The City of Davenport
Downtown Parking Study - FINAL

December 2, 2019

TimHaahs

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INTRODUCTION

Timothy Haahs & Associates, Inc. (TimHaahs) was retained by the City of Davenport (the City) to conduct a **downtown parking study.** The focus of the study is to review the existing parking conditions and utilization of Davenport's publicly-owned ramps, lots and on-street parking resources, to evaluate current parking signage, wayfinding and staffing assigned to the City's parking program and to provide recommendations to enhance the parking operations to support local businesses, the residential quality of life and future economic development.

The intent of a well-managed and operated municipal parking system is to promote the free flow of traffic and pedestrian safety, enhance residential quality of life, provide convenient parking to support local businesses and economic development and generate adequate revenue to cover operating costs, facility improvements, and future parking needs. In order to undertake this study, the TimHaahs Team conducted meetings with Davenport representatives and the Director of the Downtown Davenport Partnership, reviewed parking related data and performed field counts and observations over the course of two and a half days. Based on this information, TimHaahs prepared an assessment of the current parking inventory and how it is presently utilized, managed, operated, and enforced. Based on this information we have provided recommendations and strategies to improve downtown parking operations with the intent of accomplishing the following:

- Maximizing the utilization of the existing parking assets for various user groups by promoting increased turnover and maximizing on-street parking and ramp capacity;
- Identifying opportunities for angled and reverse-angled parking;
- Implementing fee parking for high demand on-street parking spaces;
- Outlining any strategies or improvements for snow event parking and special events;
- Improving signage and wayfinding for City ramps, on-street parking and parking lots;
- Identifying the appropriate amount of staffing of the City's parking program; and,
- Identifying "best practice" strategies for the management of existing parking assets.

Study Area

The City of Davenport is located in Scott County approximately 175 miles west of Chicago and 167 miles east of Des Moines, Iowa. The City encompasses approximately 65 square miles with a population of approximately 103,000 residents. This study focuses on Davenport's Central Business District (CBD) which comprises roughly 40 square blocks. The Study Area is bounded by 5th Street to the north, Iowa Street to the east, Bederdeck Drive to the south and Western Avenue to the west. For this study, TimHaahs divided the CBD into two (2) separate zones, the Study Area and the Sub Core Zone, as graphically represented in **Figure 1** below. The Harrison Ramp and the River Center Ramp are both located within the Sub Core Zone which is bounded by 4th Street to the north, Pershing Avenue to the east, 2nd Street to the south and N. Ripley Street to the west.

Figure 1: Study Area and Downtown Sub Core Zone
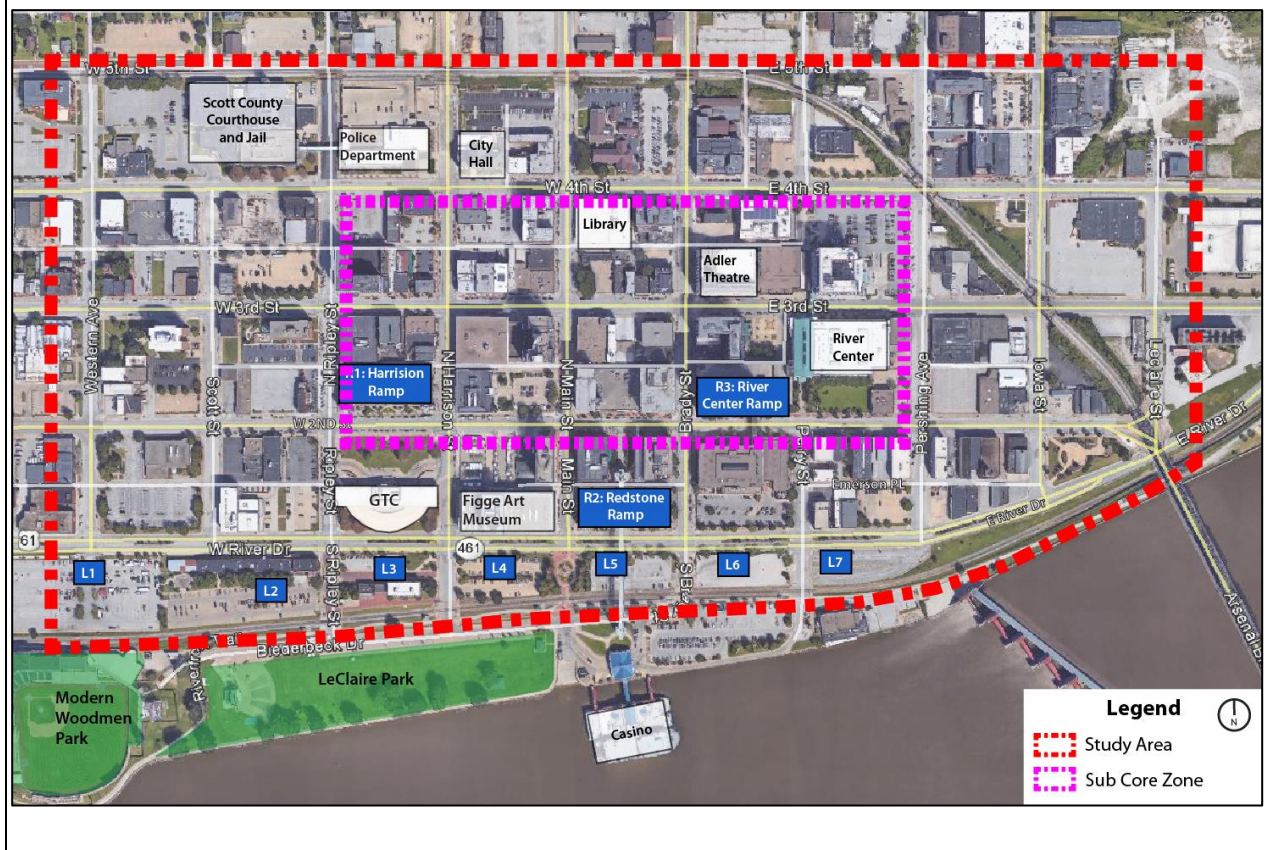
Source: Timothy Haahs & Associates, Inc. 2019

Study Methodology

Within the Study Area, parking occupancy data for on-street parking inventory was collected on **Wednesday, April 10, 2019 from 8:00AM to 10:00PM, Friday, May 31, 2019 from 4:00PM to 10:00PM and Saturday June 1, 2019 from 10:00AM to 10:00PM.** Parking occupancy counts were performed every two hours. TimHaahs also observed and analyzed the parking ramp occupancy data provided to us by the City for the period of **July 9, 2018 to June 13, 2019** and the City also provided TimHaahs with the parking ramps' occupancy data on **September 4, 2019** and **September 7, 2019** from **9AM to 2:30PM**. In addition to field observations and parking occupancy counts, TimHaahs also collected information pertaining to fee parking rates from the following peer cities for use in a comparative analysis: 1) Chattanooga, Tennessee; 2) Peoria, Illinois; and, 3) Cedar Rapids, Iowa.

It should be noted that at the time of data collection, Davenport was experiencing flooding from the Mississippi River. As a result of the flooding, some sections of the downtown within the Study Area were impacted so that parking and vehicular travel was altered in the flooded areas. However, we do not believe that the overall parking demand for the Study Area was significantly affected because parking demand during the flood event was, in essence, redistributed to other areas in the downtown. This redistribution of parking was likely effected by road closures. However, the aggregate parking demand was not likely impacted.

Figure 2 is visually representative of the Study Area affected by flooding from the Mississippi River.

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Figure 2: Flood Inundation Map – April 10, 2019

Source: The City of Davenport, 2019

EXECUTIVE SUMMARY

Parking Supply and Utilization

Davenport has considerable resources to effectively accommodate parking demand for shoppers, visitors, office tenants and special event attendees. In the downtown Study Area, the City has just over 4,000 parking spaces located throughout three ramps, multiple surface parking lots and on-street parking spaces. Primarily due to their proximity to popular destinations, the on-street parking in the Sub Core Zone is in high demand. Presently, these high demand spaces are regulated by "time limits" enforced by Parking Enforcement Officers (PEOs). However, should the Study Area and the Sub Core Zone continue to grow and develop with additional retail, restaurant, entertainment, and residential users, the City should consider the implementation of "fee" parking as a more effective way to regulate and turnover these high value parking resources.

The City's three ramps are popular for office tenants with the River Center Ramp receiving the highest permit parking demand. The City's ramps include contemporary parking access and revenue control equipment and management software, which should be used by parking management staff to better understand parking behavior so that future strategies and initiatives can be implemented to account for an increased parking demand.

