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July 23, 2020

Mr. Mark E Stivers, AICP
Borough Manager
Columbia Borough
308 Locust Street
Columbia, PA 17512-1121

Re: Columbia Borough Parking Study
14-4405.00

Dear Mr. Stivers:

Columbia Borough engaged Walker Consultants to prepare a parking study to better understand the current and future factors that affect parking availability for Borough residents, local businesses, and visitors in order to direct available funds obtained through a RACP grant to the most beneficial use for the community.

We appreciate the opportunity to be of service to you on this project. If you have any questions or comments, please do not hesitate to call.

Sincerely,

WALKER CONSULTANTS

A handwritten signature in blue ink that reads "Will Rhodin".

Will Rhodin
Senior Consultant

A handwritten signature in blue ink that reads "Megan Gardo".

Megan Gardo
Analyst



Columbia Borough Parking Study

Columbia, Pennsylvania

July 23, 2020 DRAFT

Prepared for: Mark E. Stivers, AICP



WALKER
CONSULTANTS

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Executive Summary

As a result of revitalization efforts by Borough leadership and citizenry to capitalize on the community’s unique and highly valued assets, Columbia is in the midst of a redevelopment renaissance. While the recent and anticipated economic, residential and social successes represent great opportunity, they also bring new challenges, including adequate parking. Recognizing the need to address parking challenges early in the revitalization process, the Borough secured funding through the Commonwealth’s Redevelopment Assistance Capital Program (RACP). To better direct the funds obtained through the RACP grant to the most beneficial use for the community, Columbia engaged Walker Consultants to prepare a parking study with the goals of:

- quantifying current and future parking supply, demand, and adequacy,
- recommending changes to parking rates, time limits, and enforcement, and
- preparing a preliminary site feasibility analysis.

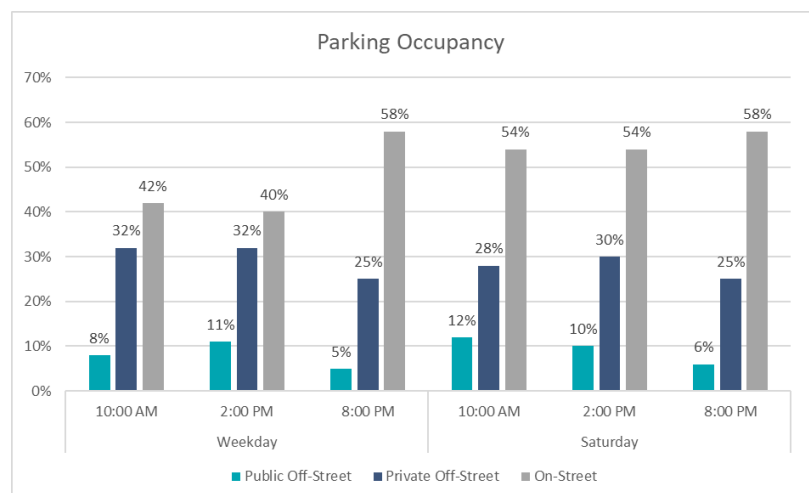
Supply and Demand

Based on discussion with Columbia, Walker defined the study area as an approximately 67-block area encompassing most of the downtown community. Within the larger study area, four distinct zones were identified, including the Downtown Business District, the Historic District, the Riverfront District and the Residential District. The districts are based on the Economic Development Strategies Plan prepared for Columbia in September 2010.

Walker confirmed the available parking supply within the study area and collected parking occupancy data on Thursday, December 12th and Saturday, December 14th, 2020. Three counts were performed, at 10:00 am, 2:00 p.m. and 8:00 p.m. to capture parking occupancy throughout a typically busy day. There were approximately 6,543 parking spaces within the study area, including 3,637 on-street spaces, 449 public off-street spaces, and 2,367 private off-street spaces. It is important to note that the public off-street parking supply includes the 130-space grass overflow lot adjacent to the riverfront.

Peak weekday parking demand occurred during the 8:00 p.m. count with approximately 2,719 spaces or 42% of the supply occupied. During the peak hour, on-street parking was approximately 58% occupied, while public off-street parking was only 5% occupied during the peak hour. We observed that on-street parking was significantly more utilized than public or private off-street parking throughout the day, as shown in the figure to the right.

Peak weekend parking demand also occurred during the 8:00 p.m. count, with



about 42% of the supply occupied; the on- and off-street parking supply experienced similar occupancy rates to weekday conditions.

The field work and observations conducted for this study were performed prior to the implementation of initiatives intended to curb the spread of COVID-19 that have since temporarily altered normal economic and hence parking behavior. The data collected by Walker for this study is representative of typical parking demand patterns in Columbia pre COVID-19. We have conducted our analysis assuming a return to these conditions.

While Walker observed parking activity during December, anecdotal evidence gained through discussions with Borough leadership and key community stakeholders indicates that our survey day may not represent design day conditions. Currently, much of Columbia’s economy is driven by recreational tourism and antique shopping, which may not be captured by the December survey.

For planning purposes only, and based on anecdotal evidence, Walker adjusted the on- and off-street occupancy rates to model a typical busy weekday during the spring or summer months. Increases in the public off-street lots varied between 50% and 100% of survey day observations, except for the grass overflow public lot on Block 66. While localized “hot spots” or areas nearing capacity may exist, overall adequate parking was available within the study area to support parking needs during weekday and Saturday design conditions.

In order to project future demand conditions within the study area, Walker obtained proposed land use information from the Borough, modeled future parking demand associated with these land uses, and overlaid this information with current parking demand conditions during the 2:00 p.m. count to obtain a conceptual projection of future parking demand in the study area. Some of the notable future developments included in our analysis are the Cimarron Business Center, Chip Factory Hotel, Hotel Locust, CHI Market House, and St. John Neumann Daycare. Additionally, Walker applied a 1% annual growth factor to the on-street and public off-street parking demand to account for general growth in the area.

Specifically, Walker analyzed demand for three-year, five-year, and ten-year planning horizons. Note, the planned developments are expected to occur within the next five years. The tables below summarize the parking demand by type during weekday and Saturday conditions.

Future Weekday Parking Occupancy – Survey Day

Zone	Private Off-Street Parking				Public Off-Street Parking				On-Street Parking			
	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years
Downtown	38%	58%	61%	61%	22%	43%	44%	46%	43%	45%	45%	48%
Historic	25%	25%	25%	25%	50%	50%	50%	50%	41%	43%	43%	46%
Residential	33%	33%	33%	33%	0%	0%	0%	0%	39%	40%	41%	43%
Riverfront	30%	44%	44%	44%	7%	7%	8%	8%	24%	25%	25%	27%
Total	32%	38%	38%	38%	11%	15%	16%	16%	40%	41%	42%	44%

Overall, weekday and Saturday occupancy rates do not suggest a parking shortage within the next ten years. This is not to say that localized “hot spots” will not exist on specific blocks during specific times of the day or for a specific types of parking space; however, surplus parking capacity is usually available within one or two blocks of the deficit.

Future Saturday Parking Occupancy – Survey Day

Zone	Private Off-Street Parking				Public Off-Street Parking				On-Street Parking			
	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years
Downtown	38%	44%	47%	47%	22%	46%	47%	47%	43%	63%	64%	67%
Historic	25%	32%	33%	33%	50%	0%	0%	0%	41%	58%	59%	62%
Residential	33%	26%	26%	26%	0%	0%	0%	0%	39%	54%	55%	58%
Riverfront	30%	26%	26%	26%	7%	8%	8%	8%	24%	30%	31%	33%
Total	32%	33%	34%	34%	11%	15%	15%	16%	40%	55%	57%	60%

Parking Rates and Time Limits

Parking rates, fees, time limits and enforcement are tools used to control parking demand and ensure turnover of the most desirable spaces. Currently, a two-hour time limit is enforced at all metered on-street parking spaces and in one of the public off-street lots in the Borough. A second publicly-owned lot is metered but does not have a two-hour time limit. The hourly parking rate at both on- and off-street meters is \$0.50 per hour. The parking meters in use are “quarters-only” Duncan units; they are not modern units. Most other public parking within the Borough ranges from no overnight parking to a 48-hour limit.

In Walker’s opinion, the process in place to enforce the metered spaces in the Borough, in conjunction with vehicular patrols to enforce street-sweeping parking, is adequate for the current level of activity, if the back-end system is sufficiently tracking activity and violators are paying fines within prescribed time periods. However, we do recommend increasing the hourly parking rate to \$1.00 per hour at on-street meters. The hourly rate in off-street metered lots could remain at \$0.50 per hour, while also maintaining free parking in some public lots outside of the meter district. No changes to the two-hour time limit are recommended at this time.

While the increase in hourly rates could be achieved with the current meters, a more modern system would make payment easier for the public. If Columbia Borough embarks on parking system modernizations such as installation of digital multi-space meters or initiates a residential parking permit program (“RPP”) to assist in addressing certain Borough streets, we would advise implementation of a system that accomplishes some or all of the following:

- Mobile License Plate Recognition (“LPR”) enforcement, incorporating vehicle-mounted LPR cameras to enforce on-street metered spaces and RPP compliance in residential areas. Off-street lots may still require a walking PEO, as mobile enforcement is less accurate on lots with aisles and rows of cars.
- Pay-by-Plate multi-space metered parking system, enabling mobile LPR units to enforce on-street meters or RPP parking compliance by scanning license plates while driving at normal speeds.
- Parking App cash-less payment system, allowing parking patrons to pay parking fees by credit card via a parking application such as ParkMobile or Passport. Parking app backend software integrates with enforcement system programs to facilitate efficient violations management.

At this time, the Borough should also consider the development of a simple fixed static sign and wayfinding program. While Walker noted adequate regulatory signage on-street, we observed very little lot designation or wayfinding signage within the Borough identifying and directing drivers to off-street parking facilities. It is also recommended that the Borough develop and adopt branding signage that identifies publicly-owned and/or publicly-available parking facilities through an easily identified logo/branding symbol that includes the universal “P” signage now in place.

While Walker studied options to increase the parking supply by developing a new surface lot, the Borough could also gain additional public parking through shared parking agreements with private property owners. With any shared parking arrangement meant to increase public parking supply, it is critical that the Borough adequately communicate the availability of the parking asset with the public. This includes both web-based communications and on-site signage. The Borough's website should include information about the location of any lots, how many spaces are public, and when the lots are available. Signage should also be provided on-site, clearly identifying what spaces are publicly available and when they are available.

Preliminary Feasibility Analysis

While Walker is projecting an overall surplus of parking within the study area over the next ten years, localized "hot spots" are likely, especially in the downtown district where several redevelopment projects are anticipated. In many cases, adequate on- or off-street public parking is available within a block or two of a major demand generator; in other cases, there may be an underutilized privately-owned parking lot. However, it is also important to consider opportunities to expand the existing parking supply through the development of new surface parking facilities. Working with Columbia, Walker identified several locations where a new public parking facility could be developed, either through the construction of a new lot or the purchase/lease of an existing lot. These options include:

1. Option 1 – 4th and Locust Street Parking Lot

Option 1 is currently a vacant lot owned by the Borough. While it is not wide enough to consider a structured parking solution, Walker sited an approximately 15-space surface lot on the parcel. Due to the loss of on-street metered spaces, the net space gain is 12 or 13 spaces. The dimensions of the proposed lot are 40'-6" wide by 130' long. To maximize the capacity of the lot, Walker's design features one-way traffic flow with angled and parallel spaces; vehicles enter from South 4th Street and exit onto Locust Street.

The estimated order-of-magnitude construction cost per-space is approximately \$10,000, excluding the cost associated with land/building acquisition, environmental remediation that may or may not be needed, utility relocation costs, geotechnical engineering impacts, demolition costs, and other soft costs such as design or financing fees. Based on a 15-space facility, the total estimated construction cost is believed to be approximately \$150,000.

2. Option 2 – Burning Bridges Parking Lot

Based on discussions with Columbia, Walker understands the Borough has studied the potential to develop structured parking on this site several times in recent years. As such, Walker was directed not to prepare a structured solution as part of this feasibility analysis. Rather, Walker focused on a surface parking solution that was limited to the two parcels owned by Burning Bridges Antique Market. To develop this parcel, the Borough would either need to purchase the parcels, or enter into a shared parking agreement with the property owner.

Walker sited an 87' wide by 196' long surface lot with a capacity of approximately 60 spaces on the existing paved lot. The net gain in spaces is approximately 18. The conceptual design features one-way traffic flow in and out of the lot from Walnut Street and a mix of 60°, 90° and parallel parking spaces. A second entry/exit location on 3rd Street, with two-way vehicular traffic, is also assumed.

The estimated order-of-magnitude construction cost per-space is approximately \$5,000, excluding the cost associated with land/building acquisition, environmental remediation that may or may not be needed, utility relocation costs, geotechnical engineering impacts, demolition costs, and other soft costs such as design or financing fees. Based on a 60-space facility, the total estimated construction cost is believed to be approximately \$300,000

3. Option 3 – Our Lady of the Angels School Lot

Based on discussions with the Borough, Walker understands Columbia is not interested in purchasing this property at this time but is open to a shared parking arrangement with the school. Walker prepared two different restriping options that would provide a similar space count to the current parking lot while eliminating the need for double parking.

In Option 3A, Walker rotated the orientation of the lot by 90°, eliminating one of the entry/exit locations along Cherry Street. Walker sited a 150' wide by 189' long lot on the parcel, with two-way traffic flow. The proposed capacity of the lot is approximately 85 spaces. While restriping the lot in this configuration results in a net loss of approximately four (4) spaces, more of the spaces could be accessible to the public if the Borough pursued a shared parking agreement with the School. It is also important to note that Option 3A would not eliminate any on-street parking spaces along Cherry Street.

Walker also considered a second functional layout for Option 3, which maintains the current orientation of the lot, but allows for two-way traffic flow. In Option 3B, the existing curb cuts are reconfigured to create three entry/exit lanes into the lot. The design primarily features 90° angled parking spaces, but also six parallel parking spaces to achieve a total capacity of approximately 88 spaces. Like Option 3A, Option 3B is expected to create a net loss of approximately four spaces, including on- and off-street parking.


The estimated order-of-magnitude construction cost is approximately \$20,000 to \$30,000, excluding the cost associated with land/building acquisition, environmental remediation that may or may not be needed, utility relocation costs, geotechnical engineering impacts, demolition costs, and other soft costs such as design or financing fees. The estimated construction cost includes between \$10,000 and \$15,000 for restriping, and another \$10,000 to \$15,000 for curb cuts.

4. Options 4 – St. Peter Church Parking Lot

The Option 4 site includes several irregularly shaped parcels of land owned by St. Peter Roman Catholic Church. One of the lots has a capacity of approximately 39 spaces, while the other lot contains about 15 spaces. Based on the existing striping in the lot, Walker also assumes vehicles are parked (stacked) in four or five rows during services to maximize the space. While this method maximizes the space for an event, vehicles are essentially locked in until service is over. This style of parking would not be conducive to a public parking setting. After reviewing the dimensions of the parcel, Walker does not believe a more efficient layout could be developed for this property.

Based on discussions with Columbia, Walker understands the Borough is not interested in purchasing this property but would be interested in pursuing a shared parking arrangement with the Church. If such an arrangement was organized, Walker recommends the Borough focus on the 39-space lot.

Each site was evaluated using site selection criteria considerations. To help prioritize the criteria to consider when judging the various sites, we use a matrix analysis. Criteria include items such as capital cost, land availability, net capacity, location/proximity, and public availability. The final determination of the relative attractiveness of the alternative solutions must rest with the Borough of Columbia. However, this site analysis provides a reasonable and supportable look at the criteria upon which to base such a decision. Based on this analysis, Option 1 – 4th and Locust Street Lot was determined to be the highest-ranking solution, followed by the Burning Bridges Lot option.



