occupancy

Occupancy by Block

The following tables provide the hour-by-hour, block-by-block percent occupancy of each block on each street. As noted in the report, 64 percent of the block observations on Saturday in the summer were 100 percent occupied while 58 percent of the blocks were completely full out of all of the hourly occupancy observations on the Saturday in fall. On Thursday, these numbers were lower, with 36 percent in the summer and 27 percent in the fall showing an occupancy of 100 percent. These tables give an indication of how often a driver might encounter a completely full block of on-street parking. For example, one could follow the 12 PM column in June across all streets on the square to get a sense of how easy or difficult it would have been to find a parking space at lunch on that Thursday or Saturday. The license plate survey took place on Thursday, June 27 and Thursday, October 24, 2019. The key used in the block occupancy exhibit of the report is provided here.

Table 19: *Percent of Block Observations 100 Percent Occupied*

	Summer	**Fall**
Thursday	**27%**	**36%**
Saturday	**58%**	**64%**

Key: Color Code for Block Occupancy Tables

Percent Occupied	**Color**
91-100%	
81-90%	
71-80%	
61-70%	
<60%	

Table 20: *Thursday Block Occupancy, Kentucky Street - June*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	71%	43%	100%	100%	100%	86%	100%	71%
2	86%	100%	86%	86%	100%	86%	43%	100%
(Across from MPAC) 3	67%	67%	83%	83%	50%	50%	50%	100%
4	50%	67%	83%	83%	100%	100%	67%	83%
5	0%	50%	67%	50%	67%	50%	33%	33%
6	17%	33%	100%	83%	100%	67%	17%	67%
7	33%	67%	83%	83%	83%	67%	50%	67%
(Adjacent to MPAC) 8	83%	92%	92%	92%	92%	92%	92%	83%
9	71%	71%	100%	100%	86%	71%	57%	86%
10	50%	100%	100%	100%	100%	100%	100%	100%

Table 21: *Thursday Block Occupancy, Kentucky Street – October*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	0%	29%	100%	86%	71%	57%	71%	57%
2	43%	71%	86%	100%	71%	57%	57%	86%
(Across from MPAC) 3	83%	100%	83%	100%	100%	100%	100%	100%
4	67%	83%	100%	100%	100%	67%	83%	67%
5	0%	100%	100%	100%	100%	50%	75%	50%
6	33%	100%	100%	83%	67%	83%	50%	83%
7	83%	100%	100%	100%	83%	50%	83%	67%
(Adjacent to MPAC) 8	83%	100%	100%	100%	92%	100%	100%	83%
9	43%	71%	86%	86%	71%	86%	100%	71%
10	50%	100%	100%	100%	100%	0%	100%	100%

Table 22: *Thursday Block Occupancy, Tennessee Street – June*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	25%	25%	75%	100%	100%	50%	75%	75%
2	100%	80%	100%	80%	80%	80%	60%	100%
(Adjacent to MPAC) 3	82%	91%	91%	91%	91%	82%	100%	100%
4	50%	100%	100%	67%	100%	67%	100%	100%
5	33%	67%	33%	67%	100%	67%	67%	33%
6	29%	57%	57%	57%	86%	43%	86%	71%
7	67%	83%	100%	100%	100%	100%	100%	83%
(Across from MPAC) 8	62%	92%	92%	92%	92%	69%	92%	100%
9	67%	89%	67%	78%	78%	78%	78%	67%
10	25%	75%	75%	100%	100%	50%	50%	25%

Table 23: *Thursday Block Occupancy, Tennessee Street – October*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	75%	50%	100%	75%	75%	25%	100%	75%
2	80%	80%	100%	100%	40%	60%	40%	40%
(Adjacent to MPAC) 3	36%	73%	91%	82%	73%	73%	73%	91%
4	71%	100%	100%	100%	100%	100%	100%	100%
5	33%	67%	100%	100%	100%	100%	67%	100%
6	29%	71%	86%	71%	57%	71%	71%	43%
7	86%	100%	100%	100%	100%	100%	100%	71%
(Across from MPAC) 8	92%	92%	100%	92%	92%	92%	92%	85%
9	67%	78%	78%	78%	56%	56%	33%	0%
10	50%	33%	67%	50%	50%	67%	50%	33%

Table 24: *Thursday Block Occupancy, Virginia Street – June*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	86%	86%	86%	86%	86%	86%	71%	71%
2	63%	63%	88%	75%	75%	75%	50%	88%
(Across from MPAC) 3	85%	100%	100%	92%	100%	85%	69%	92%
4	100%	100%	100%	100%	83%	100%	67%	67%
5	25%	100%	100%	100%	75%	75%	100%	25%
6	100%	100%	100%	100%	67%	100%	100%	100%
7	67%	83%	83%	83%	83%	83%	17%	83%
(Adjacent to MPAC) 8	64%	100%	100%	100%	91%	91%	73%	100%
9	88%	75%	75%	88%	88%	75%	75%	75%
10	100%	100%	100%	100%	50%	50%	75%	100%

