

## FINAL DELIVERABLE

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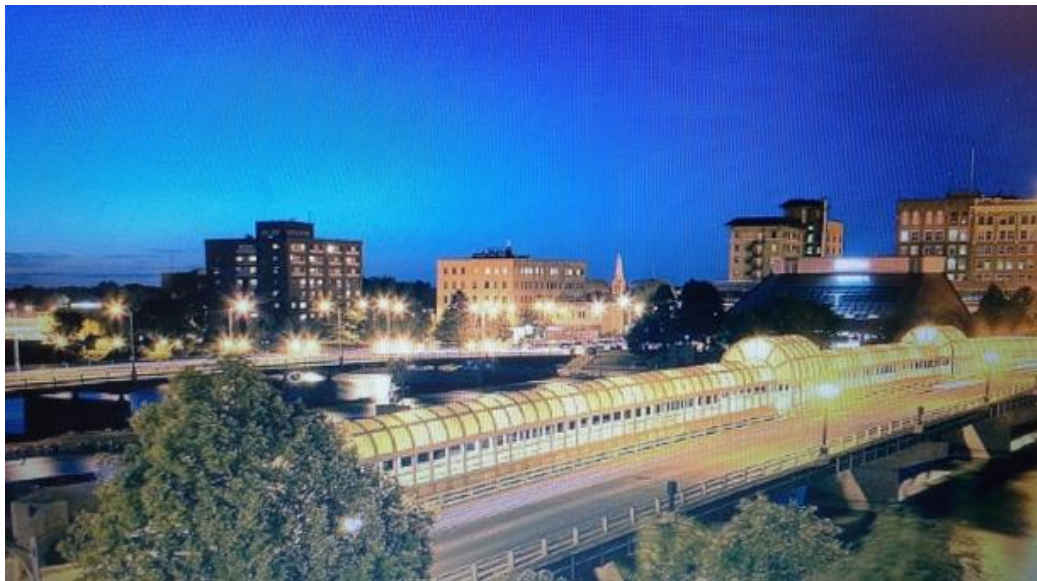
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# DOWNTOWN WATERLOO PARKING STUDY

URP:4262 Transportation Demand Analysis



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# Introduction

The City of Waterloo, in coordination with the Iowa Initiative for Sustainable Communities (IISC), requested that a group from the University of Iowa look into the functionality of downtown Waterloo parking. As with many downtowns, a majority of parking is underutilized throughout the day, with the exception of a few peak hours and a few key locations. The purpose of this study was to assess existing conditions, during weekdays and weekends, to identify current and future parking needs specific to downtown Waterloo. An analysis of public and private on-street and off-street parking was done in order to provide the best assessment possible. In the assessment, strategies for maximizing existing parking spaces were considered and future growth in the downtown area was taken into account. The goal of this study was to develop best parking management practices tailored to the needs of downtown Waterloo, as well as examine how enhancements, for example conversions to outdoor dining space, to the current parking could benefit downtown businesses.

# Background

## Study Area

For the purposes of this study, the majority of the boundaries fall along Franklin Street, 11<sup>th</sup> street, US-218, and Highway 63. Some areas not within these boundaries were included in the study and can be seen in the detailed boundary map shown in Figure 1.

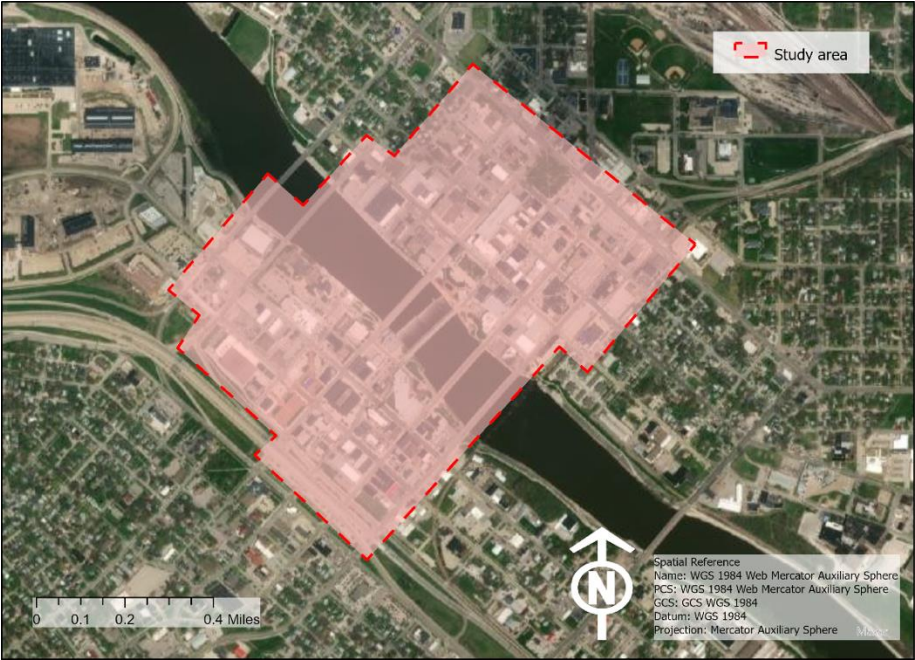


Figure 1: Study Area Boundary

## Demographics

The total population of the study area is 1,546. Of that total population, 52% are white, 42% are black, and 14% are Asian. The study area is more diverse than Waterloo as a whole (67, 912 total populations) where the population is 74.6% white, 16.7% black or African American, and 2.2% Asian. Besides English language, 6.2% of residents in the study area speak Spanish and 1.4% of residents speak other Indo-European Languages.