Parking Management

Many municipal parking programs function solely on an operational basis. That is, parking managers deal with daily issues without the benefit of any overarching strategic framework. As the needs of a city grow and parking issues become more complex, it becomes more critical that public parking programs are well-managed and aligned with a community's broader goals and objectives. This helps guide decision-makers, parking managers and the public alike.

TimHaahs recommends the development of best practice parking management strategies and policies that establish a strategic framework for the parking operations to support new and existing development. A singularly

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focused "parking department" should be established under the Neighborhood Services Department to provide the necessary planning communications and operational leadership for the City's parking system.

Fee Parking

As Davenport's CBD continues to grow and develop, the competition for on-street and off-street public parking will likely increase. Presently, the City is already experiencing a significant demand for on-street parking in the Sub Core Zone of the downtown. Accordingly, in the near future the City and its downtown stakeholders should consider the implementation of fee parking for highly convenient on-street parking spaces to better regulate these high demand parking resources. With the implementation of fee parking, the City should consider the following:

- Revenue from parking, to the greatest extent possible, should be re-invested in the downtown for improvements such as new parking facilities, additional maintenance services, street sweeping, streetlights, landscaping, etc. Stakeholders are more likely to support fee parking if some of the revenues will be used to benefit the downtown.

- Charging for convenient on-street parking spaces in high demand areas while other public parking (on-street and off-street) remains free will encourage some parkers to use the underutilized spaces, thereby freeing up the higher demand parking.

- Critical to the successful implementation of fee parking is an effective communications and outreach campaign explaining the reasons for and benefits of implementing fee parking and the details on how to use the payment technologies with street ambassadors and soft enforcement until the general public is acclimated.

- The use of highly convenient payment options that are simple and intuitive to use is also very important to a successful fee parking program.

TimHaahs would recommend that the City implement fee parking for the area from River Drive to 5th Street and Iowa Street to Ripley Street excluding 2nd Street to 4th Street and Pershing Avenue to Ripley Street within the Sub Core Zone. Initial pricing should be set at $1.00 per hour for the first two hours with a time limitation of two hours. We would recommend enforcement hours at 10AM to 10PM, Monday-Saturday with free parking remaining on Sundays. The remainder of the downtown parking inventory could remain free with a time restriction of two hours and should be regularly monitored to identify the level of parking demand. When parking demand in these areas approaches 85% occupancy at peak times, the City should consider an expansion of fee parking.

Promote Off-Peak Garage Utilization and Employee Parking Permits

As in the report, the majority of the high demand parking occupancy is within the Sub Core Zone. This is likely because the convenient, on-street spaces are free and enforcement stops at 5PM in comparison to the paid parking in the ramps that are enforced 24/7. The ramps are major parking resources for Downtown Davenport, providing over 1,800 parking spaces within or in close proximity to the Sub Core Zone. During a typical weekday, the overall peak parking demand in the ramps is 60% occupancy. During a typical weekend, the overall peak parking demand in the ramps is 28% occupancy. This demonstrates approximately 40% parking availability on the weekdays and approximately 72% parking availability on the weekends in the ramps.

These available parking resources can be utilized to relieve the high utilization of on-street parking within the Sub Core Zone of Downtown Davenport to satisfy any existing and future parking demand. The City could sell employee parking permits that allow downtown employees to park in the ramps after 4PM and on weekend during the off-peak hours at a significantly reduced rate in order incentivizing utilization of the ramps to free up high demand on-street spaces.

Parking Equipment / Technology

As stated, a major consideration to the implementation of parking fees is the convenience of method of payment, rather than the need to pay. If it is convenient to pay a parking fee, people will be much more accepting of the requirement. It is critical that when parking fees are newly implemented, the method of payment is proven and technologically advanced to accept multiple forms of payment, such as coins, dollar bills and debit/credit cards.

User acceptance, customer convenience, reliability, and revenue control are key components to imposing and collecting parking fees. Today, parking payment technologies such as coin and cash single-space meters, debit/credit card-enabled single-space meters, multi-space meters that accept debit/credit card, bill and coin payments, pay-by-cell programs and gated control systems, are some of the reliable systems that are quick and convenient for parkers.

Parking Enforcement and Staffing

Fair and consistent enforcement of parking regulations in the Study Area is critical to the free flow of traffic, vehicular and pedestrian safety, and parking turnover to support local residents, retailers and merchants. Inconsistent enforcement of regulations is detrimental to the parking program, as it catches people unaware and provides the impression that parking enforcement is unpredictable, arbitrary and capricious. With increased growth in the number of visitors, patrons and businesses and an increasing competition for valuable curb space from Transportation Network Companies (TNCs) - i.e. Uber/Lyft - and the increase in deliveries due to online shopping, parking enforcement will be a growing concern.

Current enforcement staffing is roughly on par with two of the City's three peer municipalities presented in the study and close to the industry standard. The current enforcement hour is Monday to Friday from 8AM to 5PM, the City should extend the enforcement hour to Monday to Saturday from 8AM to 8PM, in order to prohibit the abuse of valuable on-street spaces.

Parking Facility Maintenance

The downtown's off-street parking facilities will often be the first and last impression that a visitor will have of the downtown. Accordingly, all lots and ramps should be inspected on a weekly basis and a regular repaving and re-stripping program should be established for surface parking lots.

Presently, the general maintenance of the City's parking ramps is substandard and requires attention. Regular maintenance, conditional appraisals and the establishment of a capital reserve fund should be implemented to support the general maintenance of the City's parking ramps. TimHaahs would recommend the development of a comprehensive capital improvement plan and maintenance reserve set-asides to ensure the safety and comfort of all parking user groups and to prolong the useful life of these parking assets, to the greatest extent possible.

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T2 Parking Pay Station in Ramps

Flood Condition in April 2019

PARKING SUPPLY AND UTILIZATION

Current Parking Conditions

The public parking inventory in the Study Area is utilized by multiple user groups. The user groups consist of patrons of the retail businesses, owners and employees of the businesses and city residents. The following section of the report outlines the current parking supply and demand in the downtown Study Area, based on the current parking supply and parking counts and observations conducted by TimHaahs on **Wednesday, April 10, 2019**, **Friday, May 31, 2019** and **Saturday June 1, 2019**. In addition to our own parking counts and observations, the City also provided TimHaahs with the parking ramps' occupancy data on **September 4, 2019** and **September 7, 2019** from **9AM to 2:30PM**.

Downtown Parking Supply

The downtown parking supply consists of approximately **1,156** on-street parking spaces in the Study Area, **1,025** off-street parking spaces in public lots and **1,854** off-street parking spaces in public parking ramps for a total of **4,035** parking spaces in the Study Area: **302** on-street spaces are located in what we have defined as the Sub Core Zone, where there is a concentration of retail, restaurant and commercial businesses. The Davenport Parking Division of the Neighborhood Services Department manages all of the on-street parking and publicly-owned off-street public parking lots and ramps. On-street parking inventory is comprised of 1-hour time limited parking, 2-hour time limited parking and reserved parking. Currently, most on-street parking is comprised of parallel spaces with certain blocks in the Study Area containing angled or perpendicular parking. On-street parking is currently free. Parking enforcement hours for the on-street inventory are set at 7AM to 5PM, Monday-Friday. The publicly-owned on- and off-street parking inventory is the focus of our study and recommendations. Privately-owned parking lots that are reserved for employees and customers are not included in this study.

Figure 3 lists the breakdown of parking inventory type. **Figure 4** shows the parking inventory locations.