01 Parking Supply & Demand Analysis

Introduction

Columbia Borough wishes to better understand the current and future factors that affect parking availability for Borough residents, local businesses, and visitors in order to direct available funds obtained through a RACP grant to the most beneficial use for the community. To that end, the Borough contracted with Walker Consultants to study Columbia's existing parking supply and demand, project future parking adequacy based on anticipated development and prepare a preliminary site feasibility study. The report is divided into three sections, including:

- Supply and Demand (Existing and Projected Future)
- Site Feasibility Analysis
- Recommendations of Parking Rates, Time Limits, and Enforcement

Definition of Terms

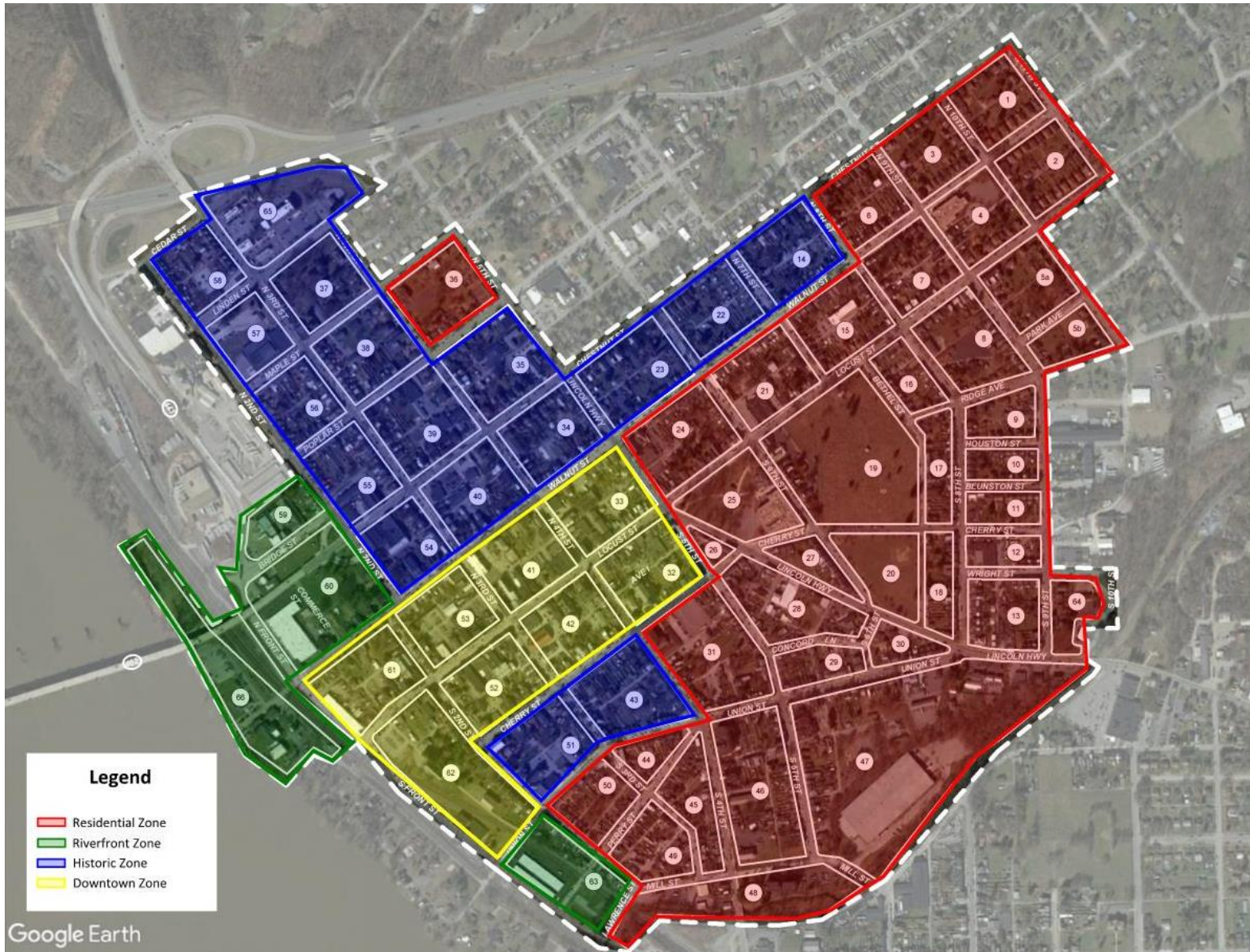
Several terms in this section are parking jargon and may not be readily understood by the reader. Definitions of these terms appear below.

- *Demand* – The number of spaces required to satisfy visitor, employee, and resident needs on a given day.
- *Demand Generator* – Any building, structure, business, or attraction that brings individuals into the study area, thereby increasing parking demand and occupancy.
- *Drive Ratio* – How people travel to a destination, listed as a percentage. Typical travel modes include private automobile, carpool, bus, or walking.
- *Effective or Operational Supply* – The inventory adjusted by the optimum utilization factor.
- *Inventory* – The total number of parking spaces counted during survey day observations within the study area.
- *Occupancy (Counts)* – The number of vehicles observed parked on a survey day.
- *Optimum Utilization Factor/ Effective Supply Factor* – The occupancy rate at which a parking supply operates at peak efficiency. This factor allows patrons to spend less time looking for the last available spaces and allows for the dynamics of vehicles moving in and out of spaces. It also allows for spaces lost to poor or improper parking, snow removal, derelict vehicles, and spaces lost for repair.
- *Parking Adequacy* – The difference between parking supply and demand.
- *Survey Day* – The day that parking occupancy counts were conducted in the study area.

Study Area

The boundaries of the study area were set by Columbia Borough and include approximately 67 blocks. While irregularly shaped, the area is generally bounded by Cedar and Chestnut Streets to the north, the railroad tracks to the south, 11th/10th/9th Streets to the east, and the River and Front Street to the west. Within the study area, the density and type of land use on each block can vary significantly, often resulting in different parking conditions during different times of the day. Walker generally identified four (4) zones within the larger study area – the Downtown Business District, the Historic District, the Riverfront District and the Residential District. The districts are based on the Economic Development Strategies Plan prepared for Columbia in September 2010. A map showing the boundaries of the study area, individual block designations, and zonal designations is shown below.

Figure 1. Study Area Map with Zones



Methodology

The findings of the supply and demand phase of the project are the foundation of the site feasibility study, as well as the parking rate, time limit, and enforcement recommendations. Before we can identify opportunities to develop or improve parking or recommend changes to existing parking policies, we must first have a solid understanding of existing conditions within the study area. Our understanding of existing conditions begins with the project kick-off meeting and key stakeholder interviews. Through these meetings, our goal was to gain a better understanding of the community's parking habits and preferences and identify the obstacles and opportunities for improvement. These qualitative findings are combined with the parking supply and demand data collected during our field survey to develop a comprehensive picture of parking conditions.



PROJECT KICK-OFF



STAKEHOLDER
INTERVIEWS



PARKING SUPPLY
& DEMAND



RECOMMENDATIONS

Using the data collected during the week of December 9th, 2019 Walker established baseline parking conditions for the study area. Parking was inventoried and tabulated by block and categorized as on-street, public off-street, or private off-street for the entire study area. The parking supply was then adjusted to reflect the effective supply, which is slightly less than the actual parking supply. Effective supply is explained in more detail later in the report.

The next step is to determine the parking demand. To do this, we took parking occupancy counts in the study area during a typical weekday and Saturday, resulting in a tabulation of the physical number of vehicles. We took three counts between the hours of 9:00 a.m. and 9:00 p.m. on both survey days. By comparing the supply with the observed occupancy on a block-by-block basis, we were able to determine the occupancy levels and quantify specific parking demand for each block.

Walker next projected parking needs within the Study Area over the next ten years based on known projects identified by the Borough. Parking supply was also adjusted over the planning horizon based on known developments. Again, Walker compared the future parking supply with the project parking demand on a block-by-block basis to determine the occupancy levels and identify any parking shortages. Our findings will be used to inform recommendations related to parking rates, time restrictions, enforcement, and site feasibility.

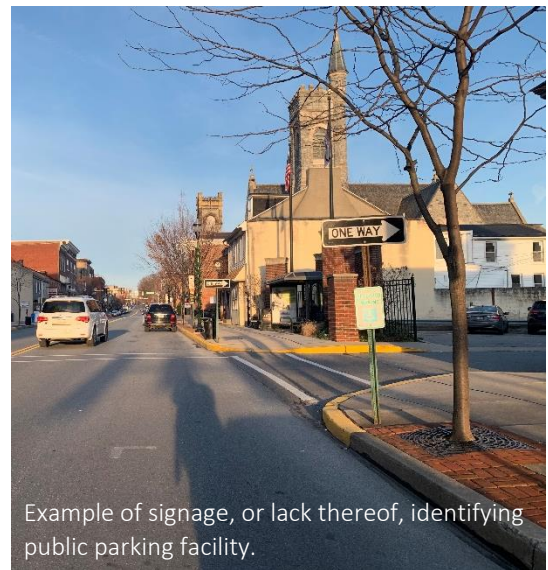
Existing Conditions

This section of the report documents our understanding of the current parking characteristics of the study area. The information contained herein serves as the basis for analysis of the current needs of the study area. Included in this section are discussions of parking supply, effective supply, observed parking occupancy, current parking demand, and the dynamics of the parking system.

Parking Supply

The findings of the supply and demand phase of the project are the foundation of the site feasibility study, as well as the parking rate, time limit, and enforcement recommendations. Before we can identify opportunities to develop or improve parking or recommend changes to existing parking policies, we must first have a solid understanding of existing conditions within the study area. Our understanding of existing conditions begins by quantifying the existing parking supply. Parking in the study area is available in several forms. On-street parking is available as paid, single-space metered spaces or uncontrolled spaces. For the most part, on-street parking is signed, and restrictions are marked. One of the most common signs found on-street related to street maintenance. It is important to maintain on-street parking areas with fresh paint, maintained curbs, working meters, and good signage, as parking is often the first experience for a visitor to the downtown area.

Off-street parking is available in both privately-owned surface lots reserved for a specific business or tenant and public surface lots. Public off-street parking facilities included both municipally-owned facilities and publicly-available facilities. Publicly available refers to lots that are privately-owned, but commercially operated, or other lots available to the public but not municipally-owned. Observations indicated that most businesses offer free parking to their visitors and/or tenants. Only two municipally-owned lots are metered; these are the lot adjacent to the Borough offices (Block 42) and the lot off Avenue H between 3rd and 2nd Streets (Block 53). Most publicly-owned/available parking was not well signed.



Based on the data walker collected, there are approximately 6,454 spaces in the study area. These spaces can be further categorized as 3,637 on-street spaces, 449 public off-street spaces, and 2,367 private off-street spaces. Note, Walker’s observation of available parking capacity does not generally include lots with less than four (4) spaces or residential parking in private driveways or behind houses. Additionally, the public off-street parking includes the grass overflow lot adjacent to the riverfront.

The figure below shows the breakdown of the parking supply by type as well as zone. On-street parking accounts for nearly 58% of the parking supply within the study area. Additionally, the public-off street capacity includes a large unstriped grass lot in the Riverfront Zone.

Figure 2. Current Parking Supply

Zone	On-Street	Public Off-Street	Public Subtotal	Private	Total
Downtown	459	90	549	573	1,122
Historic	1,007	8	1,015	739	1,754
Residential	2,042	16	2,058	989	3,047
Riverfront	129	335	464	66	400
Total	3,637	449	4,086	2,367	6,543

Source: Walker Consultants, 2020

Informal Parking Supply

As noted previously, Walker’s analysis of the existing parking supply does not typically include lots with less than four (4) spaces or residential “driveways”; however, the Study Area included a large number of residential blocks with parking located behind a private residence. While Walker did not collect data for every residential property in the Study Area, we did identify areas on blocks where multiple residential “driveways” created a notable supply. In total, Walker observed approximately 399 spaces. The table below shows the informal parking supply by zone within the study area.

Figure 3. Informal Parking Supply

Zone	Informal Capacity
Downtown	99
Historic	136
Residential	164
Riverfront	0
Total	399

Source: Walker Consultants, 2020

Effective Supply/Operational Capacity

The inventory of parking within the Study Area is adjusted to allow for a cushion necessary for vehicles moving in and out of spaces, and to reduce the time necessary to find the last few remaining spaces when the parking supply is nearly full. We derive the effective supply by deducting this cushion from the total parking capacity. The cushion allows for vacancies created by restricting parking spaces to certain users (reserved spaces), mis-parked vehicles, minor construction and debris removal. A parking supply operates at peak efficiency when parking occupancy, including both transient and monthly parking patrons, is 85 percent to 95 percent of the supply. When occupancy exceeds this level, patrons may experience delays and frustration while searching for a space. Therefore, the parking supply may be perceived as inadequate even though there are some spaces available in the parking system.

As a result, the effective or operational capacity is used in analyzing the adequacy of the parking system rather than the total supply or inventory of spaces. Following are some factors that affect the efficiency of the parking system:

1. Capacity

Large, scattered surface lots operate less efficiently than a more compact facility, such as a parking structure, which offers consolidated parking in which traffic generally, passes more available parking spaces in a more compact area. Moreover, it is more difficult to find the available spaces in a widespread parking area than a centralized parking facility.

2. Type of Users

Monthly or regular parking patrons can find the available spaces more efficiently than infrequent visitors because they are familiar with the layout of the parking facility and typically know where the spaces will be available when they are parking.

3. On-Street vs. Off-Street

On-street parking spaces are less efficient than off-street spaces due to the time it takes patrons to find the last few vacant spaces. In addition, patrons are typically limited to one side of the street at a time and often must parallel park in traffic to use the space. Many times, on-street spaces are not striped or are signed in a confusing manner, thereby leading to lost spaces and frustrated parking patrons.

The size of the cushion is dependent on the type of user and facility. On-street parking is adjusted by an 85 percent effective supply factor (ESF), because of the relative difficulty of finding an open space while negotiating traffic. Public off-street parking is adjusted by a 90 percent ESF to account for user unfamiliarity and the challenges of safely navigating the area while searching for a space. Private off-street parking is adjusted by a 95 percent ESF because employees or repeat users are familiar with the area and generally park in the same location each day. The study area contains a total of 6,453± spaces before any adjustments are made to account for an effective supply. After the effective supply factor is applied to the overall supply numbers, the study area’s effective supply is 5,755± spaces, as shown in the figure below.

Figure 4. Effective Parking Supply

Zone	On-Street	Public Off-Street	Public Subtotal	Private	Total
Downtown	391	81	472	544	1,016
Historic	859	7	866	703	1,569
Residential	1,739	14	1,753	942	2,695
Riverfront	110	302	412	63	475
Total	3,099	404	3,503	2,252	5,755

Source: Walker Consultants, 2020

Weekday Conditions

Parking Occupancy

To determine the parking patterns in the study area, Walker observed parking occupancy rates at most parking facilities in the study area parking facilities on a weekday. An understanding of these parking patterns helps define both patron types and parking locations. Weekday occupancy counts were taken for on- and off-street parking spaces on at 10:00 a.m., 2:00 p.m. and 8:00 p.m. on Thursday, December 12th, 2019.

Figure 5 on the following page summarizes the total observed parking occupancy by zone. Peak parking occupancy was observed during the evening count (8:00 p.m.) with approximately 42% of the available supply utilized.

Figure 5. Weekday Parking Occupancy Summary

Zone	Supply	Weekday Occupancy			% Occupied		
		10:00 AM	2:00 PM	8:00 PM	10:00 AM	2:00 PM	8:00 PM
Downtown	1,122	426	439	430	38%	39%	38%
Historic	1,754	624	604	817	36%	34%	47%
Residential	3,047	1,209	1,128	1,428	40%	37%	47%
Riverfront	530	72	76	44	14%	14%	8%
Total	6,453	2,331	2,247	2,719	36%	35%	42%

Source: Walker Consultants, 2020

During the peak hour of 8:00 p.m., private off-street facilities were approximately 25% occupied, while public off-street facilities were only 5% occupied. Within the study area, on-street parking was 58% utilized; however, in both the Residential and Historic Zones, occupancy levels were at or above the overall average.