The median age of residents in the study area is 41 years, which is older than the median age of the City of Waterloo at 36.8 years. Youth (less than 18 years of age) represent 18% of the population in the study area, while seniors (greater than 65 years of age) comprise 21% of the population. The average household size in the study area is 1.54. This number is lower than Waterloo's average household size at 2.37.

The median household income in the study area is \$14,167, much lower than median household income of Waterloo at \$47,327. Most households make less than \$15,000 a year at 53% meaning that the majority of households live below the federal poverty level. Renter-occupied units makes up an overwhelming majority of housing in the study area at 88.5% with owner-occupied units counting for 11.5% of the housing. This ratio is different when looking at the City where 60.9% of housing is owner-occupied and 39.1% is renter occupied. The median owner-occupied housing value in the study area is \$83,600 that is lower than the City's median owner-occupied housing value at \$118,800.

Of the population 25 years or older, 20.3% have less than a high school degree, 45.9% have a high school degree or equivalent, 26.3% have an associate's degree or some college education, and 7.3% have a bachelor's degree or greater. These numbers follow a similar trend to the entire city; however, the City features a higher share of residents with a bachelor's degree or greater at 23.4% and a smaller share of residents without a high school degree at 11.6%.

For commuting, residents in the study area use a variety of modes. 46.5% of residents drive alone, while 21.4% carpool. Other modes of commuting include 15.0% of residents who ride public transit, 2.4% walk, and 1.2% bike. The City of Waterloo has a much greater reliance on private vehicles than the study area with driving alone comprising 80% of commutes, whereas there much less reliance on public transit for work trips at 0.8%. Additionally, 8% of the working-age population works from home in the study area compared to the entire city at 2.7%. The mean travel time to work is 20.2 minutes, which is greater than the city-wide average of 16.1 minutes, with most commutes taking less than 24 minutes (60.8%).

## Land Use

Like most downtowns, the study area contains a variety of land uses. Figure 2 below shows a land use map of the study area.



Figure 2: Land Use Map of Study Area

The most dominant land uses in terms of total parcels and acreage are civic/education uses, commercial uses, office uses that represent 71% of parcels and 78% of acres in the study area. Based on the following table (Table 1), the percentage of total parcels by land use closely follows the percentage of total acres by land use. However, civic/education and parks/open space/conservation assume a greater share of total acres than their number of parcels.

Table 1: Land Use Percentages in Study Area

Land use categories	Number of Parcels	Percent of total	Number of Acres	Percent of total
Residential	41	9%	5.19	3%
Commercial	104	24%	36.32	23%
Civic/Education	144	33%	60.41	39%
Parks/Open Space/Conservation	26	6%	15.13	10%
Office	59	14%	25.44	16%
Industrial/Utilities	22	5%	9.81	6%
Other	39	9%	4.51	3%
<b>Total</b>	<b>435</b>	<b>100%</b>	<b>156.81</b>	<b>100%</b>



While looking at parcels offers a high-level view of the study area, further details are gathered by looking at how uses and area are used within buildings. Building area within the study is primarily used for offices (23%), public administration (23%), residential (13%), restaurants (8%), and lodging (8%). Table 2 below shows the square footage of different building uses and their share of total square footage within the study area.

Table 2: Building Use Percentages in Study Area

Use type	Square footage of building use	Percent of total
Residential	485,112.08	13%
Retail	205,922.73	5%
Restaurants	299,526.18	8%
Lodging	311,971.18	8%
Arts/Entertainment	205,069.87	5%
Office	879,077.27	23%
Public Administration	846,116.46	23%
Medical	28,958.60	1%
Transport/Warehousing	102,019.42	3%
Wholesale	128,337.61	3%
Other Services	263,694.41	7%
<b>Total</b>	<b>3,755,805.82</b>	<b>100%</b>

By analyzing the transportation modes in the study area, there are three modes which are automobiles (94.9%), transit (2.0%), and walk/Bike (3.1%). Figure 3 below shows the different transportation modes used in the study area.