Figure 3: Study Area Parking Supply

Type	Supply	%
On-Street Spaces in the Study Area	1,156	29%
On-Street Space Inside Study Area	854	21%
On-Street Spaces Inside Sub Core Zone	302	8%
City-Owned Parking Lots	1,025	25%
City-Owned Parking Ramps	1,854	46%
Total	**4,035**	**100%**
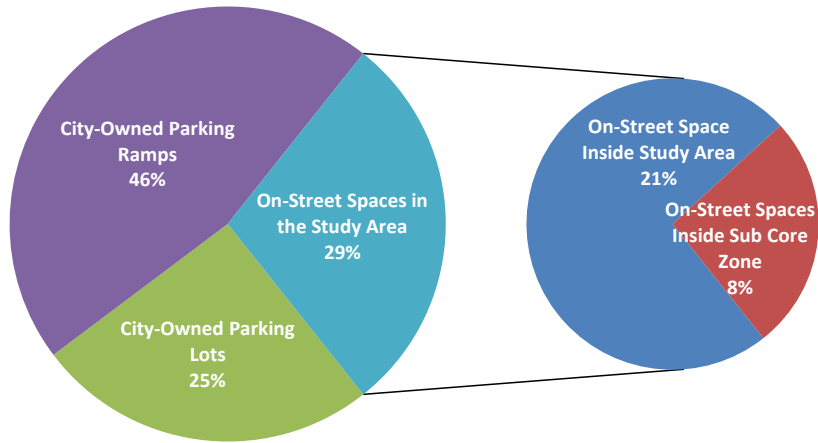
Source: Timothy Haahs & Associates, Inc. 2019

Figure 4: Parking Inventory Map

Source: Timothy Haahs & Associates, Inc. 2019

Parking Demand

Parking Demand refers to the amount of vehicles parked in parking spaces at a particular time of day. TimHaahs conducted field observations and parking occupancy counts on **Wednesday, April 10, 2019** from **10AM to 8PM**, **Friday, May 31, 2019** from **4PM to 10PM** and **Saturday, June 1, 2019** from **10AM to 10PM**. In addition to our own field observations and parking occupancy counts, the City also provided TimHaahs with the parking ramps' occupancy data on **September 4, 2019** and **September 7, 2019** from **9AM to 2:30PM**. During these counts, the weather was temperate for the time of year and there was a minor amount of precipitation during the weekday. During the time in the field, in addition to counting the vehicles, we focused on the current conditions of parking facilities, signage, user parking habits, and occupancy levels. Based on the parking counts and observations, we identified the peak occupancy of on-street parking during each day. To better understand the differing parking demands within the Study Area, we have specified the Sub Core Zone to span from West River Drive to 5th Street and from North Ripley Street to Pershing Avenue.

Weekday On-Street Parking Demand

TimHaahs conducted the weekday data collection on **Wednesday, April 10, 2019** from **10AM to 8PM**. The downtown peak on-street parking demand in the ***Study Area*** during the survey day was **324 spaces or 38% occupancy, which occurred at 12PM**.

Street	Supply	10AM		12PM		2PM		4PM		6PM		8PM	
4th Street	160	57	36%	57	36%	48	30%	41	26%	36	23%	31	19%
3rd Street	71	20	28%	16	23%	22	31%	27	38%	11	15%	23	32%
2nd Street	72	17	24%	24	33%	16	22%	8	11%	29	40%	11	15%
Western Avenue	147	96	65%	88	60%	88	60%	67	46%	48	33%	32	22%
Scott Street	51	26	51%	21	41%	26	51%	13	25%	13	25%	13	25%
Ripley Street	60	20	33%	30	50%	14	23%	14	23%	16	27%	16	27%
Harrison Street	20	4	20%	3	15%	3	15%	3	15%	3	15%	1	5%
Main Street	22	9	41%	14	64%	10	45%	10	45%	12	55%	11	50%
Brady Street	35	13	37%	13	37%	15	43%	13	37%	12	34%	15	43%
Perry Street	39	13	33%	12	31%	13	33%	13	33%	8	21%	7	18%
Pershing Avenue	72	22	31%	28	39%	23	32%	25	35%	32	44%	37	51%
Iowa Street	74	12	16%	12	16%	13	18%	16	22%	36	49%	38	51%
Leclair Street	31	5	16%	6	19%	5	16%	6	19%	11	35%	6	19%
Total	**854**	**314**	**37%**	**324**	**38%**	**296**	**35%**	**256**	**30%**	**267**	**31%**	**241**	**28%**

Figure 5: Study Area On-Street Parking Demand, Wednesday April 10, 2019

Source: Timothy Haahs & Associates, Inc. 2019

The downtown peak on-street parking demand in the ***Sub Core Zone*** during the survey day was **265 spaces or 88% occupancy, which occurred at 6PM**.

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Figure 6: Sub Core Zone On-Street Parking Demand, Wednesday, April 10, 2019

Street	Supply	10AM		12PM		2PM		4PM		6PM		8PM	
3rd Street	107	49	46%	62	58%	52	49%	66	62%	108	101%	102	95%
2nd Street	98	45	46%	71	72%	50	51%	59	60%	71	72%	50	51%
Harrison Street	29	5	17%	16	55%	15	52%	15	52%	20	69%	23	79%
Main Street	38	25	66%	27	71%	17	45%	21	55%	33	87%	27	71%
Brady Street	30	22	73%	22	73%	17	57%	22	73%	33	110%	29	97%
Total	**302**	**146**	**48%**	**198**	**66%**	**151**	**50%**	**183**	**61%**	**265**	**88%**	**231**	**76%**

*Note: Yellow highlighting indicates peak occupancy of 85% or greater for this table and all subsequent tables.

Source: Timothy Haahs & Associates, Inc. 2019

Weekday Parking Demand Summary

Overall, the downtown peak on-street parking demand summary during the survey day was **532 spaces or 46% occupancy, which occurred at 6PM**.

Figure 7: On-Street Parking Demand Summary, Wednesday April 10, 2019

Type	Supply	10AM		12PM		2PM		4PM		6PM		8PM	
Study Area	854	314	37%	324	38%	296	35%	256	30%	267	31%	241	28%
Sub Core Zone	302	146	48%	198	66%	151	50%	183	61%	265	88%	231	76%
Overall Demand	**1,156**	**460**	**40%**	**522**	**45%**	**447**	**39%**	**439**	**38%**	**532**	**46%**	**472**	**41%**

Source: Timothy Haahs & Associates, Inc. 2019

The line chart below, **Figure 8**, shows the on-street parking demand trend in the Study Area and the Sub Core Zone from **10AM to 8PM**. The highest Study Area demand was **38%** at **12PM**. The highest Sub Core Zone demand was **88%** at **6PM**, which is **42%** higher than the overall parking demand for the entire Study Area. **Figure 9** is a "heat" map illustrating the overall weekday peak parking demand at **6PM**.

Figure 8: Study Area vs. Sub Core Zone On-Street Parking Demand Comparison, Wednesday, April 10, 2019

Source: Timothy Haahs & Associates, Inc. 2019

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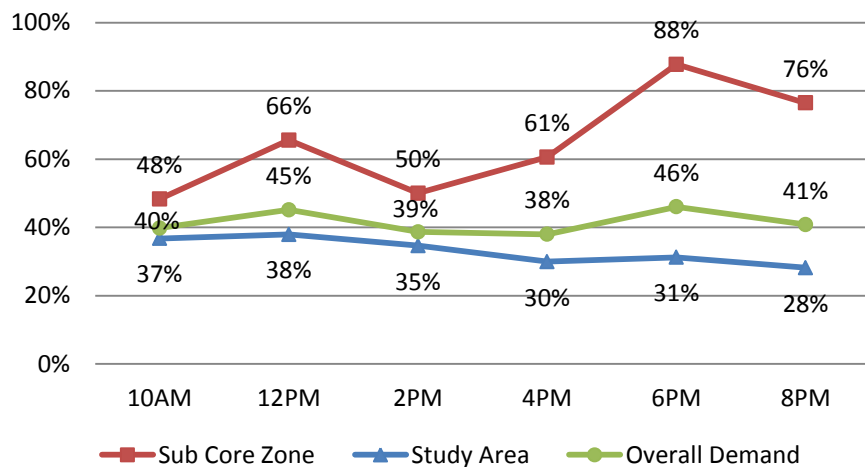
Figure 9: Peak On-Street Parking Demand Heat Map (6PM), Wednesday, April 10, 2019

Source: Timothy Haahs & Associates, Inc. 2019

Friday Night

TimHaahs conducted the Friday night data collection on **Friday, May 31, 2019** from **4PM to 10PM**. The downtown peak on-street parking demand in the *Study Area* during the survey day was **320 spaces or 37% occupancy, which occurred at 8PM**.

Figure 10: Study Area On-Street Parking Demand, Friday May 31, 2019

Street	Supply	4PM		6PM		8PM		10PM	
4th Street	160	44	28%	66	41%	76	48%	68	43%
3rd Street	71	18	25%	27	38%	26	37%	16	23%
2nd Street	72	19	26%	22	31%	22	31%	14	19%
Western Avenue	147	54	37%	28	19%	24	16%	21	14%
Scott Street	51	17	33%	8	16%	11	22%	11	22%
Ripley Street	60	28	47%	28	47%	31	52%	15	25%
Harrison Street	20	7	35%	3	15%	0	0%	1	5%
Main Street	22	13	59%	21	95%	21	95%	15	68%
Brady Street	35	11	31%	20	57%	17	49%	14	40%
Perry Street	39	8	21%	11	28%	5	13%	3	8%
Pershing Avenue	72	41	57%	64	89%	68	94%	51	71%
Iowa Street	74	16	22%	15	20%	19	26%	25	34%
Leclair Street	31	3	10%	0	0%	0	0%	0	0%
Total	**854**	**279**	**33%**	**313**	**37%**	**320**	**37%**	**254**	**30%**

Source: Timothy Haahs & Associates, Inc. 2019

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The downtown peak on-street parking demand in the *Sub Core Zone* during the survey day was **272 spaces or 90%** **occupancy, which occurred at 6PM.** From **6PM through 10PM**, parking demand in the *Sub Core Zone* exceeded **80% occupancy**.