Figure 6. Peak Weekday Occupancy by Type

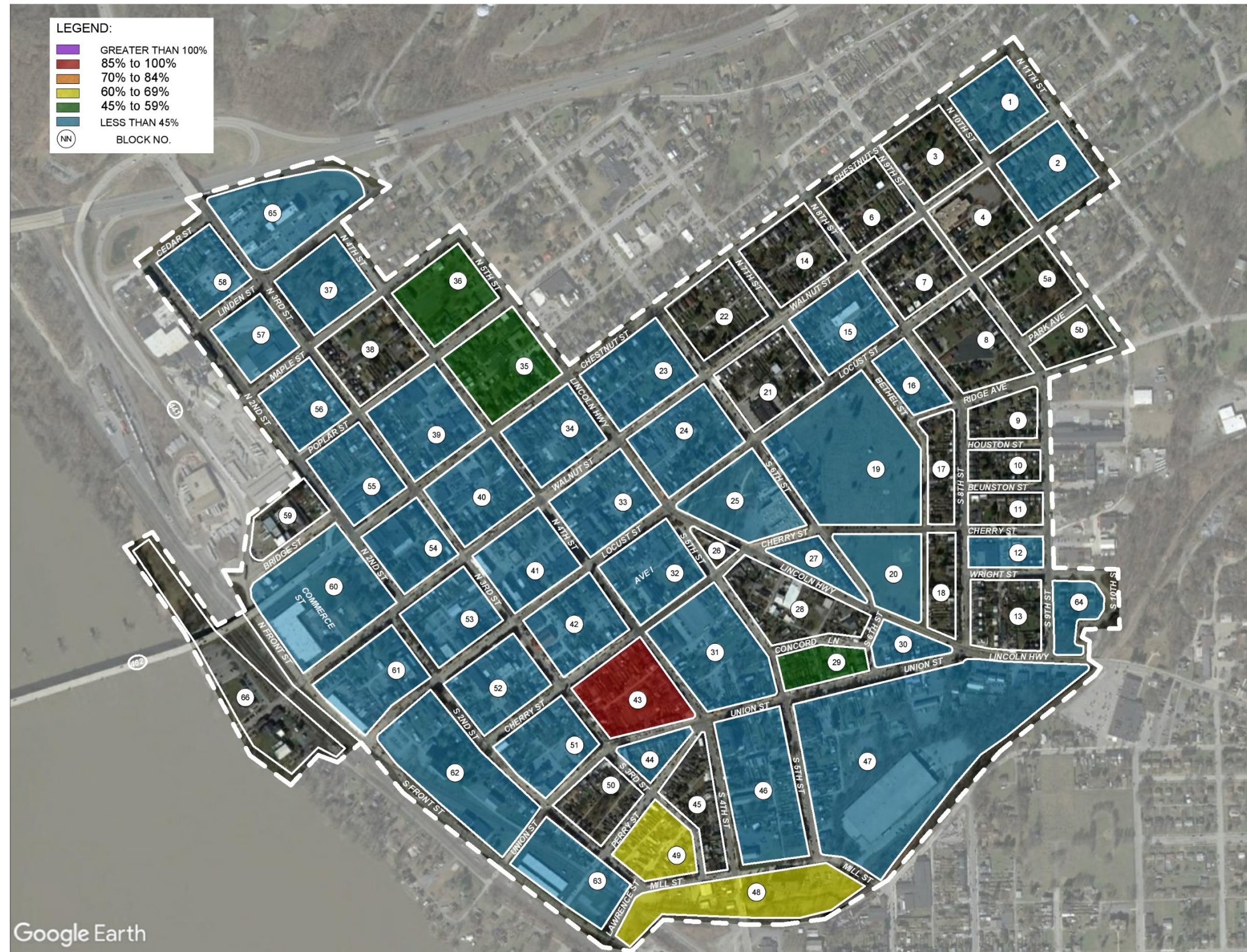
Zone	Private Off-Street Parking			Public Off-Street Parking			On-Street Parking		
	Supply	Occupancy	% Occupied	Supply	Occupancy	% Occupied	Supply	Occupancy	% Occupied
Downtown	573	161	28%	90	11	12%	459	258	56%
Historic	739	179	24%	8	0	0%	1,007	638	63%
Residential	989	247	25%	16	0	0%	2,042	1,181	58%
Riverfront	66	1	2%	335	12	4%	129	31	24%
Total	2,367	588	25%	449	23	5%	3,637	2,108	58%

Source: Walker Consultants, 2020

Current occupancy rates, as a whole, do not indicate a shortage of parking; however, there are a few “hot spots” of activity where occupancy rates on a specific block/lot or for a specific category of parking exceeded 85 percent of capacity. There were also a few streets where occupancy exceeded 100% of capacity. When occupancy exceeds this level, patrons may experience delays and frustration while searching for a space. Therefore, the parking supply may be perceived as inadequate even though there are some spaces available in the parking system.

The figures on the following pages illustrate the peak parking occupancy by block or block face for the public and private parking supplies. Color coding is used to show the current occupancy of the entire study area. Those blocks in red or purple are experiencing parking occupancy issues, with occupancy at or greater than 85%.

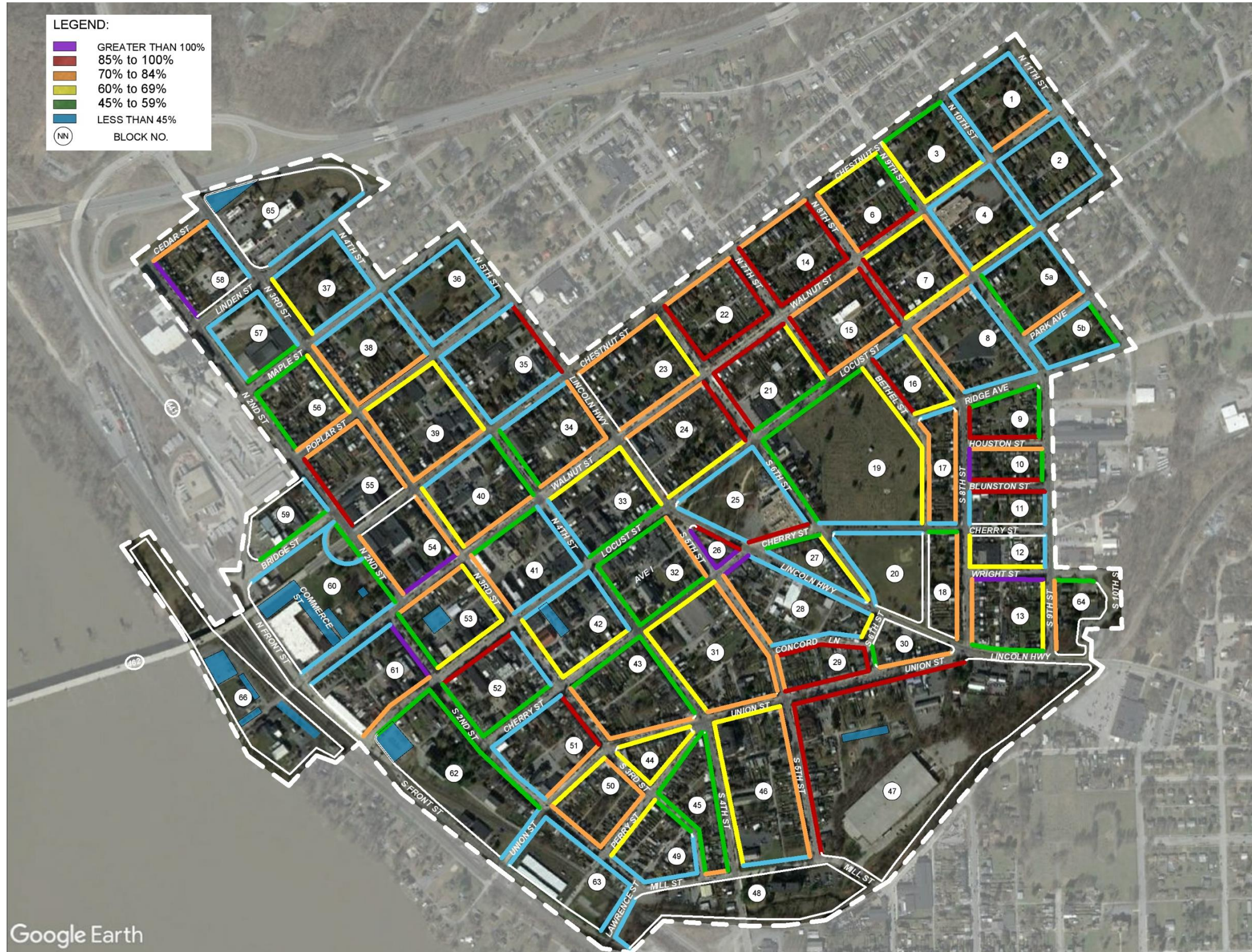
Figure 7. Weekday Peak Private Parking Occupancy



Private Off-Street Parking Observations at 8:00 p.m.

- Generally, private off-street parking occupancy rates did not exceed 45% of capacity during the evening count.
- Only three (3) blocks experienced occupancy rates above 60% occupancy. Residential parking lots were observed on these blocks, likely contributing to the increased activity.
- Occupancy rates at these levels do not indicate an overall shortage of parking in the area.
- The Borough may want to consider pursuing shared parking agreements with businesses with unused private off-street parking supply in the evening to increase the available parking supply for residents, many of which only have access to on-street parking.

Figure 8. Weekday Peak Public Parking Occupancy



Public Parking Observations at 8:00 p.m.

- While occupancy varied from block to block and hour to hour within the study area, on-street parking consistently experienced the highest levels of activity.
- Overall, on-street parking was 58% occupied during the 8:00 p.m. count; however, several block faces within the study area experienced occupancy rates at or above 85% capacity. Additionally, Walker observed several block faces where parking demand exceeded capacity during the peak hour.
- Some of the highest levels of activity were observed on blocks between 6th and 8th Streets and Chestnut and Locust Streets. These blocks include dense residential housing.
- Other areas of high on-street parking occupancy include Union Street between 5th and Lincoln Highway and the intersection of 5th and Cherry Street.
- Walker observed occupancy rates of 45% or less at all the publicly available or municipally-owned parking lots in the study zone.
- Note, most of the public off-street parking is located on the west/ southwest side of town, while many of the block faces with the highest occupancy rates are located on the north/northeast side of town.

Google Earth

Parking Adequacy

Parking adequacy is the ability of a parking system to accommodate the parking demand. Walker compared the effective parking supply to the observed parking demand in Columbia to determine the operational surplus or deficit (adequacy). Overall, parking in Columbia is adequate to support demand. This does not mean that small parking “hot spots” on some blocks within the downtown do not exist. However, adequate parking is available within one or two blocks of any intermittent shortfalls.

Figure 9. Weekday Peak Parking Adequacy

Zone	Private Off-Street Parking			Public Off-Street Parking			On-Street Parking		
	Eff. Supply	Occupancy	Adequacy	Eff. Supply	Occupancy	Adequacy	Eff. Supply	Occupancy	Adequacy
Downtown	544	161	383	81	11	70	391	258	133
Historic	703	179	524	7	0	7	859	638	221
Residential	942	247	695	14	0	14	1,739	1181	558
Riverfront	63	1	62	302	12	290	110	31	79
Total	2,252	588	1,664	404	23	381	3,099	2,108	991

Source: Walker Consultants, 2020

System-wide there was an operational surplus of approximately 991 spaces on a weekday during the peak hour of our survey. There were no off-street facilities with a parking shortage during the peak hour; however, approximately 28 **block faces** experienced a parking shortage of one to three spaces. These localized shortages were primarily found on residential streets, in particular around:

- the intersection of Walnut and 7th Streets (shortage of approximately 10 spaces),
- the area between Ridge Avenue, Wright Street, 8th Street, and 9th Street (shortage of approximately 10 spaces), and
- the area between Lincoln Highway, 5th Street, and Union Street (shortage of approximately 10-12 spaces).

It is important to note that while one or two block faces may have experienced a localized shortage, adequate parking was available, usually on the same block or within one block on the observed shortages.

Weekend Conditions

Parking Occupancy

Walker also observed parking occupancy rates at most parking facilities in the study area on a Saturday to better understand weekend parking patterns. On- and off-street parking data was collected at 10:00 a.m., 2:00 p.m. and 8:00 p.m. on Saturday December 14th, 2019.

The figure below shows the overall parking occupancy throughout the survey day in each zone in the study area. While the overall parking occupancy rate remained at 42% throughout the day, occupancy rates within the four zones and on individual blocks varied throughout the day. Additionally, parking activity during the morning and afternoon counts during the weekend survey were higher than the weekday survey. The overall evening occupancy rates were nearly identical on both survey days.

Figure 10. Weekend Parking Occupancy Summary

Zone	Supply	Weekend Occupancy			% Occupied		
		10:00 AM	2:00 PM	8:00 PM	10:00 AM	2:00 PM	8:00 PM
Downtown	1,122	498	516	432	44%	46%	39%
Historic	1,754	743	800	816	42%	46%	47%
Residential	3,047	1,371	1,336	1,443	45%	44%	47%
Riverfront	530	83	70	39	16%	13%	7%
Total	6,453	2,695	2,722	2,730	42%	42%	42%

Source: Walker Consultants, 2020

A more detailed breakdown of the Saturday peak hour occupancy rates by parking type is shown in the figure below. Like weekday conditions, peak parking demand during the Saturday survey was observed during the 8:00 p.m. occupancy count. On-street parking was significantly more utilized than public or private off-street parking throughout the study area. Overall occupancy rates, as a whole, do not indicate a parking shortage; however, there are a few “hot spots” of activity where occupancy rates on a specific block/lot or for a specific category of parking exceeded 85 percent of capacity.

Figure 11. Peak Weekday Occupancy by Type

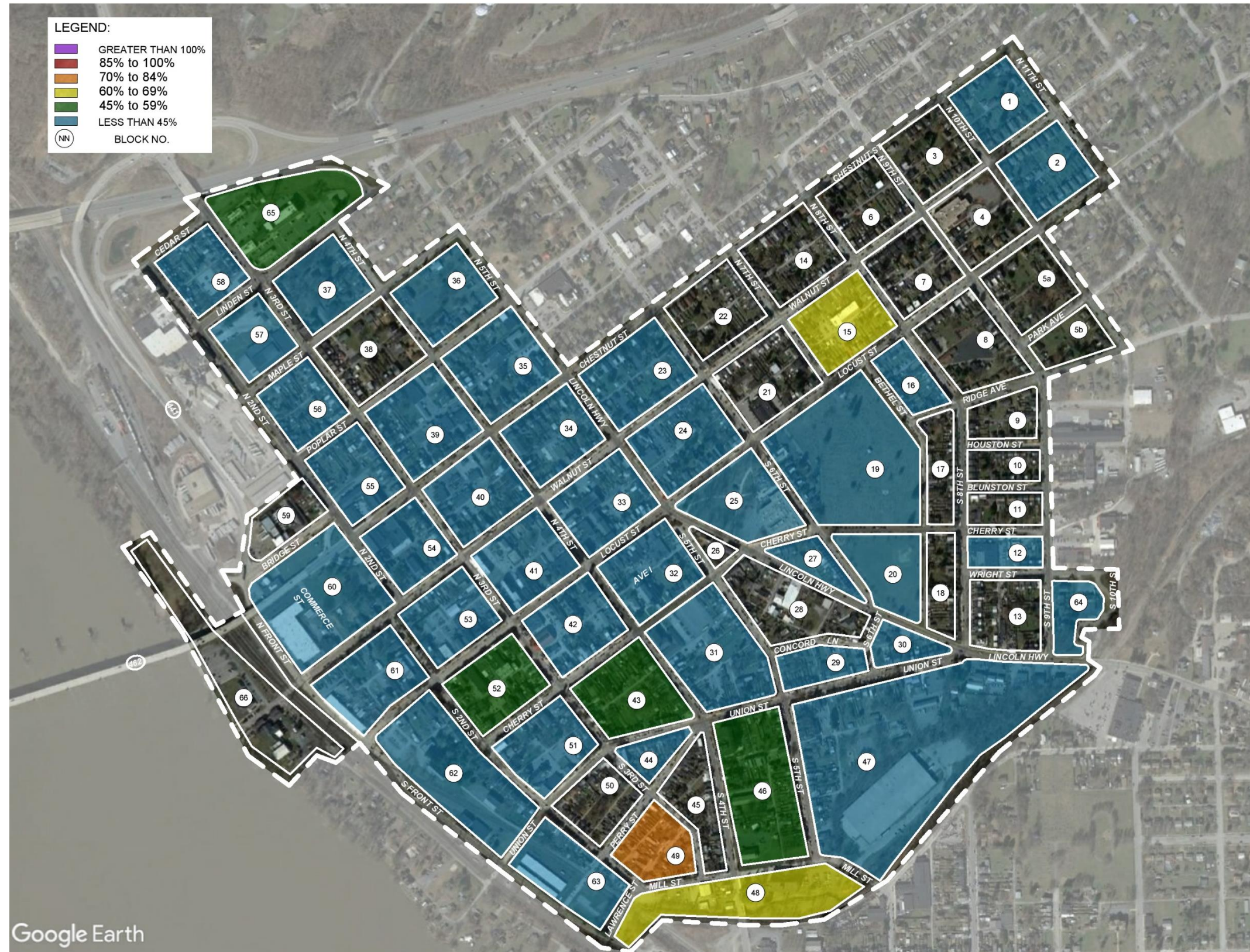
Zone	Private Off-Street Parking			Public Off-Street Parking			On-Street Parking		
	Supply	Occupancy	% Occupied	Supply	Occupancy	% Occupied	Supply	Occupancy	% Occupied
Downtown	573	149	26%	90	18	20%	459	265	58%
Historic	739	174	24%	8	0	0%	1,007	642	64%
Residential	989	260	26%	16	2	13%	2,042	1,181	58%
Riverfront	66	1	2%	335	7	2%	129	31	24%
Total	2,367	584	25%	449	27	6%	3,637	2,119	58%

Source: Walker Consultants, 2020

As stated earlier, when occupancy exceeds this level, patrons may experience delays and frustration while searching for a space. Therefore, the parking supply may be perceived as inadequate even though there are some spaces available in the parking system

The figures on the following pages illustrate the peak parking occupancy by block or block face for the public and private parking supplies. Color coding is used to show the current occupancy of the entire study area. Those blocks in red or purple are experiencing parking occupancy issues, with occupancy at or greater than 85%.

Figure 12. Weekend Peak Private Parking Occupancy



Private Off-Street Parking Observations at 8:00 p.m.

- Like the weekday observations, private off-street parking occupancy rates during the Saturday survey did not exceed 45% of capacity during the evening count on most blocks.
- The occupancy rates on Blocks 48 and 49 were above 60% of capacity during both the weekday and Saturday surveys; however, Walker did not observe occupancy rate at or near capacity.
- Occupancy rates at these levels do not indicate an overall shortage of parking in the area.
- As stated previously, the Borough may want to consider pursuing shared parking agreements with businesses with unused private off-street parking supply in the evening to increase the available parking supply for residents, many of which only have access to on-street parking.

Figure 13. Weekend Peak Public Parking Occupancy



Public Parking Observations at 8:00 p.m.