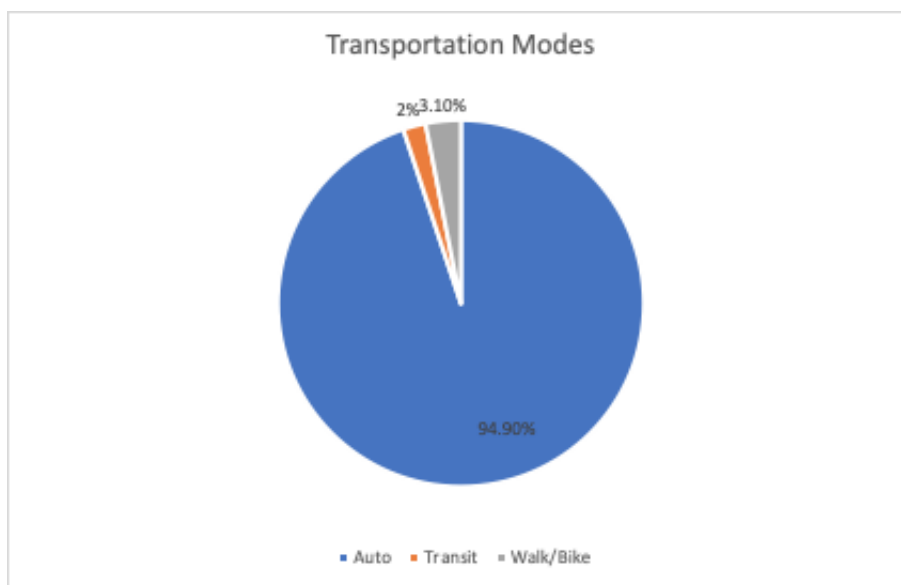


Figure 3: Transportation Modes within Study Area

## Previous Studies

### Waterloo 2008 Downtown Parking Study

In 2008, Rich and Associates completed a downtown parking study for the City of Waterloo. This study analyzed the number of parking stalls that each individual business would occupy to determine the parking needs of the downtown area. The study was conducted for a 38-block area spanning over the Cedar River as shown in Figure 4. A total of 5,329 parking stalls were counted in the study area, and of those 17% (910 spaces) were on-street, 53% (2,828 spaces) were off street public, and 30% (1,591 spaces) were off street private stalls. There are four parking decks in Downtown Waterloo containing 1218 available parking spaces. After an assessment of the data as a whole, the downtown parking in Waterloo was underutilized. The overall occupancy was less than 85%, however, certain areas showed higher occupancies at different times of the day indicating a parking shortage at those times.

After further analysis, Rich and Associates found there was an abundance of long-term parking options but a shortage of short-term parking on the street. Their recommendation was: “In order to support commercial activity in the downtown, there needs to be a good supply of short-term parking that is readily available. All on-street parking adjacent to commercial businesses needs to be short-term”. Other recommendations were made such as implementing individual electronic meters for on-street parking and pay-by-space machines in parking ramps.

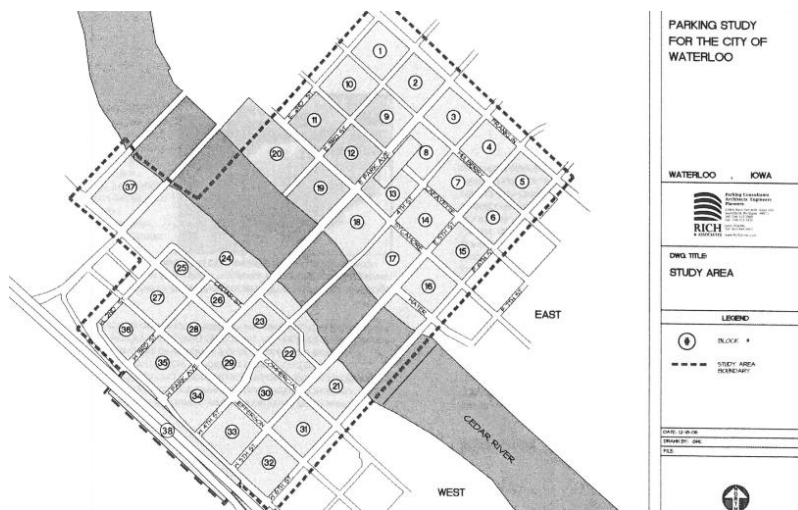


Figure 4: 2008 Waterloo Downtown Parking Study Area Map

## Case Studies

### City of Harrisonburg, Virginia

In April 2020, The City of Harrisonburg, Virginia, released the latest parking survey to review the current usage of parking spaces in Downtown Harrisonburg, and at the same time, discussed with various stakeholders to work out solutions to the current problems and future development models.

Downtown Harrisonburg is about the same size as downtown Waterloo, mainly a mixed land used with the commercial district as the main area. The people coming and going include local residents and foreign tourists. At the south end is James Madison University (JMU), so students are also the majority of people who use parking spaces. In the study, Downtown was divided into 48 blocks with a total of 7,903 parking spaces. Of these, about 13 percent are on-street parking, while 87 percent are off-street. The number of public parking Spaces is only about 27.5 percent of total parking downtown. The rest is private, for internal use, and the exclusive use of specific groups. Meanwhile, according to the study, the utilization rate of public parking spaces is generally up to 75 percent. In contrast, the usage of private parking spaces is almost not up to 55 percent. This imbalance of usage rate causes the principal contradiction of downtown parking.

Based on the analysis, the researchers proposed short -, medium - and long-term plans. Four of these proposals are used to address the underutilization of downtown parking spaces and the shortage of parking during peak hours:

- i. Improve the maintenance of facilities in public parking lots, including cleanliness, safety, and lighting systems. Many people may reduce the use of public parking because the facilities are old and not safe. Improved parking facilities can increase public trust in public parking, while modern lighting systems can also improve energy efficiency.
- ii. Increase the visibility of parking signs. Although the data shows that the utilization rate of downtown parking space is not very high, many people still report a shortage of parking space. Therefore, by changing the parking signal design, we can increase the lighting to improve visual visibility. The APGS system is also introduced, which can be applied to on-street and off-street parking to help drivers find the currently available parking space more efficiently.
- iii. Promote park-sharing agreements by providing support for surging demand for parking at specific times through the complementary role of adjacent blocks.
- iv. Simplify parking time limits. Some 10-hour and two-hour time limits will be changed to a general four-hour limit, while street parking, which is currently unregulated, will be changed to ten hours. Add permissible parking spots to encourage ride-sharing services like Uber and Lyft to pick up and drop off passengers.

## Davis, California

A 2017 paper by Calvin G Thigpen and Jamey M.B. Volker studied the underutilization of residential on-street parking in Davis, CA. The population of Davis was estimated in 2019 to be 69,413, which is roughly equivalent to the estimated population of Waterloo (67,328). The authors of the study used a two-mile transect of low-volume local streets and generalized their results to the city. The transect includes neighborhoods covering a range of construction dates and residential demographics approximately representative of the city. Audits were done of the study area in the mornings and evenings of weekdays in May and June to estimate peak parking demand in residential neighborhoods. Only on-street parking was considered, as there was abundant off-street parking located within the study area.