Table 25: *Thursday Block Occupancy, Virginia Street – October*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	86%	71%	100%	100%	71%	86%	57%	71%
2	50%	75%	63%	88%	50%	50%	50%	88%
(Across from MPAC) 3	85%	100%	100%	100%	77%	77%	62%	69%
4	100%	100%	100%	83%	100%	83%	67%	67%
5	50%	50%	100%	75%	100%	100%	50%	50%
6	67%	100%	100%	100%	67%	67%	67%	0%
7	83%	83%	83%	83%	83%	50%	67%	17%
(Adjacent to MPAC) 8	82%	82%	100%	91%	73%	64%	36%	82%
9	75%	88%	88%	88%	63%	75%	63%	88%
10	50%	75%	100%	100%	25%	100%	75%	75%

Table 26: *Thursday Block Occupancy, Louisiana Street – June*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	75%	75%	100%	100%	100%	100%	100%	100%
2	71%	71%	86%	71%	71%	71%	71%	57%
(Adjacent to MPAC) 3	82%	100%	91%	100%	100%	100%	100%	100%
4	57%	71%	100%	86%	86%	86%	71%	71%
5	86%	57%	100%	100%	86%	100%	71%	71%
6	86%	71%	100%	86%	100%	43%	86%	43%
7	100%	100%	86%	100%	100%	86%	86%	86%
(Across from MPAC) 8	85%	100%	100%	100%	100%	92%	100%	92%
9	100%	100%	100%	100%	100%	71%	86%	100%
10	75%	100%	75%	100%	100%	100%	100%	75%

Table 27: *Thursday Block Occupancy, Louisiana Street – October*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	100%	100%	100%	100%	75%	50%	75%	100%
2	29%	14%	100%	57%	57%	57%	71%	100%
(Adjacent to MPAC) 3	100%	100%	100%	100%	100%	100%	73%	91%
4	86%	86%	100%	86%	86%	100%	71%	57%
5	100%	86%	100%	86%	86%	71%	100%	100%
6	100%	100%	100%	100%	57%	71%	86%	100%
7	86%	100%	100%	100%	86%	86%	71%	86%
(Across from MPAC) 8	92%	100%	100%	92%	92%	100%	69%	92%
9	100%	86%	100%	100%	100%	100%	100%	71%
10	100%	75%	100%	100%	50%	100%	100%	100%

Saturday On-Street Hourly Occupancy

License plate surveys were taken on Saturday, June 29 and Saturday, October 26, 2019.

Table 28: *Saturday Block Occupancy, Kentucky Street – June*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	0%	100%	100%	100%	100%	100%	100%	86%
2	86%	100%	100%	100%	86%	100%	100%	100%
(Across from MPAC) 3	83%	83%	83%	100%	83%	67%	67%	67%
4	83%	100%	100%	100%	67%	83%	83%	83%
5	50%	50%	67%	67%	67%	67%	50%	67%
6	100%	100%	100%	100%	100%	100%	83%	100%
7	83%	67%	100%	100%	100%	67%	83%	83%
(Adjacent to MPAC) 8	100%	92%	100%	100%	92%	92%	100%	100%
9	71%	86%	100%	100%	100%	86%	86%	100%
10	100%	100%	100%	100%	100%	100%	100%	100%

Table 29: *Saturday Block Occupancy, Kentucky Street – October*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	71%	100%	71%	100%	100%	100%	29%	71%
2	100%	100%	100%	100%	86%	100%	71%	100%
(Across from MPAC) 3	100%	100%	100%	100%	100%	100%	100%	100%
4	100%	100%	100%	100%	83%	100%	83%	83%
5	75%	100%	100%	100%	100%	100%	100%	100%
6	67%	100%	100%	100%	100%	100%	100%	83%
7	100%	100%	100%	100%	100%	100%	83%	67%
(Adjacent to MPAC) 8	100%	92%	100%	100%	100%	100%	83%	100%
9	86%	86%	100%	100%	86%	100%	57%	57%
10	50%	100%	100%	100%	100%	100%	100%	100%

Table 30: *Saturday Block Occupancy, Tennessee Street – June*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	100%	100%	100%	100%	100%	75%	75%	75%
2	100%	100%	80%	80%	80%	80%	100%	80%
(Adjacent to MPAC) 3	91%	100%	100%	100%	91%	100%	91%	100%
4	83%	83%	100%	100%	100%	83%	83%	100%
5	100%	100%	100%	100%	100%	67%	100%	100%
6	71%	86%	71%	71%	71%	86%	57%	71%
7	100%	100%	100%	100%	100%	67%	83%	100%
(Across from MPAC) 8	92%	92%	92%	100%	100%	100%	92%	100%
9	67%	67%	67%	89%	89%	89%	89%	78%
10	100%	100%	100%	75%	100%	100%	50%	0%