- While occupancy varied from block to block and hour to hour within the study area, on-street parking consistently experienced the highest levels of activity.
- Overall, on-street parking was 58% occupied during the 8:00 p.m. count; however, several block faces within the study area experienced occupancy rates at or above 85% capacity. Additionally, Walker observed 10 block faces where parking demand exceeded capacity during the peak hour.
- The highest levels of on-street activity were observed in the north/northeast region of the study area, specifically along Houston, Wright, Bethel, Union and 5th Streets. Most of these streets support dense residential development.
- Walker observed occupancy rates of 45% or less at all the publicly-available or municipally-owned parking lots in the study zone.

Google Earth

Parking Adequacy

Parking adequacy is the ability of a parking system to accommodate the parking demand. Walker compared the effective parking supply to the observed parking demand in Columbia to determine the operational surplus or deficit (adequacy). Overall, parking in Columbia is adequate to support demand. This does not mean that small parking “hot spots” on some blocks within the downtown do not exist. However, adequate parking is available within one or two blocks of any intermittent shortfalls.

Figure 14. Weekend Peak Parking Adequacy

Zone	Private Off-Street Parking			Public Off-Street Parking			On-Street Parking		
	Eff. Supply	Occupancy	Adequacy	Eff. Supply	Occupancy	Adequacy	Eff. Supply	Occupancy	Adequacy
Downtown	544	149	395	81	18	63	391	265	126
Historic	703	174	529	7	0	7	859	642	217
Residential	942	260	682	14	2	12	1,739	1181	558
Riverfront	63	1	62	302	7	295	110	31	79
Total	2,252	584	1,668	404	27	377	3,099	2,119	980

Source: Walker Consultants, 2020

System-wide there was an operational surplus of approximately 980 spaces on a Saturday during the peak hour of our survey. Like weekday conditions, most localized parking shortages occurred on-street. Walker observed 31 block faces where small deficits occurred, usually between one and four spaces. Again, despite the localized shortages, adequate parking was typically available one the same block or within one block on the observed shortages.

The areas most impacted by the on-street shortages are shown in the figures below. Two of the neighborhoods also experienced deficits during weekday peak conditions. The first image highlights the area along Walnut between Lincoln Highway and 2nd Street. While there is adequate parking within walking distance, Walker noted an approximate 14-space shortage was observed in the area. It is also interesting to note that while the on-street capacity is at or above capacity, the all the public off-street facilities have surplus capacity.



The size of the localized shortages in the middle and righthand images increased on the weekend. Each neighborhood experienced deficits ranging from 15-20 spaces. As noted above, while certain streets in these neighborhoods realized shortages, adequate parking was available within the immediate area to support overflow.

Based on discussions with stakeholders during the project kick-off, Walker understands the number of vehicles associated with each residence has increased over the years. The increasing number of vehicles, combined with the density on some streets, and a desire to park in the space immediately in front of their residence, may be creating the perception of localized shortages. Walker discusses different options to mitigate this effect in the next section.

Design Conditions

Weekday Projections

Walker recognizes that activity within the Borough varies throughout the year due to seasonal fluctuations associated with recreational tourism. While occupancy rates within the downtown during our survey day did not indicate an overall parking shortage, anecdotal evidence suggests parking occupancy rates increase in several of the public parking facilities closest to the Riverfront during the summer, decreasing the surplus off-street capacity. Additionally, increased demand due to recreational tourism could potentially shift the overall peak parking occupancy from the evening to the afternoon. We recommend the Borough observe parking occupancy in the public parking lots during a typical busy day or days during the summer to better quantify the adequacy of the existing public parking system to support parking demand.

For planning purposes only, and based on anecdotal evidence, Walker adjusted the on- and off-street occupancy rates to model a typical busy weekday during the spring or summer months. Increases in the public off-street lots varied between 50% and 100% of survey day observations, except for the public lots on Block 66. We assumed most of the riverfront lots (Block 66) would experience moderately high occupancy rates except for the grass overflow lot. As a result of increased activity at the riverfront, Walker also assumed overall activity within the study area was elevated. Private off-street occupancy and on-street occupancy rates were increased by 20%.

The table below summarizes design day conditions during a typically busy weekday in the late spring or summer season.

Figure 15. Weekday Design Conditions – 2:00 p.m.

Zone	Private Off-Street Parking			Public Off-Street Parking			On-Street Parking		
	Supply	Occupancy	% Occupied	Supply	Occupancy	% Occupied	Supply	Occupancy	% Occupied
Downtown	573	265	46%	90	31	34%	459	238	52%
Historic	739	220	30%	8	6	75%	1,007	500	50%
Residential	989	391	40%	16	10	63%	2,042	961	47%
Riverfront	66	24	36%	335	90	27%	129	37	29%
Total	2,367	900	38%	449	137	31%	3,637	1,736	48%

Source: Walker Consultants, 2020

While overall occupancy rates do not suggest a parking deficit, localized “hot spots” are likely, particularly along the riverfront. It is important to note that the public off-street parking supply includes the grass overflow lot. Without this lot, the overall public off-street occupancy rate is expected to be approximately 43%.

Saturday Projections

Like weekday conditions, anecdotal evidence suggests that activity within the study area increases during the late spring and summer months when recreational and tourist activity is high. Walker modeled these conditions by increasing the occupancy rates observed during the December field survey. The table below shows the projected design day parking demand during a typical Saturday in the summer.

Figure 16. Saturday Design Conditions – 2:00 p.m.

Zone	Private Off-Street Parking			Public Off-Street Parking			On-Street Parking		
	Supply	Occupancy	% Occupied	Supply	Occupancy	% Occupied	Supply	Occupancy	% Occupied
Downtown	573	237	41%	90	46	51%	459	307	67%
Historic	739	258	35%	8	0	0%	1,007	624	62%
Residential	989	285	29%	16	10	63%	2,042	1,189	58%
Riverfront	66	8	12%	335	158	47%	129	42	33%
Total	2,367	788	33%	449	214	48%	3,637	2,162	59%

Source: Walker Consultants, 2020

One significant difference between our observations in December and the projected design day parking demand is the parking activity in the public lots nearest the riverfront; this includes the lots on Blocks 53, 60 and 66. Public off-street parking occupancy is expected to be approximately 48% utilized during the 2:00 p.m. peak; however it is important to note that the public off-street parking supply includes the grass overflow lot. Without this lot, the overall public off-street occupancy rate is expected to be approximately 65%.

While overall occupancy rates would not suggest a parking deficit during design conditions, localized shortages are projected.

Future Conditions

In order to project future demand conditions within the study area, Walker obtained proposed land use information from the Borough, modeled future parking demand associated with these land uses, and overlaid this information with current parking demand conditions during the 2:00 p.m. count to obtain a conceptual projection of future parking demand in the study area. Specifically, Walker analyzed demand for three-year, five-year, and ten-year planning horizons. Additionally, Walker applied a 1% annual growth factor to the on-street and public off-street parking demand to account for general growth in the area. The analysis was performed for both the survey day and the design day.

Proposed Future Development

The table below provides a list of the proposed future developments that were identified through discussions with the Borough and included in the analysis. Any changes in the parking supply associated with these planned developments was also noted. For planning purposes, Walker’s future scenario assumes full building out of the development projects identified within a 10-year planning horizon.

Figure 17. Proposed Developments

Block	Name/Address	Land Use	Quantity	Parking Gained	Parking Lost
61	Chip Factory Hotel	Hotel	88 Keys	77	(9)
52	Starview Brews	Brewery	4,700 Square Feet	0	
33	Cimarron Business Center	Office	24,000 Square Feet	31	(22)
		MOB	12,000 Square Feet		
42	350 Locust Street	Retail	1,800 Square Feet	12	
		Residential	3 Dwelling Units		
59	155 Bridge Street/ Lancaster Container/ Bootleg Antiques	Retail	4,000 Square Feet	0	
41	Hotel Locust	Residential	30 Dwelling Units	30	
33	St. John Neuman Daycare	Daycare	16,500 Square Feet	12	
42	Retail Redevelopment	Retail	8,540 Square Feet	0	
42	CHI Market House	Food Hall	8,000 Square Feet	0	

Source: Columbia Borough, 2019

While not part of the formal parking capacity shown in the figure above, Walker did note a few lots on the interior of Block 61 that will be displaced by the Chip Factory Hotel project. This includes a small lot used for residential parking. It is unknown if these vehicles will be permitted to park in the Chip Factory Hotel lot, or if they will park on-street.

Future Demand Modeling

In order to model for future parking demand, Walker utilized Shared Parking methodology to project approximate parking demand for each proposed development project in the study area. The shared parking analysis and corresponding conclusions presented below are based on recommendations and data presented by the Urban Land Institute (ULI), the Institute of Traffic Engineers (ITE), the International Council of Shopping Centers (ICSC), and specifically ULI's shared parking methodology, using ITE- and ULI-supplied data as presented in *Shared Parking*, as well as Walker's experience in similar municipalities.

The shared parking methodology was developed in the 1980s and has been a widely-accepted industry standard for rightsizing parking facilities over the past 30+ years. Adopted by municipalities and developers throughout the United States, and codified in zoning ordinances as acceptable practice, shared parking is endorsed by the ULI, the ICSC, the American Planning Association (APA), and the National Parking Association (NPA), as an acceptable method of parking planning and management. Shared parking allows for the sharing of parking spaces among uses in a mixed-use environment in lieu of providing a minimum number of parking spaces for each individual land use. Shared parking commonly results in a reduction of required parking spaces. This reduction, which can be significant, depends on the quantities and mix of uses and local code requirements.

Shared parking is defined as the ability to use the same parking resource by multiple nearby or adjacent land uses without encroachment. The basic premise is that in a mixed-use area, the combination of land uses will usually result in less parking being needed than would be the case if those same land uses were all stand-alone developments building to their individual peak needs. The reason for the reduction is two-fold:

- Different types of land uses have different usage patterns. If an office (active during the day on weekdays) needs 200 spaces and a cinema (busy during the evening and on weekends) needs 200 spaces, they don't need 400 spaces if they are near each other because they will never be full simultaneously.
- Land uses that benefit from a "captive market" of people already parked in the area who create demand for the land uses without creating parking demand. For example, a sandwich shop located in an office tower generates very little, if any, parking demand even if it's crowded, since its customers are employees in the building who are already parked for the day.

Shared parking considers the parking demand for more than 45 different land uses; the availability and use of alternative modes of transportation; captive market effects; and daily, hourly, and seasonal variations. In the case of the developments proposed for the Borough of Columbia, the shared parking analysis recognizes the interrelationship of parking among retail, food and beverage, residential, and office land uses.

A shared parking analysis begins first by taking the land use quantities of a development, e.g. number of residential dwelling units, and multiplying by a base demand ratio. Base parking demand ratios, as found in the ULI Shared Parking model and in some cases refined through additional research by Walker, are used as a starting point in the analysis. Based on research on the parking generation rates for free-standing developments, these industry standards are later adjusted to reflect site-specific conditions.

The base ratios are next adjusted to account for time of daily and seasonality. It is expressed as a percentage of potential demand modified for time of day and time of year. The parking demand for each land use may peak at different times, which generally means that fewer parking spaces are needed for the combination of land uses in a project than would be required if each land use were considered separately.

Walker also applies two additional adjustments to the base parking demand ratios; one to reflect an estimate of the local transportation modal split (called the drive ratio) and another to account for the best estimate of captive market effects (called the non-captive ratio). The following graphic provides an illustrative view of the steps involved in the shared parking analysis.

Land Use Units (Number of rooms, square footage, etc.)	X	Standard or Base Parking Generation Ratio	X	Hourly Factor	X	Seasonal Factor	X	Driving Ratio	X	Non-Captive Ratio	=	TOTAL
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The key goal of a shared parking analysis is to find the balance between providing adequate parking to support a development from a commercial and operational standpoint and protect the interests of neighboring property owners, while minimizing the negative aspects of excessive land area or resources devoted to parking. The ultimate goal of a shared parking analysis is to find a reasonably predictable, peak period worst case scenario, or design day condition.

Allowing multiple land uses and entities to share parking spaces has allowed for and led to the creation of many popular real estate developments and areas, resulting in the combination of office, residential, retail, hotel, and entertainment districts that rely heavily on shared parking for economic viability while providing parking accommodations to meet the actual demand generated by the development. Traditional downtowns in large and small cities alike have depended on the practice in order to be compact, walkable, and economically viable.

Figure 18 illustrates the base parking demand ratios Walker utilized when projecting future demand in the study area. While most of the base demand ratios were taken from the Urban Land Institute, Walker did adjust some land uses for site specific conditions. For example, Walker compared the square footage of the existing medical office space occupied by Family First Health to the observed parking demand to determine the medical office ratio for the proposed space.

Figure 18. Base Parking Demand Ratios

Land Use	Unit	Weekday Ratio	Weekend Ratio
Retail	Spaces/1,000 SF	3.6	4
Fine/Casual Restaurant	Spaces/1,000 SF	9.2	10.2
Hotel	Spaces/Key	1.15	1.15
Office	Spaces/1,000 SF	3	0.35
Medical Office	Spaces/1,000 SF	3.2	0
Residential	Spaces/Dwelling Unit	1.1	1.1
Daycare	Spaces/1,000 SF	3.74	3.74
Grocery	Spaces/1,000 SF	4.75	4.75

Source: Columbia Borough, 2020

The base parking demand ratios were further adjusted to model parking needs in December around 2:00 p.m. Again, it is important to note that the mix of proposed land uses is expected to shift peak conditions from the evening to the afternoon.

Future Weekday Demand

Based on discussion with the Borough, Walker understands that most of the known development projects identified in Figure 17 above are expected to be completed within the next year. However, the hotel locust redevelopment and the 332-336 Locust Street redevelopment projects are not expected to be complete until 2025.

Figure 19: Future Weekday Parking Occupancy – Survey Day

Zone	Private Off-Street Parking				Public Off-Street Parking				On-Street Parking			
	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years
Downtown	38%	58%	61%	61%	22%	43%	44%	46%	43%	45%	45%	48%
Historic	25%	25%	25%	25%	50%	50%	50%	50%	41%	43%	43%	46%
Residential	33%	33%	33%	33%	0%	0%	0%	0%	39%	40%	41%	43%
Riverfront	30%	44%	44%	44%	7%	7%	8%	8%	24%	25%	25%	27%
Total	32%	38%	38%	38%	11%	15%	16%	16%	40%	41%	42%	44%

Source: Walker Consultants, 2020

The figure above summarizes the occupancy rates by zone for public and private off-street parking, as well as on-street parking over the next ten years. Overall, occupancy rates do not suggest a parking shortage within the next ten years. This is not to say that localized “hot spots” will not exist on specific blocks during specific times of the day or for a specific types of parking space; however, surplus parking capacity is usually available within one or two blocks of the deficit.