Street	Supply	4PM		6PM		8PM		10PM	
3rd Street	107	80	75%	103	96%	101	94%	99	93%
2nd Street	98	54	55%	84	86%	82	84%	71	72%
Harrison Street	29	16	55%	24	83%	22	76%	24	83%
Main Street	38	38	100%	29	76%	24	63%	26	68%
Brady Street	30	28	93%	32	107%	30	100%	30	100%
Total	**302**	**216**	**72%**	**272**	**90%**	**259**	**86%**	**250**	**83%**

Figure 11: Sub Core Zone On-Street Parking Demand, Friday, May 31, 2019

Source: Timothy Haahs & Associates, Inc. 2019

Friday Night Parking Demand Summary
Overall, the downtown peak on-street parking demand summary during the survey day was **585 spaces or 51% occupancy, which occurred at 6PM.**

Type	Supply	4PM		6PM		8PM		10PM	
Study Area	854	279	33%	313	37%	320	37%	254	30%
Sub Core Zone	302	216	72%	272	90%	259	86%	250	83%
Overall Demand	**1,156**	**485**	**42%**	**585**	**51%**	**579**	**50%**	**504**	**44%**

Figure 12: On-Street Parking Demand Summary, Friday, May 31, 2019

Source: Timothy Haahs & Associates, Inc. 2019

The line chart below, **Figure 13**, shows the on-street parking demand trend in Study Area and the Sub Core Zone from **4PM to 10PM**. The highest Study Area demand was **37%** at **6PM and 8PM**. The highest Sub Core Zone demand was **90%** at **6PM**, which is **39%** higher than the overall parking demand for the entire Study Area. **Figure 14** on the next page is a "heat" map illustrating the overall Friday night peak parking demand at **6PM**.

Figure 13: Study Area vs. Sub Core Zone On-Street Parking Demand Comparison, Friday, May 31, 2019

Source: Timothy Haahs & Associates, Inc. 2019

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Figure 14: Peak On-Street Parking Occupancy Map (6PM), Friday, May 31, 2019

Source: Timothy Haahs & Associates, Inc. 2019

Saturday

TimHaahs conducted the Saturday data collection on **Saturday, June 1, 2019** from **10AM to 10PM**. The downtown peak on-street parking demand in the *Study Area* during the survey day was **465 spaces or 54% occupancy, which occurred at 8PM**.
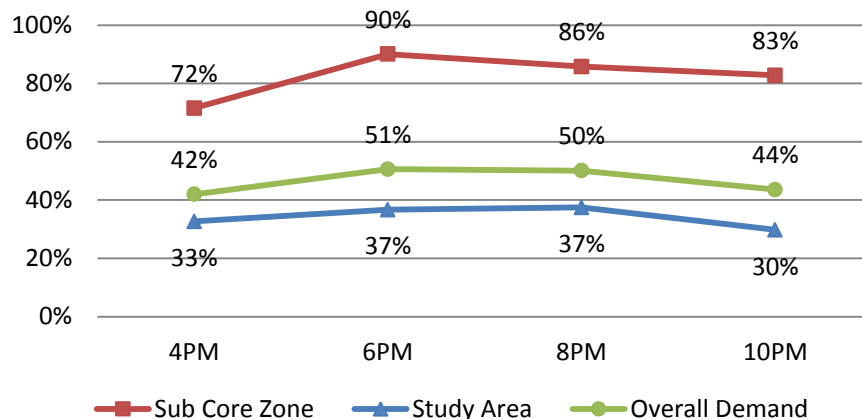
Figure 15: Study Area On-Street Parking Demand, Saturday, June 1, 2019

Street	Supply	10AM		12PM		2PM		4PM		6PM		8PM		10PM	
4th Street	160	74	46%	70	44%	86	54%	87	54%	93	58%	123	77%	122	76%
3rd Street	71	28	39%	25	35%	27	38%	26	37%	24	34%	38	54%	49	69%
2nd Street	72	2	3%	6	8%	11	15%	20	28%	21	29%	31	43%	17	24%
Western Avenue	147	67	46%	55	37%	22	15%	17	12%	31	21%	29	20%	36	24%
Scott Street	51	27	53%	26	51%	19	37%	14	27%	18	35%	26	51%	19	37%
Ripley Street	60	60	100%	18	30%	14	23%	14	23%	31	52%	36	60%	31	52%
Harrison Street	20	1	5%	2	10%	8	40%	7	35%	8	40%	14	70%	9	45%
Main Street	22	23	105%	13	59%	21	95%	21	95%	18	82%	27	123%	19	86%
Brady Street	35	20	57%	16	46%	19	54%	19	54%	18	51%	20	57%	15	43%
Perry Street	39	9	23%	11	28%	26	67%	26	67%	19	49%	31	79%	30	77%
Pershing Avenue	72	31	43%	15	21%	52	72%	58	81%	56	78%	59	82%	65	90%
Iowa Street	74	19	26%	18	24%	26	35%	27	36%	20	27%	30	41%	33	45%
Leclair Street	31	4	13%	4	13%	6	19%	6	19%	3	10%	1	3%	2	6%
Total	**854**	**365**	**43%**	**279**	**33%**	**337**	**39%**	**342**	**40%**	**360**	**42%**	**465**	**54%**	**447**	**52%**

Source: Timothy Haahs & Associates, Inc. 2019

The downtown peak on-street parking demand in the **Sub Core Zone** during the survey day was **308 spaces or 102% occupancy, which occurred at 8PM**. From **6PM through 10PM**, parking demand in the **Sub Core Zone** exceeded **90% occupancy**.

Figure 16: Sub Core Zone On-Street Parking Demand, Saturday, June 1, 2019													
Street	**Supply**	**10AM**		**12PM**		**2PM**		**4PM**		**6PM**		**8PM**		**10PM**	

Street	Supply	10AM		12PM		2PM		4PM		6PM		8PM		10PM	
3rd Street	107	75	70%	88	82%	101	94%	90	84%	106	99%	107	100%	113	106%
2nd Street	98	43	44%	55	56%	76	78%	79	81%	100	102%	100	102%	83	85%
Harrison Street	29	14	48%	11	38%	21	72%	21	72%	27	93%	28	97%	28	97%
Main Street	38	30	79%	35	92%	35	92%	29	76%	39	103%	41	108%	36	95%
Brady Street	30	24	80%	26	87%	31	103%	31	103%	32	107%	32	107%	27	90%
Total	**302**	**186**	**62%**	**215**	**71%**	**264**	**87%**	**250**	**83%**	**304**	**101%**	**308**	**102%**	**287**	**95%**

Source: Timothy Haahs & Associates, Inc. 2019

Saturday Parking Demand Summary

Overall, the downtown peak on-street parking demand summary during the survey day was **773 spaces or 67% occupancy, which occurred at 8PM**. When parking occupancy exceeds **100%**, it means that there are more cars parked than there are actual parking spaces. People may park illegally i.e. people may park in front of a fire hydrant, at bus stops and/or loading zones, or in unmarked spaces. This situation occurs in the **Sub Core Zone** fairly regularly on Saturday between **6PM and 8PM**.
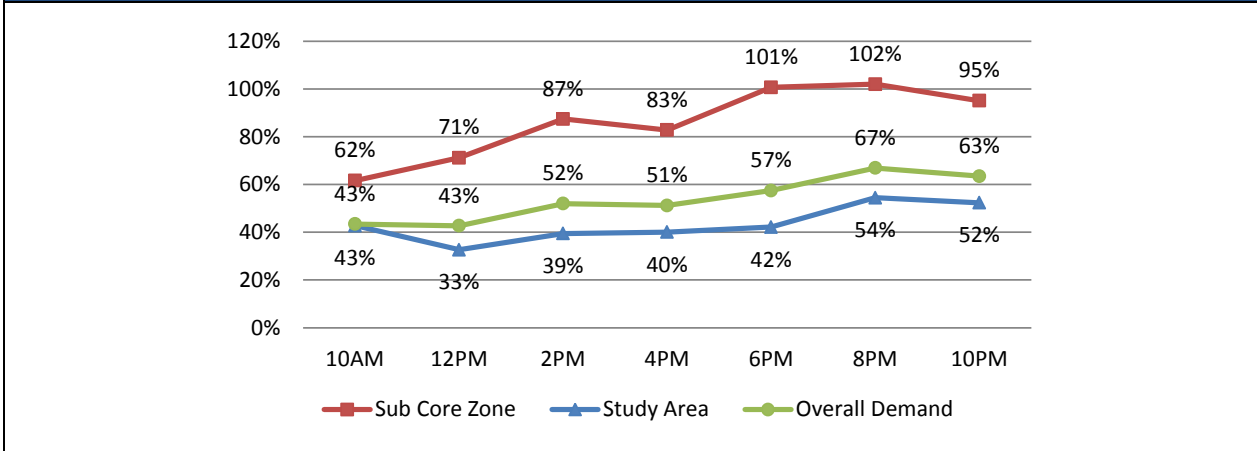
Figure 17: On-Street Parking Demand Summary, Saturday, June 1, 2019													