The study found substantial variation in the utilization rates of residential parking within the study area, but on the whole parking vacancy ranged from 45 to 88 percent at peak usage. On average, 631 vacant parking spaces within the study area were vacant during peak utilization hours; this is equivalent to 23.3 percent of the entire roadway surface area within the study area. Applying this figure (23.3% of roadway surface area) to the rest of the community, the authors concluded that the city could reduce the cost of achieving its Pavement Condition Index (PCI) targets over the next 20 years by \$513,000, or \$21 per parking space. Additional cost savings could be realized by eliminating extra costs associated with this space, including street sweeping and other non-pavement-related road maintenance. Thigpen and Volker propose two primary alternative uses for the underutilized space that would benefit the city.

First, repurposed spaces could be parceled out in amounts corresponding to the width of the adjacent privately owned parcels, and then sold to those owners. This would earn revenue for the city, and landowners could use the additional space for lawns, gardens, or accessory dwelling units (ADUs). In particular, ADUs could increase local property values, provide residents with potential rental income, and expand the available supply of housing where it is presently limited.

Second, expanded Green Infrastructure: Repurposed spaces could be replaced with trees, bioswales, or landscaped parklets. This would likely reduce the cost of maintenance for the area (green infrastructure is typically less expensive to maintain per unit of area than human-made infrastructure) and improve the aesthetics of residential streets. Road-adjacent green spaces also have traffic-calming benefits, reduce strain on stormwater management systems, and provide additional ecosystem services (i.e., oxygen, evaporative cooling, shade, wildlife habitat, and carbon sequestration).

## Existing Conditions

### Existing Spaces

The existing parking availability has been separated into on street and off-street parking. The off-street parking is classified either private or public. Private off-street parking differs from public when the parking area is restricted access only, for example the post office parking lot is gated so it is therefore considered private. The on-street parking is sectioned into unmetered or metered. The duration of time allowed for the metered parking was also recorded at less than 1 hour, 1 hour, 2 hours, and longer than 2 hours. For each classification of parking, the number of handicap spots available were also accounted for. The study area also has 3 multi-level parking facilities which were put in a separate category. The number of available parking in the area can be seen in Figures 5 and 6.

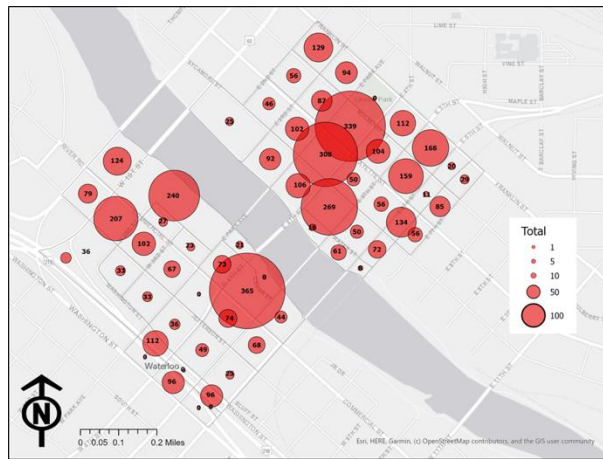


Figure 5: Off-Street Parking Spaces in Study Area



Figure 6: On-Street Parking Spaces in Study Area

## Utilization

### Methodology

Due to the ongoing COVID-19 pandemic, several creative techniques were used to collect parking utilization data in downtown Waterloo. To get an initial inventory of parking, we used Google Maps and Street View to manually count the number of parking spaces for every block in the study area. This was broken down further by on-street vs off-street, metered vs nonmetered, and public vs private.

On-street parking utilization data was then collected by driving through the study area with dashboard-mounted cameras that are enabled with GPS tracking. Using video coding software, each parked car was assigned a point, specific to a block face. The data was then uploaded into ArcGIS where it was joined to block data and the utilization was calculated for each of the two time periods that were being measured.

### Data

Data was collected at 2 different times to help provide an idea about how on-street parking is used during different “high demand” times in Downtown Waterloo.

#### Weekday Daytime

On Wednesday April 14, 2021, utilization data was collected for on street parking during daytime hours. This data represents what parking demand is like in this area during normal working hours.

#### Weekend Nighttime

Weekend utilization data was collected during evening hours on two separate Saturdays, April 3<sup>rd</sup> and 24<sup>th</sup>, 2021. The data from each night was merged into one file, while ensuring that there was no double counting. Weekend evening data is primarily representative of what parking demand is like when people are heading out to restaurants and bars.

### Results

There should always be 1 or 2 open spaces on every block face within downtown areas to eliminate the perception that parking is unavailable and ensure that people can easily access businesses. A lack of parking will prevent people from wanting to frequent the area, while too much parking could indicate a variety of issues (i.e., overpriced, uninteresting area, etc.).

The summary statistics in Table 3 reveal that on-street parking is underutilized on most blocks in Downtown Waterloo, regardless of time of day/week. Both daytime and nighttime counts revealed utilization lows of 0% and highs of 100%. On average though, parking utilization was 18.55% and 16.69% for daytime and nighttime respectively. This is somewhat deceiving though because the data is positively skewed, meaning the median



utilization is significantly lower. Daytime median utilization was 7.14%, while nighttime median utilization was 0%.

Table 3: On-Street Parking Utilization Summary Statistics

Summary Statistics	Daytime	Nighttime
Minimum	0%	0%
Maximum	100%	120%
Mean	18.55%	16.69%
Median	7.14%	0%

The histogram in Figure 7 provides insight into the frequency of blocks within the specified utilization intervals. For both time periods, the vast majority of blocks were between 0-25% utilization. During the daytime count, only three blocks within the study area were above 75% capacity, while nighttime counts only had one block above 75%. Based on the maps in Figure 8, it appears that most of the blocks with utilization over 25% are those that are located near restaurants and bars. The full utilization tables can be found in Appendix A.