Within three years, parking shortages are projected to occur on several blocks, including:

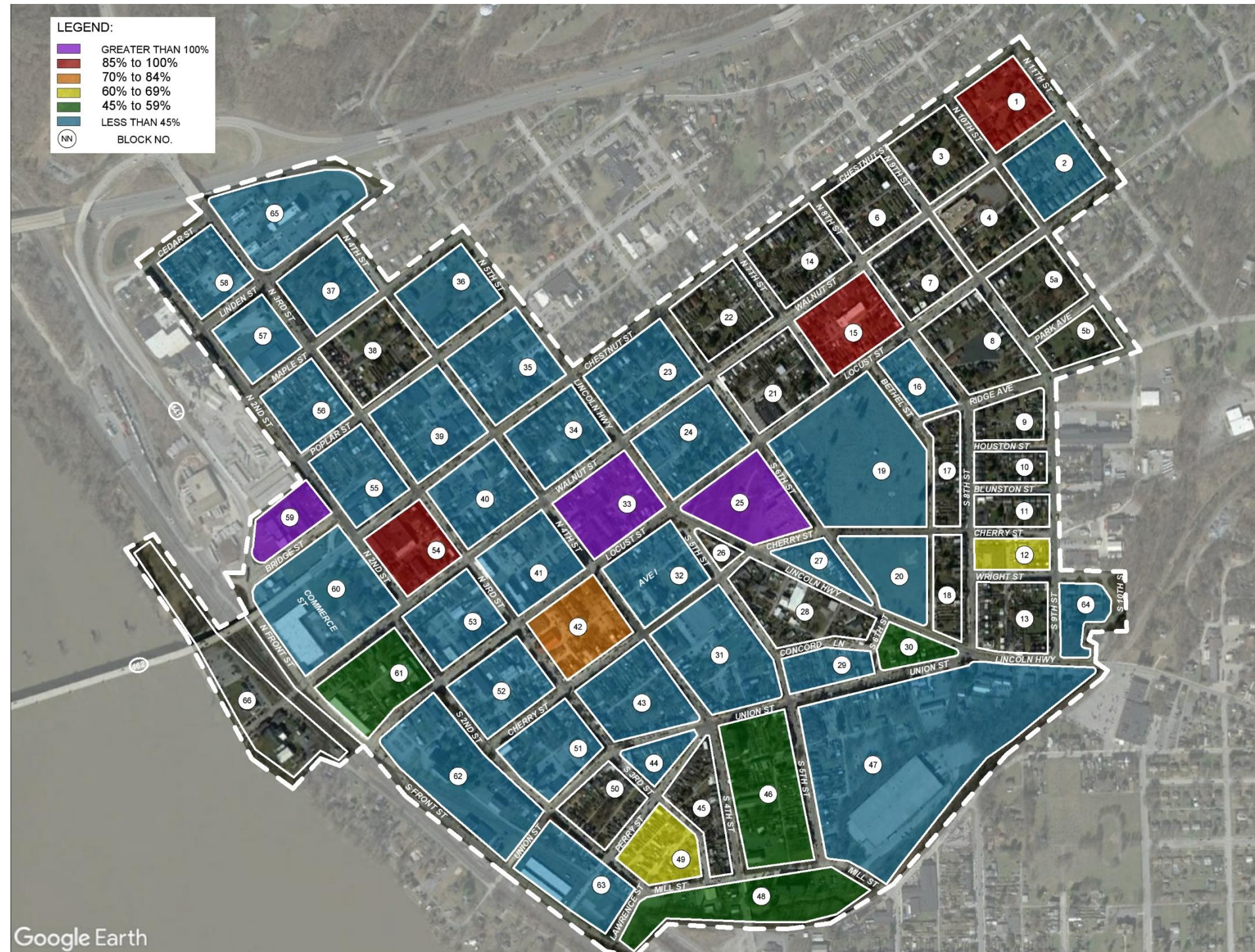
- Block 33, where a new office/medical office building, as well as a new daycare center are currently in construction. While off-site parking for employees at a nearby church parking lot has been arranged, demand is expected to exceed capacity during the peak hour. Without relocating employees, a deficit of approximately 50 spaces is projected for this block.
- Block 42, where the CHI Market House is expected to open late 2020. The project will be built without any additional parking, putting pressure on the adjacent public parking lot. During peak conditions, a deficit of approximately 15 spaces is projected.
- Additional retail space is projected to open on Block 59, increasing parking demand on block by approximately 10 spaces. While there is no on-site parking to support Bootleg Antiques, a large public lot is located across Chestnut Street. Walker recommends the Borough consider a pedestrian walkway from the River Trail/Commerce Street Lot to Bridge Street.
- Potential shortages are also projected on Blocks 1, 15, 25, and 54 due to general growth in the area.
- Due to general growth in the area, certain streets on Blocks 13, 26, 53, 54, and 59 may also experience small deficits (approximately one-three spaces on individual block faces).

Over the five-year planning horizon, two additional development projects are projected to come online. While the Hotel Locust redevelopment is expected to provide additional on-site parking to meet demand, the projected parking deficit on Block 42 is expected to increase due to redevelopment along Locust Street. Several more on-street locations are also projected to experience small (one -three space) parking deficits due to overall growth in the study area, including streets on Blocks 10, 11, and 14. Again, it is important to note that adequate on-street parking is available, usually on the same block, if not within one to two blocks of the deficit.

No new development projects are planned between the five- and ten-year planning horizon within the study area. The previously noted blocks are still expected to experience parking deficits. Several additional blocks may experience small parking shortages on one block face.

The figures on the following pages show peak parking occupancy (2:00 p.m.) within the study area for the ten-year planning horizon. Color coding is used to show the current occupancy of the entire study area. Those blocks in red or purple are experiencing parking occupancy issues, with occupancy at or greater than 85%.

Figure 20. Weekday Peak Private Parking Occupancy – Ten Years



Ten-Year Private Off-Street Parking Projections

- While most blocks within the study area are expected to have sufficient parking to meet private parking needs over the ten-year planning horizon, five (5) blocks are expected to experience parking occupancy rates above 85% capacity.
- A two-space deficit is projected on Block 25 by 2030, due to general growth in the area.
- Due to development projects on Block 33, private parking demand is expected to exceed the available parking supply. Based on the proposed development, Walker projected a deficit of approximately 50 spaces on this block by 2030. It is important to note that arrangements have been made to lease 25 parking spaces for employee use from a local church. This reduces the localized shortage to approximately 25 spaces during the peak hour.
- Additionally, the potential expansion of retail space on Block 59 is expected to create a localized shortage; note, adequate public parking is available on Block 60.

Figure 21. Weekday Peak Public Parking Occupancy – Ten Years



Ten-Year Public Parking Projections

- It is important to note that the future parking analysis is based on a peak parking demand around 2:00 p.m. in the afternoon during December.
- Most of the public off-street parking is not expected to experience significant demand during the winter months, with the exception on the lot on Block 42.
- While many of the residential streets have excess capacity during the 2:00 p.m. peak, it is important to note that these streets are expected to continue experiencing localized shortages in the evening, like existing conditions.
- It is also interesting to note that adequate public off-street parking is available within a short walking distance on several of the streets projected to experience parking shortages during the peak hour, such as Blocks 53, 54, and 61.

Future Saturday Demand

Walker also analyzed parking supply and demand within the study area during peak weekend conditions over a ten-year planning horizon to identify potential parking surpluses and deficits on a block-by-block basis. Like the future weekday scenario, the mix of proposed developments is expected to shift the peak period of activity to the afternoon. While the overall peak may shift to an earlier time of day, it is important to note that on-street parking is still expected to be problematic in the evenings, specifically in dense residential areas.

Figure 22: Future Saturday Parking Occupancy – Survey Day

Zone	Private Off-Street Parking				Public Off-Street Parking				On-Street Parking			
	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years
Downtown	38%	44%	47%	47%	22%	46%	47%	47%	43%	63%	64%	67%
Historic	25%	32%	33%	33%	50%	0%	0%	0%	41%	58%	59%	62%
Residential	33%	26%	26%	26%	0%	0%	0%	0%	39%	54%	55%	58%
Riverfront	30%	26%	26%	26%	7%	8%	8%	8%	24%	30%	31%	33%
Total	32%	33%	34%	34%	11%	15%	15%	16%	40%	55%	57%	60%

Source: Walker Consultants, 2020

While occupancy rates overall do not indicate a parking shortage within the next ten years within the study area, new development, together with modest population growth, may cause increased pressure in neighborhoods currently experiencing localized deficits and/or create new localized “hot spots”. As previously noted, there is typically adequate parking within one to two blocks to support any projected excess demand.

Based on the future development scenario, the following blocks may experience parking shortages over the ten-year planning horizon:

- With the opening of the Market House, the occupancy rate on Block 42 may exceed 100% of capacity. While additional off-site parking is available on-street as well as in public lots within one block of the project, a localized deficit of approximately nine spaces is expected.
- Similarly, a parking deficit on Block 59 (Bootleg Antiques) is expected in connection with the expansion of retail space on the block. Limited parking is available on block, creating a localized deficit of about 10 spaces. Adequate parking is available on the next block to support the new demand. As previously noted, a pedestrian walkway from Commerce Street to Bridge Street is recommended.
- Demand in the private parking lots on Blocks 41, 52, and 55 is also expected to near capacity. The projected deficit on these blocks is approximately one to three spaces.

The figures on the following pages show peak parking occupancy (2:00 p.m.) within the study area for the ten-year planning horizon. Color coding is used to show the current occupancy of the entire study area. Those blocks in red or purple are experiencing parking occupancy issues, with occupancy at or greater than 85%.

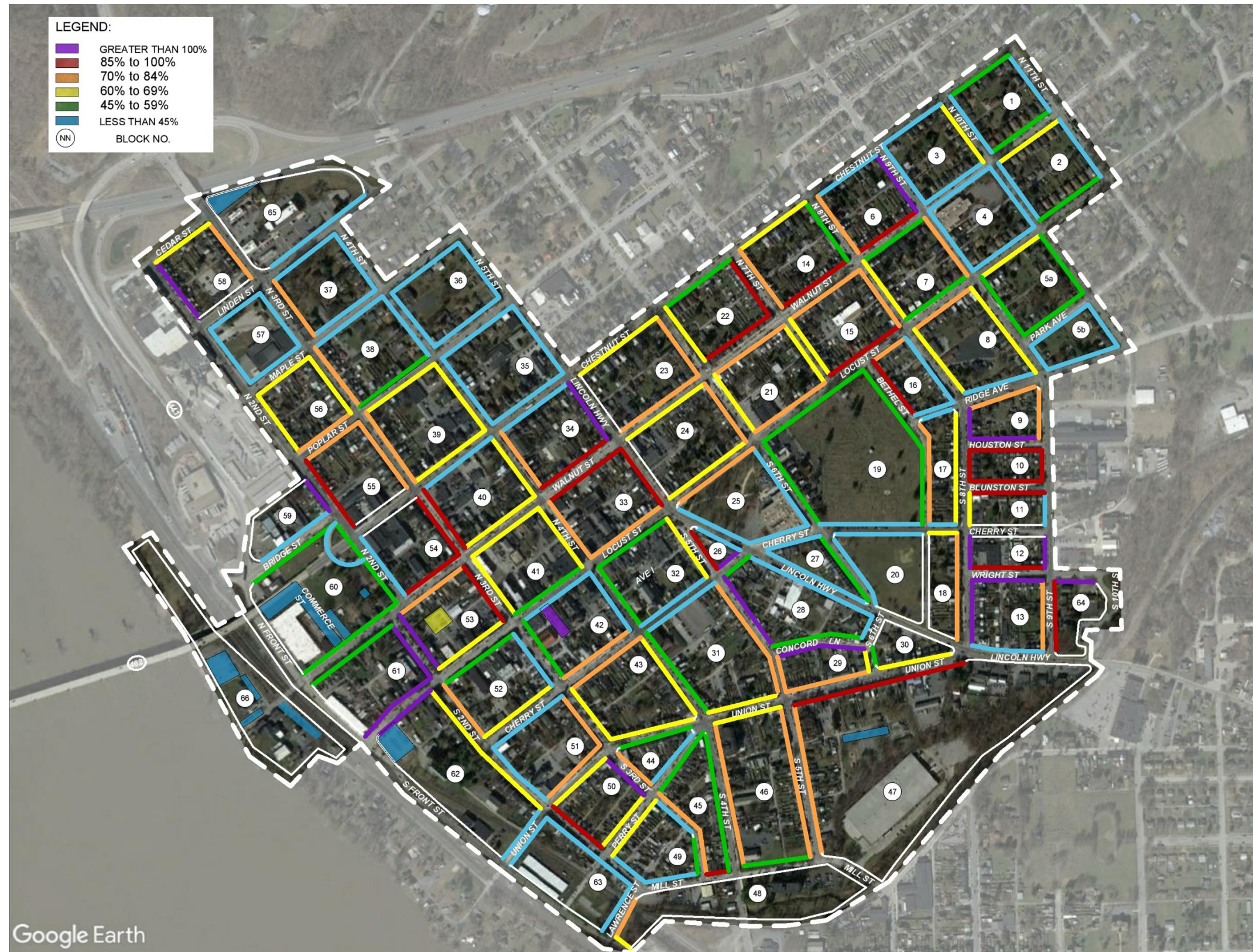
Figure 23. Saturday Peak Private Parking Occupancy – Ten Years



Ten-Year Private Off-Street Parking Projections

- During peak weekend conditions in December, three blocks are projected to experience parking occupancy rates above 85% of capacity. Small localized shortages (one or two spaces) may occur by 2030.
- Also note that while Block 33 is projected to experience a parking shortage during weekday conditions, surplus capacity is projected during a typical busy Saturday. Two new developments on this block are expected to be built with parking. Through a shared parking agreement, the Borough may be able to utilize the excess capacity for public parking.
- Lastly, the Chip Factory Hotel is expected to open on Block 61 by 2021. Hotels typically experience peak activity in the evening hours, while the figure to the left illustrates occupancy during the 2:00 p.m. peak. In the evening, the block is expected to experience occupancy rates at or near capacity. Overflow demand is expected to park in the public lot on Block 62.

Figure 24. Saturday Peak Public Parking Occupancy – Ten Years



Ten-Year Public Parking Projections

- Several block faces within the study area are expected to experience localized shortages during the peak hour; however, there is usually available parking within a block or two of the localized shortage.
- Like future weekday analysis, peak conditions are expected to occur during the day, rather than in the evening. While note shown in the figure to the left, many of the streets noted during the existing conditions section are expected to continue to experience shortages during the evening hours.

Design Conditions

As previously noted, there is no “perfect” day to collect parking occupancy data. Parking activity varies from day to day and throughout the year. In Columbia, anecdotal evidence suggests seasonal fluctuations associated with recreational tourism impact demand in throughout the downtown, but most notably in the public lots closest to the waterfront.

For planning purposes, Walker considered how future development and growth in the area may impact the occupancy and adequacy of the parking system during the warmer months. Survey day parking demand was increased to reflect increased activity in the downtown before the parking needs of the planned development projects was added to the model.

Weekday Projections

The figure below shows the projected occupancy rate by parking type for each zone within the study area over the next ten years. Overall, parking occupancy rates do not suggest a parking problem during design conditions. Occupancy rates do not generally exceed 70% of capacity.

Figure 25: Future Weekday Design Conditions

Zone	Private Off-Street Parking				Public Off-Street Parking				On-Street Parking			
	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years
Downtown	46%	65%	67%	67%	34%	36%	57%	60%	52%	54%	55%	57%
Historic	30%	30%	30%	30%	75%	75%	75%	88%	50%	51%	52%	55%
Residential	40%	40%	40%	40%	63%	63%	69%	69%	47%	48%	49%	52%
Riverfront	36%	50%	50%	50%	27%	28%	28%	30%	29%	29%	29%	32%
Total	38%	44%	44%	44%	31%	31%	36%	38%	48%	49%	50%	53%

Source: Walker Consultants, 2020

While the projected public off-street parking supply in the historic zone is expected to exceed 85% of capacity by 2030, it is important to note this finding refers to one parking lot with approximately eight spaces.

It is also important to note that the above public off-street occupancy rates include the approximately 130 space grass lot on Block 66. Without this overflow lot, the overall public off-street occupancy rate would increase from 38% to approximately 54% by 2030. Again, overall occupancy levels at this rate do not indicate a parking shortage.

There are several blocks where localized parking deficits in one type of parking supply or on one block face are expected to occur under design conditions, including:

- The public off-street lots on Blocks 42 and 65,
- The private parking lots on Block 1, 15, 25, 33, 54, and 59, and
- On-street parking along one side of the street on Blocks 7, 9-15, 17, 24-27, 29-30, 33-34, 40, 42, 50, 53-55, 59, and 61.

Saturday Projections

The table below summarizes current and future occupancy rates by parking type in each of the four zones in the study area. Like weekday design conditions, Walker modeled future parking demand within the study area under weekend design conditions over a ten-year planning horizon. While the overall occupancy rates are higher during design conditions than survey conditions, the overall occupancy rates do not suggest a parking shortage.

However, localized “hot spots” are expected. For example, the public off-street supply in the downtown zone, which includes the lots on Blocks 42, 53, and 62, is expected to experience a 78% occupancy rate by 2030.

Figure 26: Future Saturday Design Conditions

Zone	Private Off-Street Parking				Public Off-Street Parking				On-Street Parking			
	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years	Current	3 Years	5 Years	10 Years
Downtown	41%	47%	50%	50%	51%	52%	77%	78%	67%	69%	70%	74%
Historic	35%	35%	36%	36%	0%	0%	0%	0%	62%	64%	65%	68%
Residential	29%	29%	29%	29%	63%	63%	69%	69%	58%	60%	61%	64%
Riverfront	12%	27%	27%	27%	47%	49%	50%	52%	33%	33%	34%	36%
Total	33%	36%	37%	37%	48%	49%	55%	57%	59%	61%	63%	66%

Source: Walker Consultants, 2020

It is also important to note that public off-street occupancy includes the 130-space overflow grass lot on Block 66. When this lot is excluded from the total supply, the overall public off-street occupancy rate in the study area increases from 57% to 80% of capacity. When occupancy rates approach 85% or greater, parkers may experience frustration and delays which searching for parking.



02 Parking Rates, Time Limits & Enforcement

Parking Management

Parking Rates

In setting parking rates, fees, and associated time limits, the logic is to control parking demand by pricing the most convenient and desirable parking higher than less convenient parking locations. The same approach is taken by theaters, stadiums and similar venues where premium seating is priced higher than less desirable seating locations. This encourages the turnover of convenient curbside spaces and promotes better availability of parking. Less convenient and longer-term off-street parking is priced lower (or free) to promote longer term parking in these areas.

Like most municipalities, the Columbia Borough has established restrictions for on-street parking (specifically in the meter zone) to encourage turnover and promote the perception of readily available curbside space. Generally, on-street parking is best suited to serving short-term parking (2 hours or less). Therefore, long-term parking (employees or commuters) is discouraged through meter rates, time limits, and most importantly proper parking enforcement efforts. The only on-street location where parking in excess of two hours should continue to occur is in residential neighborhoods.