Type	Supply	10AM		12PM		2PM		4PM		6PM		8PM		10PM	
Study Area	854	365	43%	279	33%	337	39%	342	40%	360	42%	465	54%	447	52%
Sub Core Zone	302	186	62%	215	71%	264	87%	250	83%	304	101%	308	102%	287	95%
Overall Demand	**1,156**	**502**	**43%**	**494**	**43%**	**601**	**52%**	**592**	**51%**	**664**	**57%**	**773**	**67%**	**734**	**63%**

Source: Timothy Haahs & Associates, Inc. 2019

The line chart below, **Figure 18**, shows the on-street parking demand trend in the Study Area and the Sub Core Zone from **10AM to 10PM**. The highest Study Area demand was **54%** at **8PM**. The highest Sub Core Zone demand was **102%** at **8PM**, which is **35%** higher than the overall parking demand for the entire Study Area. **Figure 19** on the next page is a "heat" map illustrating the overall Saturday peak parking demand at **8PM**.

Figure 18: Study Area vs. Sub Core Zone On-Street Parking Demand, Saturday, June 1, 2019

Source: Timothy Haahs & Associates, Inc. 2019

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Figure 19: Peak On-Street Parking Occupancy Heat Map (8PM), Saturday, June 1, 2019

Source: Timothy Haahs & Associates, Inc. 2019

Off-Street Parking Demand

The City's three (3) publicly-owned ramps are used primarily for permit parking serving offices located near each respective ramp. Presently, the City sells 1,482 permits for the 1,854 total spaces within the three ramps. The remaining parking in the ramps is available for hourly and daily transient parking. The ramps all accommodate some special-use parking, i.e. city vehicles.

Figure 20: City Ramp Permit Parking

	River Center	Redstone	Harrison	Total
Total Spaces	746	454	654	1,854
Permits	674	373	435	1,482
Waitlist	20	0	0	20

Source: Timothy Haahs & Associates, Inc. 2019

Because not all permit parkers park on the same day, it is typical practice to sell more parking permits than spaces for a given facility. This is known as "oversell" and it allows the facility to accommodate more parkers. The amount of oversell varies from facility to facility and should be reviewed and adjusted at least annually. For the purpose of this illustration, we assume a 10% oversell for all three (3) ramps. The City should develop ramp-specific oversell ratios based on actual observed parking utilization by both transient and permit parkers.

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Figure 21: City Ramp Parking Availability with 10% Oversell Factor			
	River Center	**Redstone**	**Harrison**
Total Spaces	746	454	654
Permits	674	373	435
Oversell	10%	10%	10%
Available Spaces with Oversell Factor	**139**	**118**	**262**

*Note: (River Center Example: (746 – 674) + (ROUNDDOWN [(.1)(674)]) = 139

Source: Timothy Haahs & Associates, Inc. 2019

Understanding the actual usage patterns of permit and transient parkers may allow the City to eliminate current waitlists and increase the number of transient parkers that are able to be accommodated, as well as increase the total revenue. This will become progressively more important as the parking demand in the Sub Core Zone increases.

In addition to the number of permits sold, the City also provided TimHaahs with the parking ramps' occupancy data on **September 4, 2019** and **September 7, 2019** from **9AM to 2:30PM**.

River Center Ramp

River Center Ramp has a total of **746** parking spaces. On average, this facility sells **674** monthly parking permits equaling a commitment of approximately **90%**. On the weekday, the facility's peak occupancy was **528 spaces** or **71% occupancy,** which occurred at **9AM/10AM**. On the weekend, the facility's peak occupancy was **233 spaces** or **31% occupancy**, which occurred at **9AM/10AM**. **Figure 22** lists River Center Ramp's weekday and weekend parking occupancy.

Figure 22: River Center Weekday and Weekend Occupancy				
Day	**Time**	**Inventory**	**Occupancy**	**%**
Weekday	9AM/10AM	746	528	71%
9/4/2019	1:30PM/2:30PM		524	70%
Weekend	9AM/10AM		233	31%
9/7/2019	1:30PM/2:30PM		205	27%

Source: City of Davenport, 2019

Redstone Ramp

Redstone Ramp has a total of **454** parking spaces. On average, this facility sells **373** monthly parking permits with an approximate **82%** permit sell capacity.

On the weekday, the facility's peak occupancy was **326 spaces** or **72% occupancy,** which occurred at **9AM/10AM**. On the weekend, the facility's peak occupancy was **157 spaces** or **35% occupancy**, which occurred at **1:30PM/2:30PM**. **Figure 23** lists Redstone Ramp's weekday and weekend parking occupancy.

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Figure 23: Redstone Ramp Weekday and Weekend Occupancy				
Day	**Time**	**Inventory**	**Occupancy**	**%**
Weekday	9AM/10AM		326	72%
9/4/2019	1:30PM/2:30PM	454	307	68%
Weekend	9AM/10AM		154	34%
9/7/2019	1:30PM/2:30PM		157	35%

Source: City of Davenport, 2019

Harrison Ramp

Harrison Ramp has a total of **654** parking spaces. On average, this facility sells **435** monthly parking permits with an approximate **67%** permit sell capacity. On the weekday, the facility's peak occupancy was **275 spaces** or **42% occupancy,** which occurred at **1:30PM/2:30PM**. On the weekend, the facility's peak occupancy was **156 spaces** or **24% occupancy,** which occurred at **1:30PM/2:30PM**. **Figure 24** lists Harrison Ramp's weekday and weekend parking occupancy.
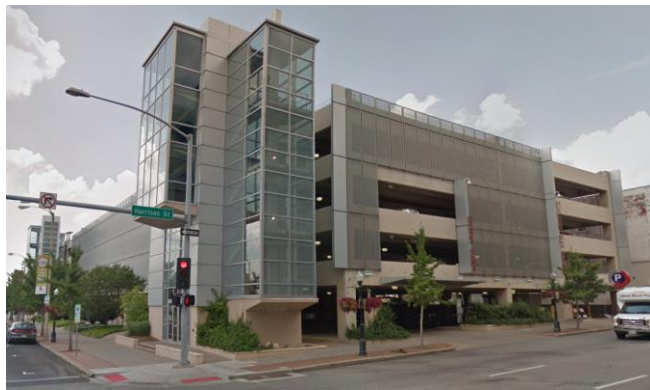

Figure 24: Harrison Ramp Weekday and Weekend Occupancy				
Day	**Time**	**Inventory**	**Occupancy**	**%**
Weekday	9AM/10AM		255	39%
9/4/2019	1:30PM/2:30PM	654	275	42%
Weekend	9AM/10AM		129	20%
9/7/2019	1:30PM/2:30PM		156	24%

Source: City of Davenport, 2019

On-Street Parking Demand Summary

Weekday On-Street Parking Demand: the *overall* downtown peak on-street parking demand during the survey day was **532 spaces** or **46% occupancy, which occurred at 6PM.** The downtown peak on-street parking demand in the *Sub Core Zone* was **265 spaces** or **88% occupancy, which occurred at 6PM**.

Friday Night On-Street Parking Demand: the downtown peak on-street parking demand during the survey day was **585 spaces** or **51% occupancy, which occurred at 6PM.** The downtown peak on-street parking demand in the *Sub Core Zone* was **272 spaces** or **90% occupancy, which occurred at 6PM**.