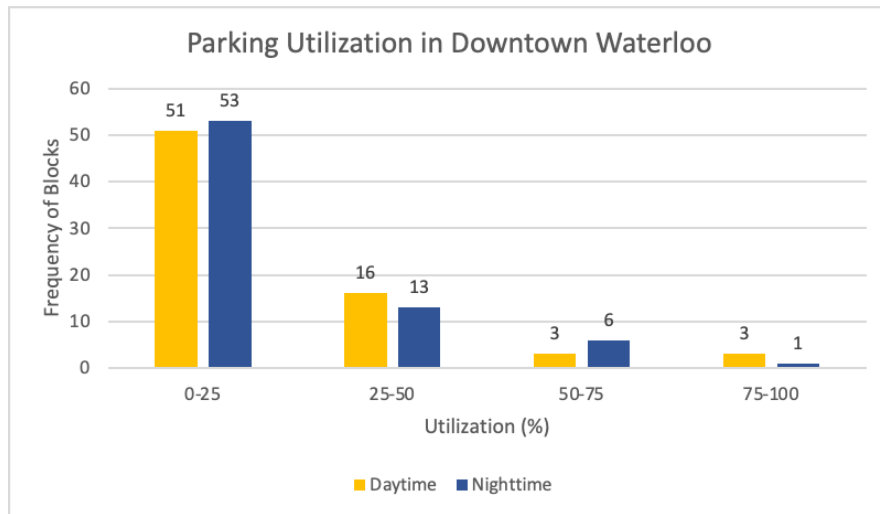


Figure 7: Histogram showing the frequency of blocks at different levels of utilization

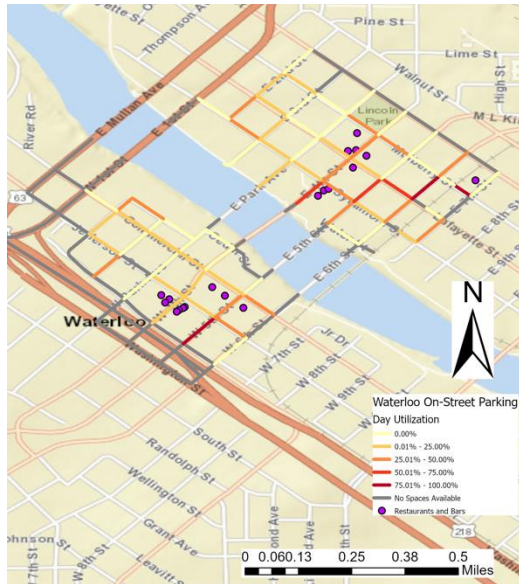


Figure 8: Daytime Parking Utilization in Study Area

## Recommendations

### Reduce Meter Prices

Because the problem in most of downtown Waterloo is an underutilization of parking, the most economically straightforward solution using the existing supply would be to increase demand for parking by decreasing cost. Because on-street metered parking is a maximum of \$0.50/hour throughout downtown already, the city could consider implementing free on-street parking, if not all the time, then during hours when the city would like to encourage more business.

The meters in the downtown district are currently only charging Monday through Friday from 9:00 AM to 5:00 PM. Potential streets to implement free parking on during the day include East Park Avenue or East 5<sup>th</sup> Street. These segments are close to other segments where parking utilization is a bit higher, and residents may appreciate the option to park free and walk further to their destination. Monitoring the utilization rates in the future, especially when the pandemic ends and business picks up in the evenings, may allow for opportunities to extend metered parking hours into the nights and weekends.

However, there are [costs related to free parking](#) that may outweigh the benefits of increasing demand. Free parking downtown may create automobile dependency and discourage car-owners from choosing more active or sustainable modes of transportation, such as walking, cycling, or using transit. The Davis, California case study examined earlier in this report analyzed parking's effects on road maintenance costs. On-street parking spaces are estimated to cost around \$400 to maintain annually, and without fares to recover some of that cost, the city would need to fund maintenance through alternate

funding sources, such as taxes. This can create an equity issue, as even non-car-owners' tax contributions would go towards parking maintenance that does not benefit them.

Therefore, better solutions to the underutilization issues might revolve around finding alternative uses for the existing supply of parking.

## Alternative Uses for Existing Parking Spaces

### Outdoor Dining/Event Space

In an effort to bring more energy into Downtown Waterloo, underutilized on-street parking areas could be transformed into outdoor dining or recreation spaces. Higher density restaurant/nightlife areas and potential locations of parking-to-dining conversions can be seen in the Figure 9 below.