Table 31: *Saturday Block Occupancy, Tennessee Street – October*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	75%	100%	100%	100%	100%	100%	100%	25%
2	80%	80%	100%	100%	100%	100%	80%	80%
(Adjacent to MPAC) 3	45%	73%	91%	91%	91%	91%	91%	91%
4	86%	100%	100%	100%	100%	100%	86%	86%
5	100%	100%	100%	100%	100%	100%	100%	67%
6	71%	86%	71%	71%	71%	86%	86%	71%
7	100%	100%	100%	100%	100%	100%	100%	100%
(Across from MPAC) 8	100%	100%	100%	100%	100%	100%	92%	100%
9	78%	89%	78%	89%	89%	89%	89%	78%
10	17%	67%	67%	67%	67%	67%	33%	50%

Table 32: *Saturday Block Occupancy, Virginia Street – June*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	29%	86%	86%	100%	100%	86%	57%	86%
2	63%	100%	88%	88%	75%	88%	75%	88%
(Across from MPAC) 3	77%	100%	100%	100%	100%	92%	92%	92%
4	100%	83%	100%	100%	100%	100%	50%	83%
5	100%	100%	100%	100%	100%	75%	100%	25%
6	100%	100%	100%	100%	100%	100%	100%	100%
7	67%	83%	100%	100%	100%	100%	67%	83%
(Adjacent to MPAC) 8	100%	100%	100%	100%	100%	82%	100%	100%
9	88%	75%	88%	88%	88%	100%	75%	75%
10	100%	100%	100%	100%	100%	100%	100%	25%

Table 33: *Saturday Block Occupancy, Virginia Street – October*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	57%	100%	100%	100%	100%	86%	100%	100%
2	75%	88%	75%	75%	88%	63%	100%	63%
(Across from MPAC) 3	100%	100%	100%	100%	100%	100%	100%	92%
4	100%	100%	100%	100%	100%	83%	100%	100%
5	100%	100%	100%	100%	75%	75%	100%	100%
6	100%	100%	100%	100%	100%	100%	100%	67%
7	83%	83%	83%	83%	83%	100%	67%	83%
(Adjacent to MPAC) 8	100%	100%	100%	100%	100%	100%	100%	100%
9	88%	88%	88%	100%	88%	63%	88%	88%
10	100%	100%	100%	100%	100%	75%	100%	100%

Table 34: *Saturday Block Occupancy, Louisiana Street – June*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	75%	100%	100%	75%	100%	100%	100%	100%
2	57%	100%	86%	86%	86%	86%	86%	43%
(Adjacent to MPAC) 3	RESERVED FOR MPAC VALET SERVICE							
4	100%	100%	100%	71%	100%	100%	100%	86%
5	100%	100%	100%	100%	100%	86%	100%	100%
6	100%	100%	100%	86%	86%	100%	71%	100%
7	100%	100%	100%	100%	86%	100%	100%	100%
(Across from MPAC) 8	100%	100%	100%	100%	100%	100%	100%	100%
9	100%	100%	100%	100%	100%	100%	100%	100%
10	100%	100%	100%	100%	100%	100%	75%	75%

Table 35: *Saturday Block Occupancy, Louisiana Street – October*

Block	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM
1	100%	100%	100%	100%	100%	100%	100%	100%
2	14%	14%	0%	29%	14%	0%	0%	29%
(Adjacent to MPAC) 3	100%	100%	100%	100%	100%	100%	100%	100%
4	71%	86%	86%	86%	71%	86%	86%	100%
5	86%	86%	100%	86%	100%	86%	100%	100%
6	100%	100%	86%	100%	100%	100%	100%	100%
7	100%	100%	100%	100%	100%	86%	71%	100%
(Across from MPAC) 8	100%	100%	100%	100%	100%	100%	100%	100%
9	100%	100%	100%	100%	100%	100%	100%	100%
10	100%	100%	100%	100%	100%	100%	100%	100%

Turnover Comparison with 2004 Study Results

The 2004 Downtown Parking Study included a "license plate survey" similar to the one conducted as part of the current update. However, only minimal analysis is provided in the study and the time studied differed from the current study. The license plate survey took place on a Wednesday and a Friday and included only Ring 1, whereas the current study included observations for on-street parking in Ring 1 and Ring 2. The comparable results for both studies are provided in the table below:

Table 36: *Turnover Comparison between 2004 and 2019*

	2004	**2019 (June)**	**2019 (October)**
Average Duration of Stay – Weekday (Hours)	Wednesday: 2.15	Thursday: 1.95	Thursday: 2.12
Average Duration of Stay – Weekend (Hours)	Friday: 1.55	Saturday: 2.54	Saturday: 2.55
Percent of Vehicles Parked 3 Hours or More	Wednesday: 21% Friday: 17%	Thursday: 17% Saturday: 20%	Thursday: 21% Saturday: 23%
Percent of Vehicles Parked One Hour or Less	Wednesday: 54% Friday: 54%	Thursday: 57% Saturday: 55%	Thursday: 55% Saturday: 49%