Saturday On-Street Parking Demand: the downtown peak on-street parking demand during the survey day was **773 spaces** or **67% occupancy, which occurred at 8PM.** The downtown peak on-street parking demand in the *Sub Core Zone* was **308 spaces** or **102% occupancy, which occurred at 8PM**.

On-street occupancy in the overall Study Area is adequate. However, in the Sub Core Zone both on weekdays and weekends, on-street parking utilization exceeds 85% occupancy. This level of parking demand warrants the consideration of increased enforcement of time limits and/or the implementation of fee parking.

Off-Street Parking Demand Summary

The downtown peak off-street weekday parking demand during the survey day was **1,109 spaces or 60% occupancy, which occurred at 9AM/10AM**. The downtown peak off-street weekend parking demand during the survey day was **518 spaces or 28% occupancy, which occurred at 1:30PM/2:30PM**. **Figure 25** lists the total overall parking demand for the downtown off-street public ramps' weekday and weekend parking occupancy.

Figure 25: Off-Street Parking Summary in City Ramps, Weekday and Weekend Occupancy				
Day	**Time**	**Inventory**	**Occupancy**	**%**
Weekday	9AM/10AM		1,109	60%
9/4/2019	1:30PM/2:30PM	1,854	1,106	60%
Weekend	9AM/10AM		516	28%
9/7/2019	1:30PM/2:30PM		518	28%

Source: City of Davenport, 2019

Parking Operations Review

Parking Administration and Management

Virtually all municipalities recognize the importance of providing adequate parking for residents, visitors, shoppers and people employed within their communities. However, not every municipality realizes the importance of integrating all aspects of providing public parking within the framework of a "parking system".

When parking functions are divided between multiple municipal departments, no single department or manager has the full authority to plan, supervise, and operate municipal parking services. Due to this lack of centralization, there is less planning, performance analysis, and control of the entire parking system and operations. In addition, it is difficult to monitor and assess performance of personnel providing parking services, as they also perform non-parking related duties. Another issue associated with the delivery of parking functions and services by multiple departments is that the municipality often does not know the actual cost of providing public parking or the net revenue derived from any parking fees. When parking services are decentralized, department heads or City officials typically do not prepare a unified parking budget to determine how much manpower, salary and wages, equipment, supplies, vehicles, gas, maintenance costs, insurance, utilities, snow removal, and outside contractor expenses are actually attributed to providing parking services.

The efficient and effective way to provide parking services to municipal residents and the public at large is via a unified parking system. In this context the term "parking system" means the delivery of municipal parking services to the public by a single government entity or department with a "parking director" charged with the responsibility of planning, managing, and operating all individual aspects or functions of on- and off-street parking services. This single point of responsibility can also outsource all or components of the municipally-operated parking

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management services to a qualified third party, parking operator. The goal of a unified parking system and parking entity is to centralize parking administration and management including:

- Communication of the mission, goals and objectives of the parking system;
- Parking planning for existing needs and new development;
- Establishment of a single point of responsibility;
- Regular assessment of parking strategies;
- Creation of guidelines and policies / ordinances;
- Ensure consistent parking enforcement;
- Provide proper maintenance of facilities, signage and equipment; and,
- Commitment to customer service.

The person in charge of parking, be it a director, a manager, etc., should receive professional industry training. The International Parking & Mobility Institute (IPMI) offers a Certified Administrator of Public Parking (CAPP) Certification. This certification is respected on a global level as the leading credential in parking and raises parking management to the next level. Those who are CAPP certified are considered the best of the industry, providing service, demonstrating competence as they advance the profession, and leading with innovation, professionalism and expertise. More information pertaining to CAPP can be found here https://www.parking-mobility.org/professional-development/capp-program/.

Parking Department

While many of the functions of parking management are under the Parking Division of the Neighborhood Services Department, we believe that a stand-alone parking department on par with other municipal departments, will convey the City's commitment to delivering parking services efficiently and effectively to local stakeholders, and will provide and better ensure a concentrated focus and effort to manage the City's parking resources using industry best practices.

The parking department would have the responsibility to oversee and manage all or most parking-related functions including:
- Enforcement;
- Facility maintenance / security;
- Permit issuance;
- Recommendations for modified ordinances and regulations;
- Parking ticket adjudication;
- Revenue collection and accounting;
- Parking specific staff training and professional development; and,
- Parking-related communications

In addition to parking management, the parking department can play a leadership role in establishing parking demand management initiatives. These initiatives typically include bike share or scooter share programs, shuttle bus operations and other programs to produce the City's reliance on single-occupancy vehicles (SOVs).

Parking Advisory Committee

A good interim step to the creation of a centralized parking administration entity is establishing a City Parking Advisory Committee. This committee would meet on a regular basis - once every quarter or so - and include representatives from the City, the PEO/Ambassador supervisor, the Office of Planning & Economic Development, downtown residents, business owners, the Downtown Davenport Partnership, landlords, etc. The purpose of this committee would be to review, discuss, and identify parking issues or concerns with the intent of directly addressing problems and making recommendations to the City Council for the adoption of updated or revised parking policies and ordinances. The Parking Advisory Committee is an excellent forum for coordinating the

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necessary interaction and communication between stakeholders and parking management personnel. The Parking Advisory Committee provides the City with a resource to identify parking issues and field complaints, thereby reducing the amount of City Council meeting time dedicated to parking problems.

RECOMMENDATIONS: Parking Administration and Management

The City of Davenport's Parking Division within the Neighborhood Services Department currently oversees all of the public parking in the Study Area. We would recommend the following for the City's parking administration and management:

1. The City should consider creating a separate department, within or outside of the Neighborhood Services Department, specifically for parking administration and management of the City's public parking resources.
2. The City should consider creating the Davenport Parking Advisory Committee to address comments, concerns and challenges associated with public parking in the City of Davenport.

With the establishment of a centralized, single-responsibility parking entity, it is critical to parking operations that "best practice" guiding principles also be established and followed to ensure effective parking management.

2nd Street Weekday Occupancy between Main Street and Brady Street

Guiding Principles

The purpose of guiding principles is to establish a framework for current and future decision-making of the parking program that is based on the City's broader goals and objectives. Parking and transportation management is rich in tactical decision-making. However, a lack of focus on strategic outcomes can keep parking programs from playing their essential role in community and economic development and promoting quality of life for the communities for which the programs exist. The following guiding principles should be formally adopted and reviewed periodically to ensure alignment with the City's broader goals:

1. Strategic Importance

Providing adequate parking resources is of critical importance to the City and its stakeholders. Providing enough parking and managing existing parking and transportation resources will require capital, operating, and human resources, all of which are necessary to maximize access in support of the City's larger goals.

2. Economic Development Focus

The parking program exists to support the City's economic development goals. This creates a critical connection between the parking program, economic activity, and the factors most closely impacted by parking management strategies. It encourages a sharing of both the burden and the rewards of parking management. Businesses and their customers are more likely to support parking management strategies if they can see a direct impact and experience the benefits of improved access and mobility for themselves that is brought about by progressive parking management strategies. It is possible that the City could promote parking incentives such as the 'Parking Cash Out Program' discussed further on pages 27-28 of this report to help draw new businesses into Downtown Davenport.

3. Parking Allocation

Prioritization of the use of parking resources by facility and area, and by user group, must be carefully defined, understood and communicated. As demand for parking intensifies, it will be necessary to segment parking users and facilities resulting in limited access by some in favor of others. For example, curb space adjacent to retail / restaurant establishments should be reserved for short-term stays. Enforcement and pricing disincentives and/or time limitations that discourage long-term stays will force those who may previously have enjoyed close access to utilize other parking facilities that are available or priced for long-term stays. These facilities are likely to be remote by comparison to high demand areas.

4. Marketing/Communications

Parking resources for public use must be arranged, marketed, and communicated as a system intended to best serve the various user groups. Information regarding Davenport's parking system must be broadly disseminated, include multiple layers, outlets and tactics, and the system must be branded as a cohesive and progressive whole.

5. Enterprise Model

In time, the City's parking program should become self-supporting, and any residual revenue derived from the system should be invested back into the area from which parking revenues are earned. Preferably, this will be on transportation-related improvements, infrastructure improvements or improvements that support the City's economic development goals.

6. Data Driven Parking Management

A rationalized approach to parking management should define Davenport's parking program. Parking utilization data should be collected and used to determine the most appropriate management and planning strategies. A sustained peak-hour utilization of 85% will be the base occupancy benchmark. The desired peak occupancy of 85% allows there to be some amount of spaces available, therefore reducing customer dissatisfaction, congestion, and environmental impacts of excessive driving to look for available parking. Peak-hour utilization and other data should be developed into a metric of Key Performance Indicators (KPIs) and can be used to guide the strategic direction of the parking program.