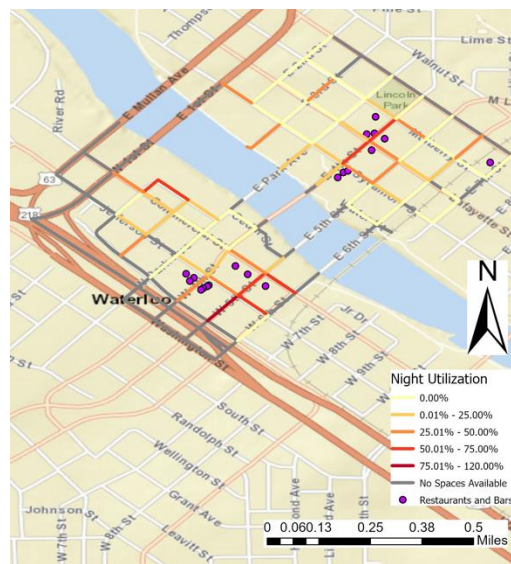


Figure 9: Locations of Restaurants and Night Utilization Rates

An easily achievable, temporary way to test the success of such transformations without full commitment would be through Waterloo's participation in a PARK(ing) Day Event. For one day, businesses in downtown Waterloo would be encouraged to create dining/recreational spaces and 'parklets' in their nearest street parking spaces. The American Society of Landscape Architects provides [several resources](#) on how to host such an event. Many cities, from San Francisco to Philadelphia, have hosted PARK(ing) Days in the past fifteen years. Local businesses can compete to be voted the best parklet. If the event is successful, the City of Waterloo could consider redesignated these parking spots full-time.



Los Angeles, 2008



Sacramento, 2009

Figure 10: PARK(ing) Day Examples

The [National Association of City Transportation Officials](#) provides some standards and recommendations for the design and maintenance of these parklets. Dimensions, materials, design loads, and visibility standards are defined in detail in the linked guide. The basic recommendations state that parklets should avoid corners and start at least one parking space away from an intersection. Parklets should have a minimum width of 6 ft and a flush transition at the sidewalk and curb for accessibility. For traffic safety, parklets should be buffered using a wheel stop at a desired distance of 4 feet from the parklet. This space can also be used for curbside trash collection. To promote visibility, parklets should use vertical elements such as flexible posts or bollards. Parklets should not inhibit stormwater drainage, and channels between the parklet base and platform can facilitate drainage. For cities like Waterloo with snowy winter months, parklets can be seasonally removed to prevent conflict with snowplows.

In addition to traditional parklets, the City of Waterloo could examine ways to incorporate green infrastructure/landscaping such as bioswales or rain gardens into existing parking spots. This could be especially impactful to stormwater runoff and flood prevention efforts.

#### Pick-Up and Drop-Off Zone for Restaurants

During the COVID-19 Pandemic, Downtown Waterloo partnered with the City of Waterloo to introduced more than 25 spaces for 15-minute grab-and-go parking along 4th Street and throughout downtown. In a post-COVID world, these grab-and-go spaces would most likely continue to be popular and draw in business for local restaurants.



Figure 11: Downtown Waterloo Grab-N-Go Parking

In the time of COVID, many cities have investigated streetscape design that allows for easier outdoor pick-up from local restaurants and storefronts. [Landscape architects with Arcsine](#) have recommended for the City of Oakland a streetscape modification to provide wider sidewalks and outdoor seating areas where lanes of vehicle traffic used to be. In addition to this outdoor seating area, Arcsine recommended a designated central pre-paid pick-up area for the restaurants and businesses on the street.

Looking at the density of restaurants in downtown Waterloo, a centralized pick-up area could potentially function at the intersection of 4th Street and Sycamore Street. However, if there are concerns about security, the existing grab-and-go parking is a great choice as well.

#### Infill Development on Surface Lots

On the northeast side of the study area, there were a few underutilized surface parking lots that could be converted into commercial, residential, or greenspace for additional downtown attraction. Specifically, blocks 1 and 2 have a lot of unused parking space that could be transformed into something more beneficial to the downtown district. An example can be seen in Figure 12.





Figure 12: [Infill Development Example](#)

### Complete Streets

In low-demand parking areas, it may be a good long-term investment to remove on-street parking and create wider sidewalks and bike lanes to promote active transportation downtown. In combination with other attractions moving downtown through infill development, complete streets with safe and enjoyable pedestrian and cyclist facilities can be a major attraction to the downtown area, even at the expense of close parking spots. Throughout the city, there is generally enough underutilized parking within a few blocks of attractions that removing on-street parking on a couple street segments would not push people away from visiting the downtown district. In fact, the added pedestrian/cyclist traffic may attract more business.

The Park Avenue Bike Friendly Corridor has greatly improved upon downtown Waterloo's bike-friendliness. Expanding bike lanes to adjacent or intersecting streets such as Sycamore Street may promote more cycling.

Especially considering downtown Waterloo's aging population demographics, complete streets that allow them to travel safely and comfortably without a vehicle would improve livability for everyone.



Figure 13: Complete Streets Example, Austin, TX, 2017



## Conclusion / Next Steps

Many downtown areas have a common problem, underutilization of parking, and downtown Waterloo is no different. For the most part, parking is only near capacity during peak hours in the vicinity of restaurants, otherwise all other parking is underutilized. A solution to this problem is to increase the demand of parking. To do this the City of Waterloo should address several items. First, converting parking spaces into other amenities, such as outdoor dining areas or parklets, should be considered. This will increase the attractiveness of the downtown area creating more visitors. Second, incorporating complete streets to allow for multi-modal transportation will give visitors more ways to access downtown. This can include adding bike lanes or creating wider sidewalks for pedestrians. Lastly, a reduction in cost of parking downtown may draw in more visitors. Another option is to offer free parking during certain hours of the day. After these implementations, the parking capacity would have to be reevaluated and the metered parking prices adjusted based on the shift in demand. This is an ongoing process for the City of Waterloo and downtown businesses to work on.

To further investigate the public's perception of parking downtown and interest in recommendations and solutions, the City of Waterloo could utilize a stated choice survey. This survey is designed to capture information about how an individual utilizes downtown parking. It also gets the individuals opinion on improvements to downtown and whether they would be more likely to visit. A sample survey design has been included in Appendix B.