A business district's on-street parking spaces are its most valuable parking spaces. These spaces are the life-blood of street level retail, restaurant, and service businesses that municipal governments try to support and attract. Ideally, as a business district's most valuable spaces, the rates for on-street spaces should set the pace for off-street parking prices. If on-street parking is priced too low, it becomes difficult to encourage the turnover of these spaces and the use of off-street facilities. If parking on-street is available at no cost, it encourages misuse by business owners, their employees, and those seeking a no-cost alternative, and ultimately does not serve the customers or visitors of the area.



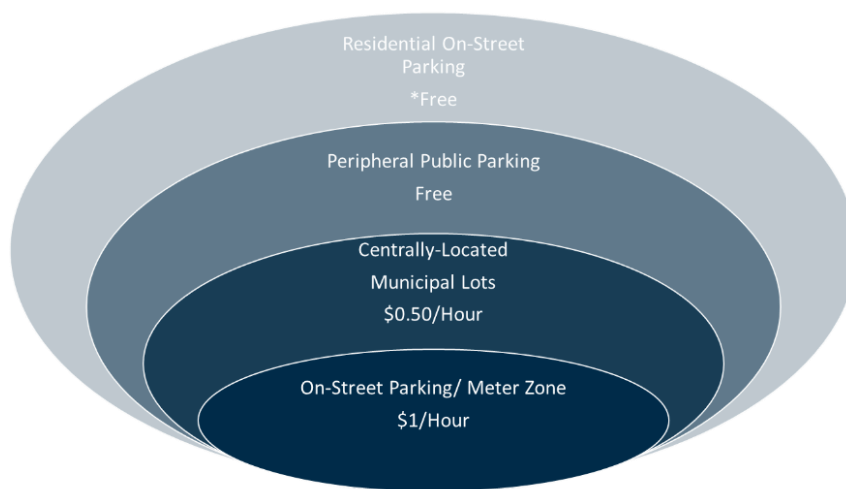
Columbia On-Street Meter Zone and Off-Street Metered Lots

Many communities are now adopting convenience pricing. This parking strategy dictates that the most convenient and sought-after curbside parking should be the most expensive to encourage the timely turnover of spaces and act as a financial incentive to encourage the use of lower cost, less convenient parking located off-street. It is not uncommon to find higher hourly rates on main business district streets than those meters located on arterial streets or surface lots. This approach is the best at managing curbside parking demand and encouraging turnover in areas with popular destinations when sufficient off-street inventory is available to meet demand.

Demand or congestion-based pricing is another approach to pricing strategies that is being explored by different municipalities. This approach is designed to discourage the use of single-occupant vehicles during periods of peak parking demand and promote mass transit options. The additional revenues generated by the program are targeted to help fund public transit operations and roadway improvements. At the time of this report, the use of congestion

pricing in Columbia is premature as the Borough does not maintain the comprehensive public transit network required to offer those working or visiting the Borough other mobility options to reach their destination.

Since congestion pricing is not presently an alternative in Columbia, the use of convenience pricing is an attractive option to promote the turnover of more valuable spaces once meter technology is upgraded. For example, the cost of parking on-street in the meter zone should be higher than parking at off-street locations. Similarly, centralized parking lots should charge more than lots located on the periphery of the business district. Parking at on-street meters would be priced at \$1.00 per hour while lesser-demand off-street lots, specifically the lot adjacent to the municipal building and the lot on S. Third Street and Avenue H, remain at \$0.50 per hour. The remaining publicly-available or municipally-owned parking that is less convenient to the downtown core remains free of cost.



The figure to the left also shows a fourth category of parking residential on-street parking. On-street parking accounts for 56% of the total parking supply in the Borough; only 4% is metered. The vast majority of on-street parking is in residential or mixed commercial/ residential neighborhoods and is uncontrolled.

On-street parking in residential and mixed commercial/residential neighborhoods is currently free. However, the Borough expressed interest in implementing a Residential Parking Program, which could include

an annual registration fee. Additional detail about a residential parking permit program is included below.

In combination with the on-street rate increases, the Borough should consider implementing a commercial parking permit program that would allow business owners and employees to purchase a monthly permit for the metered off-street parking lot(s). The price of the permit would be equivalent to the cost to park in the lot for 20 days per month but would eliminate the need to carry quarters to pay the meter. Additionally, with a mobile LPR (license plate recognition) enforcement system, the Borough could implement a permitless system that utilized the license plate as the credential. If implemented, we recommend the Borough issue a limited number of permits, monitor usage of the lots, and then adjust the number of permits sold until the appropriate oversell factor is reached.

As Columbia grows, and the commercial core of the Borough increases, the Borough should re-evaluate which lots are part of the “core” or if additional on-street meters are needed. For example, a new hotel is proposed for the corner of Locust and 2nd Street. While off-street parking is part of the building program, the hotel could impact both on- and off-street parking in the immediate area. The Borough should monitor this area and add additional meters on-street or in the Locust Street Lot.

The Value of Parking

The Borough currently charges \$0.50 per hour at metered on- and off-street parking spaces; increasing the hourly rate to \$1 per hour is a 100% increase over the current hourly rate. During the stakeholder interviews, several expressed concern that \$0.50 per hour was ‘too expensive.’ When considering a rate increase in Columbia, it is important to consider the difference between cost and value. Part of this perception is likely due to paid parking being somewhat uncommon in Columbia. Another, perhaps more important reason for the perception relates to value – not cost. A product or service that does not deliver what is expected (this may not always be possible, of course), will be perceived as not being worth the cost. Based on our observations and interviews with key community stakeholders, parking may be ‘too expensive’ because it is difficult to find, too far from the destination, condition of the lots, trouble using the meter or finding quarters, or other inconveniences. The presence of these qualifiers indicates price may not be as significant of a concern, if they feel better value is being provided.

During our survey, Walker noted difficulty reading the meters, poor lighting, and a lack of signage and wayfinding directing drivers to off-street parking lots. Improving the parking experience would add **value** to the space and, perhaps validate the increase in cost.

Signage and Wayfinding

Generally, parking regulatory signage was found to be in fair condition and adequate to control parking demand and provide support for citation issuance. Walker typically observed two signs per block face related to street maintenance. Other regulatory signage included ‘No Parking,’ loading zones, ADA parking, and reserved parking for a specific business. However, lot designation and wayfinding/trailblazing signage that is designed to aid a driver in finding off-street parking facilities as well as popular business destinations could be improved. Walker observed very little lot designation or wayfinding signage within the Borough identifying and directing drivers to off-street parking facilities. Three examples of lot designation and/or wayfinding signage in Columbia are shown below.



Additionally, during the stakeholder interviews, it was noted that even promotion information such as maps do not include parking options within the Borough.

A wayfinding system will aid in this experience and help encourage visitors to enjoy all that the Borough has to offer while the pedestrian trailblazing signage not only aids pedestrians in locating their destination but also helps promote the “park once” environment.

Downtown directional signs should guide people to destinations and public parking areas within the business areas. These signs should be colorful, clear, consistent, and concise to read. Pedestrian directional signage placed in off-street parking areas should provide people visiting the area more information about the destinations in the area. The different destinations should be color-coded for parks, public buildings, and parking destinations.

At this time, the Borough should consider the development of a simple fixed static sign program. This requires that artwork be developed and that a comprehensive signage study be completed to assess the size and text required for the various signage as well as the strategic placement of each individual sign to achieve the desired results. The photos illustrate samples of such signage systems adopted by other communities for this purpose.



This approach has the lowest initial and long-term cost and, if designed tastefully, can have as much visual impact as the next option.



It is also recommended that the Borough develop and adopt branding signage that identifies publicly-owned and/or publicly-available parking facilities through an easily identified logo/branding symbol that could include the universal “P” signage. The photo illustrates such a system which also identifies the name of the facility. This action will aid the public in determining public facilities versus privately-owned locations.

Time Limits

As stated previously, parking rates, fees, time limits and enforcement are tools used to control parking demand and ensure turnover of the most desirable spaces. A two-hour time limit is enforced at all metered on-street parking spaces and in one of the public off-street lots in the Borough. A second publicly-owned lot is metered but does not have a two-hour time limit. Most other public parking within the Borough ranges from no overnight parking to a 48-hour limit.

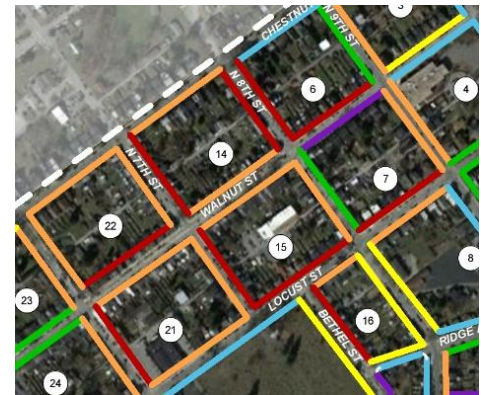
We recommend the two-hour time limit continue to be enforced in the meter district at both the on-street and off-street locations (Borough Hall Lot on Locust). The public off-street metered lot on Avenue H between 2nd and 3rd Streets, as well as the other publicly-owned, or publicly-available lots should continue to follow their current/posted parking restrictions.

Should the Borough develop a new off-street parking lot, the proscribed time limits and parking rates should take into consideration the location and intended users of the lot, as well as Columbia’s overall parking management plan.

Residential Parking Program

Residential Parking Programs are developed to manage parking and maintain livability in residential areas. Residential parking permit programs are typically established to mitigate spillover in residential neighborhoods from adjacent commercial or institutional uses or when historic land development has limited the amount of parking available in residential areas. **An RPP does not guarantee a resident a space directly in front of their home or even on their street but instead allows them to park in an on-street area that commonly includes numerous streets.**

While some blocks in Columbia have a mix of commercial and residential uses and could be experiencing some competition for on-street parking resources, anecdotal evidence gathered during the stakeholder interviews, and to some extent supported by our own observations, suggest the actual and perceived parking shortages occur in primarily residential neighborhoods without spillover from commercial users. One area of concern, where Walker observed several block faces with occupancy rates at or above 85% capacity (red and purple streets) is located between 6th and 8th streets and Chestnut and Locust Streets. The density on these blocks, combined with limited off-street parking availability (including



(including residential driveways), increases the pressure on the on-street capacity. Another example of an area where Walker observed occupancy rates at or above capacity are the blocks between Ridge Avenue and Lincoln Highway and Bethel and 9th Streets. The density on these blocks is also high; however, there are a few more off-street/residential “driveway” opportunities. Anecdotal evidence also suggests that homes traditionally designed for one family households have been converted into multi-family rental housing, which also puts pressure on the limited on-street parking supply.

Implementing a residential parking permit program is an important policy decision for the Borough. Before implementing an RPP, Walker recommends Columbia review their planning and zoning ordinances and confirm that existing policies are being enforced.

While Walker does not recommend the Borough pursue a RPP program at this time, provided below are several best practices to consider when crafting a policy:

- Designate a permit area of sufficient size to discourage non-permit holders from parking in adjacent non-permit areas (i.e. X number of contiguous blocks).
- Determine the hours of enforcement (business hours or overnight) and policies for visitor parking.
- Establish a process for residents to petition the Borough to create a residential parking zone. This usually includes a petition signed by the majority of residents to initiate the process and confirmation that on-street parking occupancy exceeds a minimum occupancy threshold over a sustained period of time.

- Some cities have pre-established parking permit zone boundaries and have an “opt-in” policy in which residents submit a petition for the formation of a new district within the pre-established zones.
- Limit the number of permits issued per residence.
 - For single family homes, the max number of permits is typically limited to one or two.
 - For rental or multi-family homes, the number of permits issued can vary. Some municipalities treat the dwelling as one household and issue permit(s) to the landlord for distribution. Other municipalities issue a permit per tenant up to X number of permits per building.
- Include language limiting the number of permits that can be issued if the residence contains off-street parking. Conversely, if the residence does not contain off-street parking, one additional permit could be issued.
- Some cities require that prior to the creation of a new parking district, a funding source is identified to cover the costs associated with establishing and enforcing the district. This may include an annual permit fee.

Parking Enforcement

Today, parking enforcement is a manual process in Columbia Borough, with parking enforcement officers (“PEO’s”) patrolling the metered streets and off-street lots, inspecting meters to identify parkers who have overstayed their allotted time, and monitoring residential and business district streets to facilitate scheduled street-sweeping activity. The PEO’s are diligent, often issuing hand-written tickets moments after meters physically display violations. Walker did not observe a back-end system for managing the ticketing process, but we anticipate that a system is in place to track items like repeat offenders and unpaid violations.

The parking meters in use are “quarters-only” Duncan units, currently charging \$.50 per hour, with on-street spaces limited to two hours, or \$1.00 in total fees. They are not modern meters. The fact that they only accept quarters limits the ability for the Borough to charge higher parking rates, as it would be burdensome to expect parking patrons to possess enough quarters to pay, for example, \$1.5 per hour, as would apply in other municipalities operating systems that accept paper currency or credit cards for payment.

In Walker’s opinion, the process in place to enforce the metered spaces in the Borough, in conjunction with vehicular patrols to enforce street-sweeping parking, is adequate for the current level of activity, if the back-end system is sufficiently tracking activity and violators are paying fines within prescribed time periods.

However; if Columbia Borough embarks on parking system modernizations such as installation of digital multi-space meters or initiates a residential parking permit program (“RPP”) to assist in addressing certain Borough streets, we would advise implementation of a system that accomplishes some or all the following:

- Mobile License Plate Recognition (“LPR”) enforcement, incorporating vehicle-mounted LPR cameras to enforce on-street metered spaces and RPP compliance in residential areas. Off-street lots may still require a walking PEO, as mobile enforcement is less accurate on lots with aisles and rows of cars.
- Pay-by-Plate multi-space metered parking system, enabling mobile LPR units to enforce on-street meters or RPP parking compliance by scanning license plates while driving at normal speeds.
- Parking App cash-less payment system, allowing parking patrons to pay parking fees by credit card via a parking application such as ParkMobile or Passport. Parking app backend software integrates with enforcement system programs to facilitate efficient violations management.

Revenue realized from parking violations is considerable, and fixed costs associated with the enforcement program are minimal. Thus, Columbia Borough may not see a measurable financial return in modernizing the enforcement system until a commitment is made to further control parking through an RPP program and/or use of digital multi-space meters with acceptance of parking payment apps.

Walker learned in the stakeholders' meeting process that a significant number of Columbia residents prefer to continue paying with quarters, while others would like to pay by credit card. Both payment methods can be provided with little or no capital outlay on the part of the Borough, by contracting with a cell phone parking "app" firm such as ParkMobile or Passport. The parking app provider would install signs in appropriate visible areas and can apply parking payment instruction stickers to the existing meters (usually for free), advising the parking public that a cell phone payment option exists. Any fees, including credit card fees and any internal app provider fees, would be passed on to the parker, thus preserving the Borough's portion of the total parking fee paid. Parkers who prefer to pay with quarters would continue to do so. PEO's would have online access to the payment status for all license plates in spaces controlled by the chosen cell phone parking payment app, enabling the Borough to know which spaces are paid even if the meter shows "expired." Additionally, we observe that parkers are often less resistant to rate increases when a credit card payment option is available.

Enforcement Hours

Currently, parking is enforced from 9:00 a.m. until 6:00 p.m., Monday through Saturday at on-street meters and in the Borough Municipal Lot. In the municipal lot on Avenue H between 2nd and 3rd Streets, parking is enforced from 6:00 a.m. until 6:00 p.m., Monday through Friday. At this time, Walker does not recommend changing the enforcement hours of the metered on- and off-street public parking facilities. We recommend Columbia monitor the need to modify the enforcement hours as new economic development in the area increases, potentially putting increased pressure on the evening parking capacity and/or facilities that need to be enforced.