7. Customer-Centric

Davenport's parking program should be exemplified by exceptional customer service. Davenport values its stakeholders and parking and transportation patrons and the City will be transparent, collaborative, and communicative in its parking management dealings. Parking services and policies need to be viewed as fair, equitable, thoughtful, and proactive.

RECOMMENDATIONS: Guiding Principles

TimHaahs would recommend that the City develop parking program guiding principles. These guiding principles should be approved by the City Council and treated as strategic guidance to the parking department.
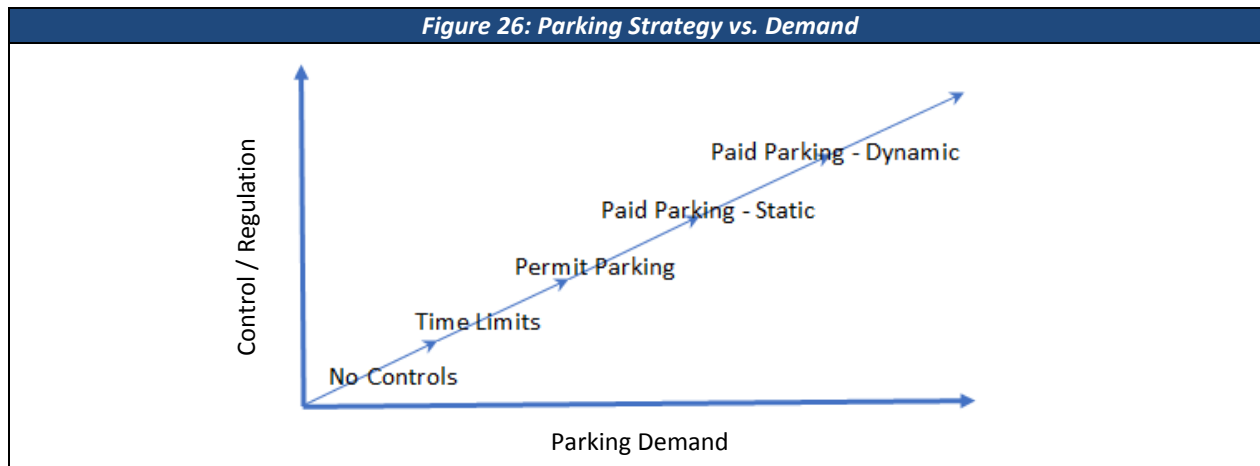
Fee Parking

As Davenport's CBD continues to develop, demand for on-street and public parking will likely increase. Accordingly, in the near future the City and its downtown stakeholders should consider the implementation of fee parking for the highly convenient on-street parking. There is always a fear that implementing a charge for parking on the street and/or in public lots will dissuade customers to shop and / or dine in the downtown. This is a legitimate concern, but the benefits of fee parking, both in terms of better regulating the public parking supply and generating income to support future parking facilities and downtown improvements, is an effective strategy to improve access to downtown businesses and support continued development. Appropriate parking pricing can provide numerous benefits including:

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- Charging users directly for parking tends to be more efficient and equitable, and generates revenue that can finance new facilities or services;
- Increased turnover of the most convenient spaces. This increases consumer convenience and reduces cruising for parking (searching for an unoccupied space);
- Reducing the number of spaces needed to meet demand, reducing total parking costs, and allowing more compact development; And,
- Encouraging longer-term parkers to use less convenient spaces (such as off-street lots/ramps or on-street parking in the CBD fringe).

Typically, on-street parking is most appropriately utilized by short-term users, such as customers and visitors, or those who may only have a small amount of time for their visit. Ideally, convenient on-street parking spaces that are easily accessed and proximate to many destinations, are utilized by a large number of vehicles on a daily basis and experience high turnover. Conversely, off-street parking is best utilized for longer-term parkers such as employees or visitors/customers who are spending several hours in the area or may want to park without time restrictions. Davenport uses pricing and time limits to manage its parking but does so in a uniform manner, meaning that the pricing that is charged for both on- and off-street parking is constant regardless of the demand. Utilizing a demand-based approach that segments parking users by facility, based on established and communicated prioritization, will produce the most efficient and effective parking program.

Figure 26 graphically illustrates parking strategies in comparison to parking demand.

Figure 26: Parking Strategy vs. Demand

Source: Timothy Haahs & Associates, Inc. 2019

RECOMMENDATIONS: Fee Parking

Because Davenport exhibits different parking demands for the different parking areas, it is recommended that a tiered approach be used based on demonstrated demand. This approach segments parking resources by demand and utilization and applies different demand management and regulating strategies for different areas. The following graphic, **Figure 27**, outlines how various levels of parking occupancy can guide time limits and pricing strategies to regulate on-street parking.

Figure 27: On-Street Parking Regulation Matrix

Peack Occupancy	Unrestricted or time-limited parking areas	Existing pay-parking areas
>90%	Introduce shorter time limits	Increase parking fee
>85%	Introduce shorter time limits and fee parking	Increase parking fee
50% - 84%	Periodic monitoring of occupancy	Periodic monitoring of occupancy
<49%	Increase time period for parking	Reduce parking fee

Source: Timothy Haahs & Associates, Inc. 2019

Implementing a demand-based, market-driven model requires a periodic assessment of the actual parking demand. At a minimum, an annual assessment of the Study Area conducted during typical conditions is recommended.

On-Street Parking Pricing

As previously referenced, as the demand for public parking in the downtown grows, the public parking availability will diminish. This situation is further exasperated by the present practice of many downtown merchants and their employees occupying the most convenient on-street spaces directly adjacent to the businesses. Charging for on-street parking is the most effective way to regulate parking availability and increase accessibility for the intended users - downtown patrons. In today's environment, the inability to find a parking space is as much, if not more, of a deterrent to patronizing a local business as is the requirement to pay for parking. Davenport currently does not charge for on-street parking but the current demand for Sub Core Zone[1] parking warrants the consideration of fee parking. As such, in the near future the City should consider charging a reasonable fee for parking and instituting pricing strategies that deter long-term parkers and downtown employees from monopolizing the most convenient on-street spaces thereby helping to ensure that there is convenient parking available for downtown patrons.

Should the City consider fee parking, TimHaahs would recommend a rate of $1.00 per hour in the Sub Core Zone with a two (2) hour time limit. The pricing will encourage turnover of the Sub Core Zone's on-street parking spaces. On-street parking outside of the Sub Core Zone could remain free at the discretion of the City, but should be monitored closely to evaluate future parking demand. **Figure 28** outlines a potential fee parking schedule within the Sub Core Zone.

Figure 28: Fee Parking Schedule

Area	Hours/Days	Rates
Sub Core Zone	10am-10pm/Mon-Sat	1st hour $1.00 2nd hour $1.00 2-hour time limit

Source: Timothy Haahs & Associates, Inc. 2019

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[1] 2nd Street to 4th Street and Pershing Avenue to Ripley Street

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In order to make fee parking effective, it must free up some parking spaces and promote turnover. When implementing parking fees there are a variety of considerations to be addressed:

- Net revenue from parking (after operational expenses), to the greatest extent possible, should be re-invested in the CBD for improvements such as new parking facilities, additional maintenance services, street sweeping, streetlights, landscaping, etc. Stakeholders are more likely to support fee parking if some of the revenue will be used to benefit the CBD.

- Critical to the successful implementation of parking fees is an effective communications and outreach campaign explaining the reasons for and benefits of implementing fee parking along with details on how to use the payment technologies in conjunction with street ambassadors and soft enforcement until the general public is acclimated.

- A major consideration regarding the implementation of parking fees is the convenience of payment, rather than the need to pay. If it is highly convenient to pay a parking fee, people will be much more accepting of the requirement. It is critical that when parking fees are newly implemented, the method of payment is proven and technologically advanced to accept multiple forms of payment. (See the 'Parking and Technology' section of the report).

TimHaahs surveyed three municipalities for a fee parking rate comparison. **Figure 29** lists parking rates for the municipalities.