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## Appendix A – Utilization Tables

Left Block	Right Block	Street Name	Segment ID	Left ID	Right ID	Day-time Utilization Count	Day-time Utilization Percentage	Night-time Utilization Count	Night-time Utilization Percentage
2086	2087	W 5th St S	20862087W5TH	2086W5TH	2087W5TH	4	80	6	120
2087	2088	Jefferson St N	20872088JEFF	2087JEFF	2088JEFF	7	38.89	10	55.56
2086	2076	W 4th St S	20862076W4TH	2086W4TH	2076W4TH	1	5.26	9	47.37
2086	2078	Jefferson St N	20862078JEFF	2086JEFF	2078JEFF	2	11.76	8	47.06
2088	2078	W 5th St S	20882078W5TH	2088W5TH	2078W5TH	4	44.44	6	66.67
2081	2088	Commercial St N	20812088COMM	2081COMM	2088COMM	5	33.33	8	53.33
2081	2079	W 5th St S	20812079W5TH	2081W5TH	2079W5TH	0	0	1	20
2076	2075	W Park Ave N	20762075WPAR	2076WPAR	2075WPAR	0	0	0	0
2077	2076	Jefferson St N	20772076JEFF	2077JEFF	2076JEFF	1	5.26	2	10.53
2077	2078	W 4th St S	20772078W4TH	2077W4TH	2078W4TH	1	7.14	3	21.43
2079	2078	Commercial St N	20792078COMM	2079COMM	2078COMM	1	5.88	6	35.29
2070	2075	W 3rd St N	20702075W3RD	2070W3RD	2075W3RD	4	44.44	3	33.33
2077	2073	W Park Ave N	20772073WPAR	2077WPAR	2073WPAR	0	0	0	0
2077	2071	Commercial St N	20772071COMM	2077COMM	2071COMM	2	18.18	0	0
2079	2071	W 4th St S	20792071W4TH	2079W4TH	2071W4TH	0	0	0	0
2072	2071	W Park Ave N	20722071WPAR	2072WPAR	2071WPAR	0	0	0	0
2074	2070	Jefferson St N	20742070JEFF	2074JEFF	2070JEFF	1	5	1	5
2074	2073	W 3rd St N	20742073W3RD	2074W3RD	2073W3RD	0	0	1	5

2073	2072	Commercial St N	20732072COMM	2073COMM	2072COMM	2	16.67	0	0
2060	2071	W Park Ave N	20602071WPAR	2060WPAR	2071WPAR	0	0	0	0
2059	2071	Cedar St S	20592071CEDA	2059CEDA	2071CEDA	0	0	0	0
2044	2043	Water St N	20442043WATE	2044WATE	2043WATE	0	0	0	0
2072	2061	W 3rd St N	20722061W3RD	2072W3RD	2061W3RD	0	0	3	25
2060	2072	Cedar St S	20602072CEDA	2060CEDA	2072CEDA	0	0	1	16.67
2044	2053	E 6th St N	20442053E6TH	2044E6TH	2053E6TH	0	0	0	0
2074	2062	W 2nd St S	20742062W2ND	2074W2ND	2062W2ND	2	22.22	0	0
2074	2061	Commercial St N	20742061COMM	2074COMM	2061COMM	1	4.76	3	14.29
1029	1036	Lafayette St N	10291036LAFAN	1029LAFAN	1036LAFAN	0	0	0	0
2060	2061	Cedar St S	20602061CEDA	2060CEDA	2061CEDA	6	46.15	9	69.23
2044	2035	E 5th St S	20442035E5TH	2044E5TH	2035E5TH	2	33.33	0	0
2044	2045	Sycamore St S	20442045SYCAS	2044SYCAS	2045SYCAS	5	17.24	5	17.24
2062	2060	Commercial St N	20622060COMM	2062COMM	2060COMM	0	0	3	42.86
2046	2045	E 6th St N	20462045E6TH	2046E6TH	2045E6TH	4	30.77	0	0
1029	1028	Mulberry St W	10291028MULBW	1029MULB	1028MULB	3	100	0	0
2036	2035	E 4th St N	20362035E4TH	2036E4TH	2035E4TH	6	54.55	1	9.09
2034	2035	Sycamore St S	20342035SYCAS	2034SYCAS	2035SYCAS	14	42.42	10	30.3
2034	2045	E 5th St S	20342045E5TH	2034E5TH	2045E5TH	11	64.71	6	35.29
2030	2045	Lafayette St N	20302045LAFAN	2030LAFAN	2045LAFAN	10	52.63	3	15.79
2030	2047	E 6th St N	20302047E6TH	2030E6TH	2047E6TH	14	77.78	2	11.11
2028	2047	Mulberry St W	20282047MULBW	2028MULB	2047MULB	0	0	0	0
2036	1045	E Park Ave S	20361045SEPAR	2036SEPAR	1045SEPAR	1	9.09	1	9.09