Shared Parking

While Columbia has nearly 450 publicly available parking spaces, much of the parking supply is located near the waterfront; approximately 90 spaces are located within the downtown core. The remainder of the parking supply consists of on-street spaces and private parking lots. While the Borough is studying opportunities to increase the public parking supply by developing a new surface lot or even structured parking, Walker recommends Columbia pursue shared parking agreements with private property owners, as well as encourage shared parking agreements between businesses, to increase the available "public" parking supply in the area. In effect, the public sector would be encouraging private demand generators to work with private property owners to solve their parking needs, potentially without burdening the Borough. There are several reasons why this is such a beneficial approach:

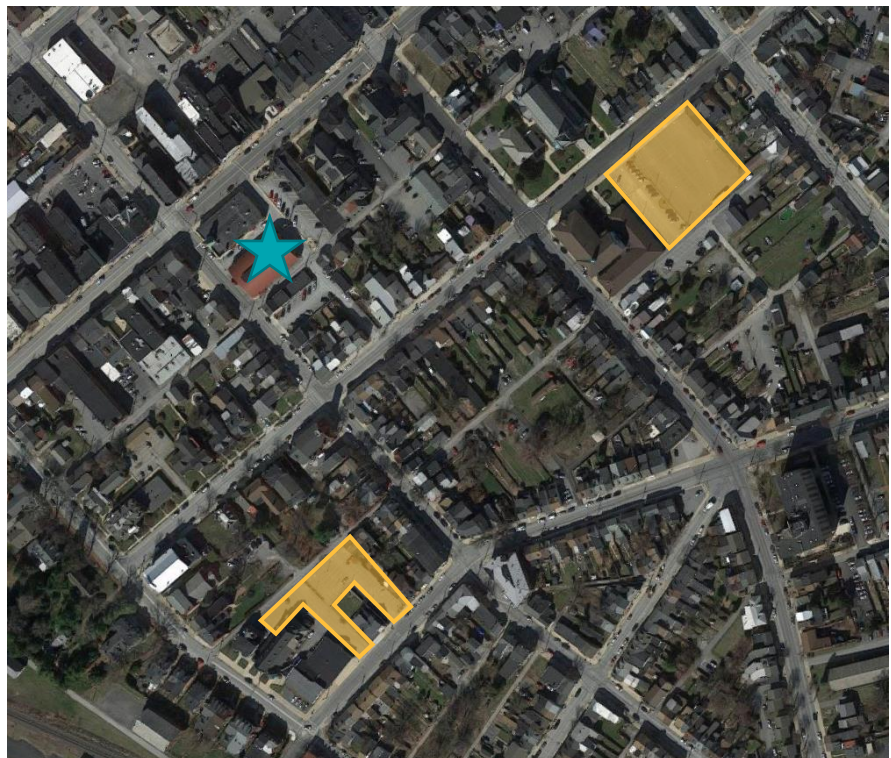
- From an environmental perspective, it is always preferable to make good use of existing parking resources before building additional ones.
- From an aesthetic perspective, adding to the existing checkerboard of surface lots is not desirable. A garage would also consolidate parking and reduce the surface area devoted to parking, but it is usually an expensive option and may not be warranted yet.
- From a financial perspective, owners may be relieved of some insurance and other operating costs while the Borough gets parking without spending the large amount of money needed for a garage.

From our discussions with stakeholders, we understand some shared parking may be occurring organically already; however, other businesses may be concerned over not having enough parking for their own customers today and worried that sharing their limited supply will be detrimental to business. We recommend the Borough work with local businesses to better understand their concerns and offer information and resources to those individual businesses interested in organizing shared parking arrangements between themselves or the Borough. Examples of information and resources include:

- Sharing the findings and recommendations of the parking study with the business community;
- Informally collecting parking occupancy data at different times of the day/week at a particular business that is potentially interested to show parking availability;
- Offering assistance with negotiating strategic agreement components, such as:
 - Compensation in the form of increased lot maintenance, lot improvements, added security, etc.
 - Restricting access to the shared parking, via permits, to area employees to reduce risk and increase accountability
 - Defining any added security or enforcement measures necessary to ensure that the primary uses of the lot are prioritized
- When feasible, stepping in to remove barriers to viable agreements, which commonly includes assuming added liability insurance costs related to the agreements; and
- Providing a sample shared parking agreement.

The Borough could also introduce a paid parking program, such as meters and/or mobile payment services, that could be used to generate and share revenue with a partnering business or property owner. Through a shared parking arrangement, the Borough would install and enforce the paid parking lot/zone on the private business' lot. In some cases, paid parking would only be enforced during the agreed upon "shared" hours. The business of the property owner would share in the revenue generate through use of the lot. Alternatively, the Borough could simply lease parking facilities from private businesses for use by the public sector with no service fee.

Two properties where Columbia may want to pursue a shared parking arrangement are the Our Lady of the Angels School and the St. Peter Roman Catholic Church. Both properties are located within a four-to-five-minute walk of the Market House and other major parking demand generators in the downtown. Our Lady of the Angels School is supported by several parking lots, totaling over 100 spaces, while St. Peter Roman Catholic Church is supported by approximately 45 spaces. During our survey, both locations had a surplus of parking available. We recommend the Borough open a dialogue with one or more of these properties to gauge their interest in



entering a shared parking arrangement. If these property owners aren't interested in a full-time agreement, perhaps arrangements could be made only for specific days or times.

With any shared parking arrangement meant to increase public parking supply, it is critical that the Borough adequately communicate the availability of the parking asset with the public. This includes both web-based communications and on-site signage. The Borough's website should include information about the location of any lots, how many spaces are public, and when the lots are available. Signage should also be provided on-site, clearly identifying what spaces are publicly available and when they are available.

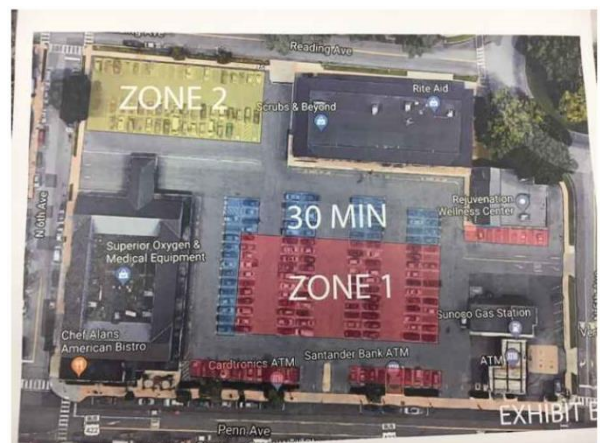
Lastly, while these locations represent two possible shared parking opportunities, Columbia should continue to explore and encourage additional locations for shared parking.

Case Study: West Reading Borough, Pennsylvania

Walker completed a parking needs assessment for the Borough of West Reading, PA in 2014 and updated the analysis in 2017. The Borough has experienced modest but steady growth in the downtown area in recent years with numerous restaurants operating along Penn Avenue, due in part to elimination of off-street parking requirements for businesses in the Central Business District. While demand for parking in the downtown grew, the parking supply did not. Public parking included on-street spaces and one 22-space lot. Some small privately-owned surface lots were available but restricted to a specific business or use. The largest source of parking in the Central Business District was the approximately 200-space West Reading Shopping Center on the 500 block of Penn Avenue. The lot was the de facto "public" parking in the downtown due to its capacity, general vacancy, central location, and lax enforcement of posted restrictions.

The property owner expressed interest in a public/private partnership with the Borough that included mixed-use development and a parking garage; however, formal plans have been slow to develop. In the meantime (and over the course of several years), the property owner grew frustrated with the increasing number of drivers illegally parking in his lot for downtown visits. Signage was posted identifying the lot as reserved for patrons of the adjacent businesses. The owner then engaged a towing contractor to remove vehicles parked in the lot late at night, which while within his rights, adversely affected restaurants and bar establishments along Penn Avenue.

Walker recommended the Borough to seek shared parking agreements with several underutilized privately-owned facilities, including the West Reading Shopping Center. After more than a year of negotiations, the Borough has reached an agreement with the Shopping Center concerning public usage of the private lot. The Borough secured a \$50,000 grant from the BB&T Economic Growth Fund of Berks County Community Foundation and used part of the funds to install signage and two multi-space meters (flowbird) in the West Reading Shopping Center Lot. Approximately 100 spaces in the lot have been made available to the general public for \$1.00 per hour.




The agreement has been in place since September 2019 and is considered an overall success. Per the terms of the shared parking agreement, the Borough was responsible for all costs associated with installing the meters, as well liability insurance. The Borough is also responsible for enforcement of the lot and keeps the citation

revenue. Currently the parking enforcement officer is stationed in the lot during weekdays only, and acts as both ambassador and enforcement officer. The Borough and the property owner split the revenue 50/50. The shared parking agreement also requires the lot to be empty between 3:00 am and 6:00 am, primarily to prevent long-term parkers from utilizing the lot.

The kiosks accept both coin and credit payments; the Borough also accepts payments through the MobileNow app. Per West Reading, the lot has generated between \$2,500 and \$3,000 in revenues per month from September 2019 to March 2020. Approximately 60% of revenue is collected via the MobileNow app. The Borough also reports interest from a second private lot owner in entering into a shared parking agreement.

While an overall success, the Borough does report some issues, including some overflow demand into residential streets where parking is still free. This is assumed to be employee demand and the Borough is looking for an alternative (and free) lot for this user group.



03 Preliminary Site
Feasibility

Preliminary Site Feasibility

While Walker is projecting an overall surplus of parking within the study area over the next ten years, localized “hot spots” are likely, especially in the downtown district where several redevelopment projects are anticipated. In many cases, adequate on- or off-street public parking is available within a block or two of a major demand generator; in other cases, there may be an underutilized privately-owned parking lot. Several strategies to help reallocate parking supply and demand were discussed in the parking management section, including changes to parking rates and encouraging shared parking between the Borough and private owners. Based on our analysis of current and existing conditions, small changes to the parking habits of a few drivers could yield notable results on blocks experiencing parking shortages. For example, Walker projected a need for approximately 10 to 20 additional public spaces, depending on the time of day, to support the CHI Market house, located on the 300 block of Locust Street. Although there is a limited off-street public parking supply on the 300 block, there is surplus capacity within one or two blocks.

However, it is also important to consider opportunities to expand the existing parking supply through the development of new surface or structured parking facilities. Working with Columbia, Walker identified several locations where a new public parking facility could be developed, either through the construction of a new lot/garage or the purchase/lease of an existing lot. These options included:

1. 4th and Locust City-Owned Parcel

Located at the corner of Locust and South 4th Street, this City-owned parcel is approximately 40’-6” wide and 131’-0” long. The property is currently vacant. While not wide enough to support a structured parking solution, Walker considered options for a surface parking solution.

2. Burning Bridges Parking Lot

This parcel was previously identified as an option for a public parking facility both independently and as part of a mixed-used development. Multiple conceptual options were prepared by other over the last four years for both a structured and surface solution. Currently, the property is privately owned by the Burning Bridges Antique Market. Depending on the concept, the footprint of the parking facility may also include part of the parking lot owned by Salem United Church of Christ. Walker prepared one conceptual plan, assuming only the 87’-0” wide, Burning Bridge parcel(s) were developed.

If the Borough does not pursue the purchase and development of a structured parking solution on this property, Walker recommends Columbia pursue a shared parking agreement for the surface lot; however, the condition of the lot would need to be improved.

3. Our Lady of the Angels Catholic School Parking Lot

Walker assumes the school’s larger surface lot is utilized as a playground during school hours and for other events on nights and weekends. However, the lot represents an opportunity for shared parking between the Borough and the school/parish. Walker prepared alternative functional layouts that would achieve a similar capacity to the current layout while eliminating the need to double park vehicles.

4. St. Peter Roman Catholic Church Parking Lot

The configuration of the Church’s parking lot(s) does not support the development of a structured parking solution. Additionally, the Church appears to have maximized its space by stacking vehicles in three or four columns during services. By focusing on the northeast portion of the lot, this property could be considered for a shared parking opportunity.

Each of these four options is discussed in greater detail in the section below. In addition to preparing conceptual drawings for each site, Walker identified the advantages and disadvantages of each site and provided order-of-magnitude construction costs. We did not comment on the costs associated with land/building acquisition, environmental remediation that may or may not be needed, utility relocation costs, geotechnical engineering impacts, demolition costs, and other soft costs such as design or financing fees. Walker assumed the Borough would maintain existing lighting levels at each of the four locations. For the shared parking opportunities, Walker did not comment on the cost to lease spaces. Additionally, as these drawings are conceptual in nature, ADA parking spaces have not been accounted for; accommodating handicapped parking may result in the loss of one or two spaces.

Walker reviewed the current Borough of Columbia Zoning Code, and identified the following parking-related items of note:

- Chapter 190-40 of the Zoning Code specifies that parallel parking space dimensions should be 7’-0” in width and 23’-0” in length. Non-parallel parking within parking lots shall be designed to meet the following requirements:

Angle	Vehicle		Base Module ¹	Single Loaded	Wall to Interlock	Interlock to Interlock	Curb to Curb	Over-hang	Stall Width	
	Projection Minimum	Aisle Min.							Interlock ² Reduction	Projection Minimum
	VP	A	W1	W2	W3	W4	W5	o	i	WP
45°	17'8"	12'8"	48'0"	30'4"	45'0"	42'0"	44'6"	1'9"	3'0"	12'0"
50°	18'3"	13'3"	49'9"	31'6"	47'0"	44'3"	45'11"	1'11"	2'9"	11'1"
55°	18'8"	13'8"	51'0"	32'4"	48'7"	46'2"	46'10"	2'1"	2'5"	10'5"
60°	19'0"	14'6"	52'6"	33'6"	50'4"	48'2"	48'2"	2'2"	2'2"	9'10"
65°	19'2"	15'5"	53'9"	34'7"	51'11"	50'1"	50'1"	2'3"	1'10"	9'5"
70°	19'3"	16'6"	55'0"	35'9"	53'7"	52'2"	52'2"	2'4"	1'5"	9'1"
75°	19'1"	17'10"	56'0"	36'11"	54'11"	53'10"	53'10"	2'5"	1'1"	8'10"
90°	18'0"	20'0"	60'0" ³	42'0"	60'0"	60'0"	60'0"	2'6"	0'0"	8'6"

NOTES:

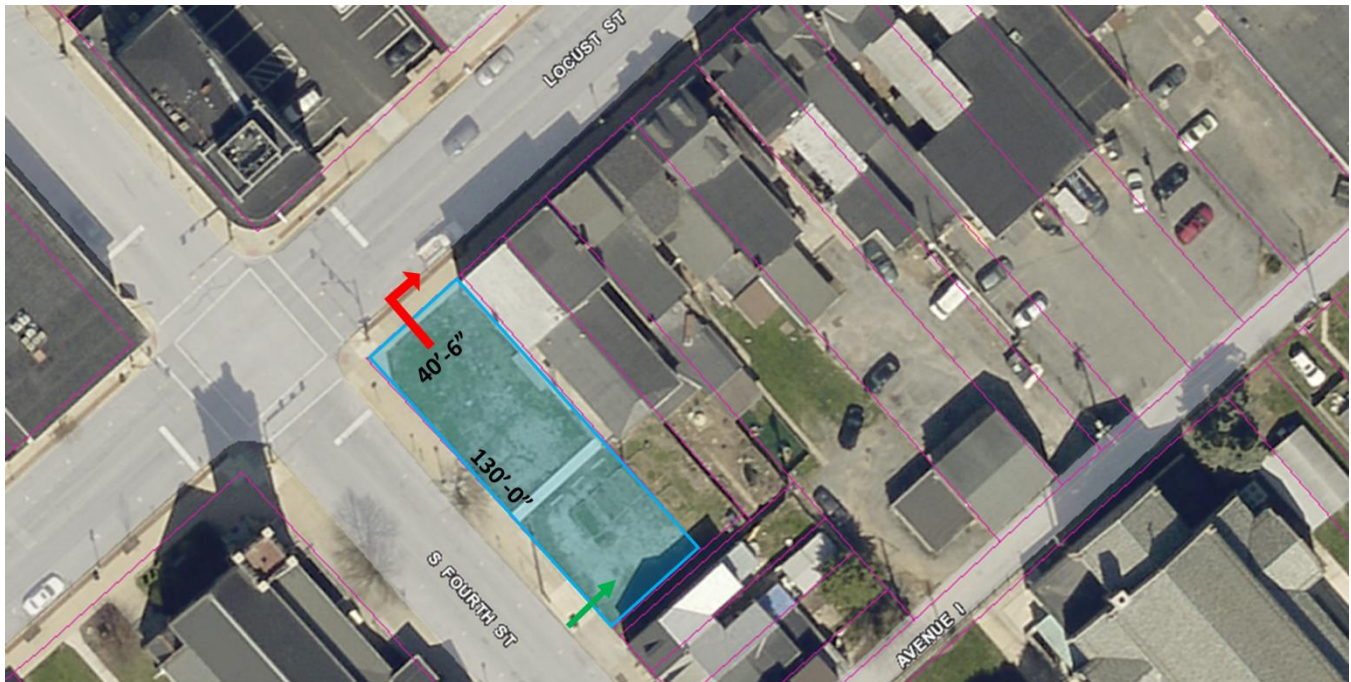
- ¹ "Module" is defined as the combined dimension of two parked vehicles and the aisle between them.
 - ² Calculated for nine-foot stall.
 - ³ Base width may not be waived.
 - ⁴ Parking dimensions for based on design vehicles of 6'7" x 17'0."
- Parked vehicles adjacent to sidewalks shall not overhang or extend over the sidewalk in a manner that restricts pedestrian circulation. Where such overhang is not restricted by a wheel stop or other device, sidewalks shall have a four-foot minimum clearance width from any obstacles.
 - All dead-end parking lots shall be designed to provide sufficient backup area for all end stalls.
 - Section 220-43 of the Zoning Code states that parking areas shall not be within a required buffer yard or street right-of-way.

- a. It should be noted that Walker’s review of the Borough’s Zoning Code did not find specific front, side, or rear yard setback requirements.
- 5) Per the Columbia Code Official, the Columbia Borough Zoning Ordinance does not require setbacks for parking lots, but setbacks would apply for a garage according to the zoning district where the property is located.
 - a. Attachment 3 in Section 220 of the Zoning Code outlines setback requirements for structures in the Downtown Commercial (DC) and High Density Residential (HDR) Districts. There are no setback requirements in the DC District. In the HDR District, the front and side yard setbacks are 5 feet; the rear yard setback is 25 feet.

Option 1 – 4th and Locust Street Parking Lot

Option 1 is a 40’-6” wide by 131’ long grass parcel located at the corner of South 4th and Locust Streets; it is owned by Columbia Borough. While it is not wide enough to consider a structured parking solution, Walker sited an approximately 15-space surface lot on the parcel. As shown in the figure below, the dimensions of the proposed lot are 40’-6” wide by 130’ long. To maximize the capacity of the lot, Walker’s design features one-way traffic flow, with vehicles entering from South 4th Street and exiting onto Locust Street. Due to the proximity of the exiting curb cut to the signalized intersection, we recommend a right-turn only exit; further review by the Borough engineer is also recommended. Walker’s conceptual design also includes a combination of angled and parallel parking spaces.

Figure 27: Option 1 – 4th and Locust Street Parking Lot



Source: Walker Consultants, 2020

There are several advantages and disadvantages associated with the Option 1 lot including the following:

Pros:

- The parcel is located within a short walking distance (less than 500 feet) to several major demand generators, including the Municipal Building, the CHI St. Joseph Children’s Health Center, CHI Market House, and the Cimarron Business Center.
- Because the Borough already owns the parcel, there is no additional costs associated with acquisition.
- Located at the corner of 4th and Locust Streets, the lot has good pedestrian and vehicular accessibility. While the lot is visible from the street, Walker recommends the Borough consider developing a comprehensive signage and wayfinding system in the downtown, clearly identifying all public parking lots.
- The net gain in parking capacity if the Borough develops this parcel is approximately 12 or 13 spaces. While Walker’s preliminary functional design suggests a lot of approximately 15 spaces, it is important to note that several on-street spaces would be lost to allow for entry/exit curb cuts.

Cons:

- The estimated order-of-magnitude construction cost per-space is approximately \$10,000, excluding the cost associated with land/building acquisition, environmental remediation that may or may not be needed, utility relocation costs, geotechnical engineering impacts, demolition costs, and other soft costs such as design or financing fees. Based on a 15-space facility, the total estimated construction cost is believed to be approximately \$150,000.
- Some parkers may not be comfortable parking in 55° or parallel parking spaces.
- Traffic would exit the lot in close proximity to the intersection of 4th and Locust Streets. We recommend allowing a right-turn only for traffic exiting the lot onto Locust Street. Additionally, a traffic engineer should study the proximity of the exit lane to the intersection.
- If Columbia intends to charge for parking in the lot, single-space parking meters may not be feasible due to the narrow dimensions of the parcel. Rather, Walker recommends the Borough consider a multi-space meter and/or a mobile payment app solution.

Option 2 – Burning Bridges Parking Lot

Based on discussions with Columbia, Walker understands the Borough has studied the potential to develop parking on this site several times in recent years. Last year, as part of a Technical Assistance Panel (TAP), the Urban Land Institute developed a structured parking solution for the property that included both Burning Bridges parcels, as well as portions of 318 Walnut Street and the Salem United Church of Christ. As such, Walker was directed not to prepare a structured solution as part of this feasibility analysis.

For discussion purposes, Walker focused primarily on a surface parking solution that was limited to the two parcels owned by Burning Bridges Antique Market. As shown in the figure on the next page, one parcel is approximately 28’ wide by 196’ long (blue). The second parcel is L-shaped. The width of the property at Walnut Street is approximately 61’-6” and 121’-8” long towards Avenue H (yellow). Topography data available from the Lancaster County GIS database indicates the parcel is sloped from Walnut Street to Avenue H; there is an approximately eight-foot change in elevation. Additionally, while the existing parcels are paved, they are not striped. The surface of the lot has degraded and would need to be resurfaced before any restriping or reconfiguration plan is considered.

Figure 28: Option 2 – Burning Bridges Parking Lot



Source: Walker Consultants, 2020

Given the dimensions of the available parcels, Walker sited an 87' wide by 196' long surface lot with a capacity of approximately 60 spaces on the existing paved lot. To maximize the available space, the conceptual design features one-way traffic flow in and out of the lot from Walnut Street and a mix of 60°, 90° and parallel parking spaces. A second entry/exit location on 3rd Street, with two-way vehicular traffic, is also assumed. The flow of traffic in and out of the L-shaped lot is also shown in the figure above.

Note, Option 2 could be developed under a shared parking agreement or other leasing terms with Burning Bridges Antique Market, or the Borough could purchase the parcel and convert to a public parking facility.

There are several advantages and disadvantages associated with the Option 2 lot including the following:

Pros:

- The parcel is located within a short walking distance (less than 500 feet) to several major demand generators, including the Municipal Building, the CHI St. Joseph Children’s Health Center, CHI Market House, Hinkle’s, Rocky’s BBQ, and Stover’s New Agency.
- By resurfacing and restriping the lot, the Borough could improve the patrons parking experience and provide a better level of service.
- Although partially blocked by the Antique Market, the lot has good vehicular accessibility from both Walnut and 3rd Streets. While the lot is visible from the street, Walker recommends the Borough consider developing a comprehensive signage and wayfinding system in the downtown, clearly identifying all public parking lots.
- As a public lot, the parcel is ideally located to support the redevelopment of the Hotel Locust building.

Cons:

- The net gain in parking capacity if the Borough develops this parcel is approximately 18 spaces. Walker's preliminary functional design suggests a lot of approximately 60 spaces; however, the existing lot is estimated to provide approximately 42 parking spaces.
- The Borough would need to lease or purchase the parcel from Burning Bridges.
- The estimated order-of-magnitude construction cost per-space is approximately \$5,000, excluding the cost associated with land/building acquisition, environmental remediation that may or may not be needed, utility relocation costs, geotechnical engineering impacts, demolition costs, and other soft costs such as design or financing fees. Based on a 60-space facility, the total estimated construction cost is believed to be approximately \$300,000.
- Some parkers may not be comfortable parking in 60° or parallel parking spaces.
- If Columbia intends to charge for parking in the lot, single-space parking meters may not be feasible due to the narrow dimensions of the parcel. Rather, Walker recommends the Borough consider a multi-space meter and/or a mobile payment app solution.

Option 3 – Our Lady of the Angels School Lot

The Our Lady of the Angels Catholic School is supported by two parking lots located mid-block between 4th and 5th Streets. The smaller of the two lots features one-way traffic from Cherry Street to Avenue J, with angled parking. The second lot is approximately 150' wide by 190' long (as shown in Figure 29). Walker assumes the lot serves as a play area for school children during the weekday and is used for events and Sunday services on nights and weekends. The current functional design features one-way traffic flow and a row of double-parked vehicles, allowing the school to park up to 89 vehicles in the lot. While the double-parking striping plan is effective in an event setting such as church services, it is not conducive to public parking. Approximately 15± double-parked spaces would not be accessible to the public, reducing the shared parking to 74 spaces.

Figure 29: Option 3 – Our Lady of Angels School Parking Lot



Source: Walker Consultants, 2020

Based on discussions with the Borough, Walker understands Columbia is not interested in purchasing the property at this time but is open to a shared parking arrangement with the school. Walker prepared two different restriping options that would provide a similar space count to the current parking lot while eliminating the need for double parking.

In Option 3A, Walker rotated the orientation of the lot by 90°, eliminating one of the entry/exit locations along Cherry Street. Walker sited a 150' wide by 189' long lot on the parcel, with two-way traffic flow. (Note, the figure to the right is not to scale.) The proposed capacity of the lot is approximately 85 spaces. While restriping the lot in this configuration results in a net loss of approximately four (4) spaces, more of the spaces could be accessible to the public if the Borough pursued a shared parking agreement with the School.

It is also important to note that Option 3A would not eliminate any on-street parking spaces along Cherry Street.



Walker also considered a second functional layout for Option 3, which maintains the current orientation of the lot, but allows for two-way traffic flow (as shown in the figure to the left). In Option 3B, the exiting curb cuts are reconfigured to create three entry/exit lanes into the lot. The design primarily features 90° angled parking spaces, but also six parallel parking spaces to achieve a total capacity of approximately 88 spaces. It is important to note that the reconfiguration and restriping of the lot results in the loss of approximately one off-street parking spaces; however, due to the additional curb cuts created along Cherry Street, Walker expects a loss of two or three on-street spaces.

Like Option 3A, Option 3B is expected to create a net loss of approximately four spaces, including on- and off-street parking.

There are several advantages and disadvantages associated with the Option 3 lots including the following:

Pros:

- By reconfiguring and restriping the exiting lot, the Borough and Our Lady of Angels School could achieve a similar parking space capacity without the need to double parking up to 15 vehicles. This would more easily allow the lot to meet both public and private parking needs under a shared parking arrangement.

- The parcel is located within a reasonable walking distance (between 500 feet and 800 feet) of the Municipal Building, CHI Market House, the CHI St. Joseph Children’s Health Center, and Union Station Grill.
- The Borough could gain up to approximately 85 publicly available spaces without purchasing additional real estate through a shared parking agreement with Our Lady of the Angels Catholic School. The terms of the shared parking agreement could specify how many spaces and when the spaces could be made available to the public.
- While not visible from Locust Street, the lot has good pedestrian and vehicular accessibility. To improve accessibility, Walker recommends the Borough consider developing a comprehensive signage and wayfinding system in the downtown. Any signage posted at the lot should clearly indicate which spaces are available to the public, when they are available, for how long they are available, and if there is an hourly fee.

Cons:

- With both Options 3A and 3B, there is a net loss of about four (4) spaces. Walker’s preliminary design shows the reconfigured lot could provide between 85 and 88 parking spaces; however, the current capacity of the lot is approximately 89 spaces. The net loss accounts for both on- and off-street spaces.
- The school may not want to restripe/reconfigure the lot.
- The periods of time the lot would be available for public use may be limited due to daytime, evening, and weekend activity associated with the school.
- The estimated order-of-magnitude construction cost is approximately \$20,000 to \$30,000, excluding the cost associated with land/building acquisition, environmental remediation that may or may not be needed, utility relocation costs, geotechnical engineering impacts, demolition costs, and other soft costs such as design or financing fees. The estimated construction cost includes between \$10,000 and \$15,000 for restriping, and another \$10,000 to \$15,000 for curb cuts.
- Some parkers may not be comfortable parking in the parallel parking spaces shown in Option 3B.
- If Columbia intends to charge for parking in the lot, single-space parking meters may not be feasible due to the alternative uses of the lot (i.e. playground). Rather, Walker recommends the Borough consider a multi-space meter and/or a mobile payment app solution. The Borough would also need to gain permission to install meters or signage as part of the shared parking agreement.

Option 4 - St. Peter Church Parking Lot

The Option 4 site includes several irregularly shaped parcels of land owned by St. Peter Roman Catholic Church. The capacity of the yellow portion of the lot shown in the figure below is approximately 39 parking spaces. The blue portion of the lot contains about 15 spaces and is used as a play area for children during the week. Based on the existing striping in the lot, Walker also assumes vehicles are parked (stacked) in four or five rows during services to maximize the space. While this method maximizes the space for an event, vehicles are essentially locked in until service is over. This style of parking would not be conducive to a public parking setting. After reviewing the dimensions of the parcel, Walker does not believe a more efficient layout could be developed for this property.

Based on discussions with Columbia, Walker understands the Borough is not interested in purchasing this property but would be interested in pursuing a shared parking arrangement with the Church. If such an arrangement was organized, Walker recommends the Borough focus on the 39-space lot (yellow portion).

Figure 30: Option 4 – St. Peter Church Parking Lot



Source: Walker Consultants, 2020

There are several advantages and disadvantages associated with the Option 4 lot including the following:

Pros:

- No additional efforts to restripe or reconfigure the lot are needed to maximize parking capacity on the property.
- While there may be a cost associated with leasing the parking from the Church, there is not construction cost associated with restriping the lot.
- The parcel is located within a reasonable walking distance (approximately 700 feet) of the Municipal Building and the CHI Market House.
- The Borough could gain up to approximately 39 publicly available spaces without purchasing additional real estate through a shared parking agreement with St. Peter Roman Catholic Church. The terms of the shared parking agreement could specify how many spaces and when the spaces could be made available to the public.

Cons:

- With signage and wayfinding, vehicular access to the lot is acceptable. Located mid-block, vehicles can access the lot from both Union Street and J Avenue; however, only the Union Street entrance is readily visible to the public.
- The most expedient access from the lot to the downtown area, including the Municipal Building and CHI Market House requires pedestrians to walk down J Avenue, which does not have a sidewalk.
- The periods of time the lot would be available for public use may be limited due to daytime, evening, and weekend activity associated with the Church.
- Some parkers may perceive the lot as too great a distance from the downtown core.
- If Columbia intends to charge for parking in the lot, single-space parking meters may not be feasible. Rather, Walker recommends the Borough consider a multi-space meter and/or a mobile payment app solution. The Borough would also need to gain permission to install meters or signage as part of the shared parking agreement.

Site Matrix Analysis

Each site being considered as a potential development site is evaluated according to how well it ranks with site selection criteria considerations. Initially, criteria value rankings are somewhat subjectively established by Walker. Different values are exchanged and analyzed to establish a hierarchy that will be reviewed by the Borough. By this means, a consensus site recommendation can be more easily determined. It is important to note that the Project Team represent different departments and perspectives, and all have a vested interest in seeing the community continue to prosper.

To help prioritize the criteria to consider when judging the various sites, we use a matrix analysis. As agreed upon with Columbia, we list all the criteria that we want to consider during the evaluation process and assign each a weight (i.e. importance). The alternative's score for the criteria is the weight multiplied by the rating. The summation of scores gives us a final number such that theoretically the highest number is the most preferred scheme and the lowest number is the least preferred. Small variations in the totals can be ignored. **The Borough should review the weights and ratings because it could easily affect the final recommendation.**

- **Capital Cost** – The construction cost associated with each potential development site does not include things such as property acquisition, tenant relocation, and demolition. Walker compared the construction cost per net space gained to understand the real cost of adding parking.
- **Site Wayfinding** –The ability of a driver or pedestrian to locate the parking facility. Many of these sites already contain parking. Is the site already easily located? Can signage be added to campus to aid drivers in locating parking?
- **Location/Proximity** – Proximity of the lot to major demand generators in the downtown.
- **Public Availability** – How often will the lot be available to the public? In a shared parking arrangement, only a portion of the lot may be publicly available, or the lot may only be available on nights or weekends.
- **Capacity Potential** – As many of the sites being considered already include surface parking, it is important to consider not only the gross capacity, but also the net capacity. How many additional spaces are added to the system after adjusting for the loss of the surface lot?
- **Traffic Impact** – The traffic impact on the existing traffic patterns and the impact that peak period loading and unloading may have on the surrounding street system.
- **Implementation** - Impact of design, construction, and demolition schedule of each site. A new lot or garage may require the existing lot or parting of the existing parking lot be shut down for a period of time. How disruptive will this be to the current parking situation?
- **Land Availability/Acquisition Cost** – The land availability associated with each potential development site considers the existing use of the land, whether or not property acquisition is required, and the need for tenant relocation, zoning compliance, and whether or not identified redevelopment plans exist.

The table on the following page summarizes our preliminary analysis of the proposed structured parking options available to the university.

Figure 31: Matrix Analysis

Criteria	Weight	Option 1 - 4th and Locust Street Lot		Option 2 - Burning Bridges Lot		Option 3A - Our Lady of the Angels Lot (One Curb Cut)		Option 3A - Our Lady of the Angels Lot (Three Curb Cuts)		Option 4 - St. Peter Church Lot	
		Rating	Score	Rating	Score	Rating	Score	Rating	Score	Rating	Score
Capital Cost ¹	5	2	10	1	5	3	15	3	15	5	25
Site Wayfinding	2	5	10	5	10	2	4	2	4	1	2
Location/Proximity ²	3	5	15	4	12	3	9	3	9	1	3
Public Availability	4	5	20	4	16	2	8	2	8	2	8
Capacity Potential	5	1	5	3	15	5	25	5	25	3	15
Traffic Impact	1	2	2	4	4	4	4	4	4	2	2
Implementation	2	5	10	3	6	3	6	3	6	5	10
Land Availability/ Acquisition Cost	4	5	20	3	12	2	8	2	8	2	8
Total			92		80		79		79		73

Notes: ¹ Rating based on the capital cost per net space gained

² Proximity of the lot to major demand generators in the downtown.

Source: Walker Consultants, 2020

The final determination of the relative attractiveness of the alternative solutions must rest with the Borough of Columbia. However, this site analysis provides a reasonable and supportable look at the criteria upon which to base such a decision. Based on this analysis, Option 1 – 4th and Locust Street Lot was determined to be the highest-ranking solution, followed by the Burning Bridges Lot option. Walker understands that many of the sites considered for parking in our analysis may also be under consideration for other mixed-use redevelopment opportunities and that parking may not be the highest and best use of the parking structure. Additionally, we recognize that more than one alternative may need to be considered to meet short and long-term needs within the Borough.

We welcome the opportunity to review the criteria identified in the matrix analysis above and further refine the ranking of the alternatives considered above.