2036	2033	Sycamore St S	2036203 3SYCA	2036S YCA	2033S YCA	2	6.67	4	13.33
2033	2034	E 4th St N	2033203 4E4TH	2033E 4TH	2034E 4TH	8	40	15	75
2034	2031	Lafayette St N	2034203 1LAFA	2034L AFA	2031L AFA	6	20	8	26.67
2030	2031	E 5th St S	2030203 1E5TH	2030E 5TH	2031E 5TH	0	0	0	0
2030	2029	Mulberry St W	2030202 9MULB	2030 MUL B	2029 MUL B	0	0	0	0
2029	2028	E 6th St N	2029202 8E6TH	2029E 6TH	2028E 6TH	4	36.36	3	27.27
1045	1046	E 3rd St N	1045104 6E3RD	1045E 3RD	1046E 3RD	0	0	2	40
1045	1044	Sycamore St S	1045104 4SYCA	1045S YCA	1044S YCA	4	18.18	0	0
2033	1044	E Park Ave S	2033104 4EPAR	2033E PAR	1044E PAR	0	0	0	0
2032	2033	Lafayette St N	2032203 3LAFA	2032L AFA	2033L AFA	7	22.58	6	19.35
2032	2031	E 4th St N	2032203 1E4TH	2032E 4TH	2031E 4TH	8	40	13	65
2015	2031	Mulberry St W	2015203 1MULB	2015 MUL B	2031 MUL B	8	42.11	7	36.84
2029	2015	E 5th St S	2029201 5E5TH	2029E 5TH	2015E 5TH	0	0	0	0
1046	1043	Sycamore St S	1046104 3SYCA	1046S YCA	1043S YCA	6	27.27	0	0
1044	1043	E 3rd St N	1044104 3E3RD	1044E 3RD	1043E 3RD	2	12.5	0	0
1044	1035	Lafayette St N	1044103 5LAFA	1044L AFA	1035L AFA	0	0	0	0
2032	1035	E Park Ave S	2032103 5EPAR	2032E PAR	1035E PAR	0	0	0	0
2032	2014	Mulberry St W	2032201 4MULB	2032 MUL B	2014 MUL B	6	50	1	8.33
2015	2014	E 4th St N	2015201 4E4TH	2015E 4TH	2014E 4TH	0	0	0	0
1036	1043	Lafayette St N	1036104 3LAFA	1036L AFA	1043L AFA	2	22.22	0	0
1036	1035	E 3rd St N	1036103 5E3RD	1036E 3RD	1035E 3RD	0	0	7	50
1034	1035	Mulberry St W	1034103 5MULB	1034 MUL B	1035 MUL B	0	0	0	0
1034	2014	E Park Ave S	1034201 4EPAR	1034E PAR	2014E PAR	0	0	0	0

1036	1033	Mulberry St W	10361033MULB	1036MULB	1033MULB	2	7.41	0	0
9999	2087	W 6th St N	99992087W6TH	9999W6TH	2087W6TH	0	0	0	0
9999	1036	E 7th St N	99991036E7TH	9999E7TH	1036E7TH	4	50	0	0
9999	1028	E 7th St N	99991028E7TH	9999E7TH	1028E7TH	0	0	0	0
9999	1043	E 2nd St S	99991043E2ND	9999E2ND	1043E2ND	4	40	0	0
9999	1036	E 2nd St S	99991036E2ND	9999E2ND	1036E2ND	4	25	0	0
9999	1033	E 2nd St S	99991033E2ND	9999E2ND	1033E2ND	0	0	0	0
9999	1036	Sycamore St S	99991036SYCA	9999SYCA	1036SYCA	2	22.22	0	0
9999	1046	Sycamore St S	99991046SYCA	9999SYCA	1046SYCA	0	0	2	40

## Appendix B – Sample Survey

### **Downtown Waterloo Parking Survey**

Thank you for participating in this survey examining parking in downtown Waterloo. Your answers will help us to determine the parking demand, as well as changes or improvements that need to be made.

#### **Section 1: Your Current Parking Experience**

##### **1a. For Work**

How often do you park in downtown Waterloo for work?

- I don't       Once a week       2-4 days a week       5 or more days a week

Do you have an employer-provided parking spot?

- Yes  No

If not, how far do you normally have to walk from your parking spot to your workplace?

- Never       1 to 3 times a month       4 to 8 times a month       8+ times a month

##### **2a. Not for work**

Besides work, for what other reasons do you visit Downtown Waterloo? (Select all that apply.)

- Dining       Shopping/services       Recreation/entertainment       Other: \_\_\_\_\_

How often do you park in downtown Waterloo for a purpose other than work?

- Once a month       Once every other week  
 Once a week       2-4 days a week       5 or more days a week

How far do you normally have to walk from your parking spot to your final destination?



- Less than 1 block     1 block     2 blocks     3 blocks     More than 3 blocks

## Section 2: Choices

In this section we will ask about various features of future parking facilities in downtown. These include parking type, price, payment options, and walking distances.

How much would you be willing to pay to park on the same block as your destination?

- 25 cents/hr     50 cents/hr     \$1/hr

What payment method would you prefer to use?

- Coin-based     App-based (credit or debit card)

How far would you be willing to walk from your parking space to your destination?

- Less than 1 block     1 block     2 blocks     3 blocks     More than 3 blocks

What type of parking facility would you prefer to use?

- On-Street     Off-Street     Parking Garage

## Section 3: Opinions on Downtown

Indicate how strongly you agree or disagree with the following statements.

If there were more outdoor events and dining downtown, I would visit more often.

- Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

Downtown Waterloo is a safe place during the day.

- Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

Downtown Waterloo is a safe place at night.

- Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

Parking enforcement is too strict in Downtown Waterloo.

- Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

#### **Section 4: More About You**

What is your gender identity?

- Male     Female     Nonbinary     Prefer not to say

Which of the following age groups do you fit into?

- 16-24     25-34     35-44     45-54     55-64     65-74     75+     Prefer not to say

Which category best describes the annual income of your household?

- Less than \$15,000     \$15,000-\$40,000     \$40,000-\$60,000  
 \$60,000-\$80,000     \$80,000 or more     Prefer not to say

How would you describe yourself?

- American Indian or Alaska Native     Asian     Black or African American  
 Native Hawaiian or Other Pacific Islander     White     Prefer not to say