Figure 29: Municipal Parking Rates							
Cities	Population (Est 2016)	On-Street Parking	Off-Street Parking Fee (Lot)		Off-Street Parking Fee (Garage)		Residential Parking Permit
			Daily	Monthly	Daily	Monthly	
Davenport, IA	102,612	Free	N/A	N/A	0 hour to 2 hours $1.00 2 to 4 hours $2.00 4 to 6 hours $3.00 6 to 8 hours $4.00 8 to 12 hours $5.00	Monthly: $65 Downtown Residents: $40 Reserved: $105	No
Peoria, IL	112,883	1 hour $1.00 2 hours $2.00 2 hours time limit	0 to 30 minutes $0.75 24 hours $11.00	N/A	0 to 30 minutes $0.75 24 hours $11.00- $14.00	Monthly: $58.00- $75.00 Event: $5.00	$10/Year (Renew Yearly)
Chattanooga, TN	177,571	1 hour $1.00 2 hours $2.00 2 hours time limit	Riverfront and Theatre Parking Lots Up to 1 Hour $1.00 Up to 2 hours $2.00 Up to 3 hours $4.00 Over 3 hours $6.00 The Renaissance Park Lot Up to 1 hours $1.00 Up to 2 hours $3.00 Up to 3 hours $4.00 Over 3 hours $6.00	$25.00	CARTA North Garage 0 to 30 minutes $2.00 30 minutes to 1 hour $3.00 1 hour to 1.5 hours $4.00 1.5 to 2 hours $5.00 2 to 2.5 hours $6.00 Over 2.5 hours $7.00 CARTA South Garage 0 to 1 Hour – $2.00 1 to 2 Hour – $4.00 Over 2 Hour – $6.00 CARTA Northshore Garage Up to 1 hour $1.00 Up to 2 hours $2.00 Over 2 hours $4.00	CARTA North Garage Monthly: $65.00 $48.06 for groups of 5 or more Event rates as posted. Hospitality Rate: $30.00 (Roof Only) CARTA South Garage Monthly: $50.00 Hospitality Rate: $30.00 (Roof Only) CARTA Northshore Garage Monthly: $25.00	$25/Year (Renew Yearly)
Cedar Rapid, IA	132,228	$1.00 per hour in the Core Downtown area $0.60 per hour in the Non-Core areas (Time limit ranges from 30 minutes to 10 hours)	$0.75 per hour	Monthly: $25.00-$40.00 Reserved: $110.00	$0.75 per hour	Monthly: $55.00- $85.00 Rooftop: $35.00 Reserved: $110.00	N/A

Source: Timothy Haahs & Associates, Inc. 2019

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All three (3) cities charge for the use of on-street parking in combination with time limitations. Currently, each city charges $1.00 per hour. Cedar Rapids utilizes a more sophistocated model where non-core on-street parking is offered at $0.60 per hour. Peoria and Chattanooga limit parking to two hours while Cedar Rapids offers time limits ranging from 30 minutes to 10 hours.

Promote Off-Peak Garage Utilization and Employee Parking Permits

As in the report, the majority of the high demand parking occupancy is within the Sub Core Zone. This is likely because the convenient, on-street spaces are free and enforcement stops at 5pm in comparison to the paid parking in the ramps that are enforced 24/7. The ramps are major parking resources for Downtown Davenport, providing over 1,800 parking spaces within or in close proximity to the Sub Core Zone. During a typical weekday, the overall peak parking demand in the ramps is 60% occupancy. During a typical weekend, the overall peak parking demand in the ramps is 28% occupancy. This demonstrates approximately 40% parking availability on the weekdays and approximately 72% parking availability on the weekends in the ramps.

These available parking resources can be utilized to relieve the high utilization of on-street parking within the Sub Core Zone of Downtown Davenport to satisfy any existing and future parking demand. The City could sell employee parking permits that allow downtown employees to park in the ramps after 4PM on during the off-peak hours at a significantly reduced rate in order incentivizing utilization of the ramps to free up high demand on-street spaces.

Additionally, the City of Davenport could promote a 'Parking Cash Out Program' that would encourage employers to provide parking incentives to their employees. The employers who provide subsidized parking for their employees can offer a cash allowance in lieu of a parking space. In essence, this program allows the employer to offer the employee a cash out bonus or a parking space at work. Studies have showed that cash allowances in lieu of parking can encourage employees to find alternate means of commuting to work, leaving the valuable on-street parking spaces available to patrons (https://ww3.arb.ca.gov/planning/tsaq/cashout/cashout_guide_0809.pdf). This could potentially draw in new businesses to Downtown Davenport if they know that their employees will be able to receive parking incentives.

The city currently offers two parking permits for Downtown Davenport, one for downtown businesses and one for residents. The business permit costs $65 per month and the resident permit costs $40 per month. The City could consider offering the addition permits:

Weekday after hour employee permits – The City can offer downtown business employees to park in the garage after 4PM and on weekend with a significant discounted parking permit rate. Currently, business employees are occupying on-street parking spaces extensively during dinner time around 6PM. Based on TimHaahs on-site observation, part of the on-street spaces occupancy was due to business employees occupying on-street spaces. Therefore, by offering downtown business employees a discounted garage permit after 4PM would reduce on-street parking occupancy, and free up high demand on-street spaces.

Parking Equipment / Technology

As referenced, the equipment utilized to collect parking fees is a critical component to the successful implementation of fee parking. User acceptance, customer convenience, reliability, and revenue control are crucial to imposing and collecting parking fees. Today, parking payment technologies such as coin and debit/credit card-enabled single-space meters, multi-space meters that accept debit/credit card, bill and coin payments, and pay-by-cell programs are reliable systems that are quick, user-friendly and convenient. The payment technologies to collect both on-street and off-street public parking fees would likely include one of or a combination of single-space meters, multi-space pay stations, and/or pay-by-cell technology.

Standard Single-Space & Debit/Credit Card-Enabled Meters and Multi-Space Meter Pay Stations

Standard electronic parking meters are still the most common technology for many downtowns and cost approximately $225 per meter plus installation. The standard electronic meter can be programmed to offer a multiple rates and time limit structures. Standard single-space electronic meters do not accept debit or credit cards, which is a major drawback since most downtown patrons do not typically carry a large amount of coins to feed the meters. As a result, this fee collection option is becoming less desirable.

Debit/credit card-enabled meters allow users to choose from multiple payment options including debit/credit cards, coins and 'smart' cards. Debit/credit card-enabled parking meters are compatible with pay-by-cell parking systems. Initial parking payments can be made at the meter and with an integrated cell phone and debit/credit card meter system. With pay-by-cell technologies, parking meter time can be refilled via one's cell phone. Debit/credit card-enabled parking meters cost approximately $500 per single-head meter and $750 per double-head meter. On average, each parker's debit/credit card payment costs the municipality $0.20 to $0.35 per transaction. Communications and software maintenance costs are approximately $7 per meter per month for single-head meters and $13 per meter per month for double-head meters. Meter mechanism maintenance contracts are optional and typically cost $30-50 per year per meter.

Enhanced parking meters, such as multi-space pay stations and single-space debit/credit card-enabled meters are usually not deployed unless parking fees are at least $1.00 per hour or they are regulating long-term daily parking with a rate of $3.00 or more in order to absorb the cost of purchasing and operating the technology.

Multi-space meter pay stations are well received by the public and can provide the convenience of multiple payment options including coin, bills and debit/credit cards. They can also be programmed to offer various parking rates and time limitations, according to time of day. They are very cost-effective when regulating multiple (30-50) off-street parking spaces that are grouped together, and are in close proximity to each other or are in a facility that has a single pedestrian point of entry and exit. The cost of multi-space meters is approximately $7,000-$10,000 to purchase; this estimate includes solar panels and dollar bill acceptors but excludes the weather enclosure, which can cost an additional $1,500 to $2,000. In addition to the purchase and installation costs for multi-space pay stations, they require monthly, communications and software maintenance contracts at approximately $40 per month, hardware maintenance costs at $40 per month, receipt roll paper at $35 per roll (handles approximately 1,500 transactions), and debit/credit card costs at approximately $0.25 per transaction.

Pay-by-cell phone systems are being implemented in a growing number of towns and cities throughout the U.S. These systems allow patrons to pay for their parking space through various cell phone-based commands. Using their smart phones, patrons can also purchase or extend their time at a meter or facility from a remote location. Text or email notifications can be sent to patrons when their parking time is about to expire. These systems can operate in conjunction with parking meters and multi-space pay machines. The pay-by-cell payment technology is presently implemented in Davenport's public ramps through the Park Mobile App. The Park Mobile system is a

fully integrated mobile payment option which has been designed to interface and offer an alternate form of payment from the traditional meters, machines and related gated systems used in on- and off-street parking.

The convenience of paying for parking by smart phone and the ability to remotely activate and reactivate the parking session is a significant benefit to downtown users, including retail or restaurant patrons, residents and business owners/employees. Cell phone payment systems eliminate additional trips to meters/pay stations to increase the time for one's parking session. Merchants are able to establish accounts to pay for discounted customer parking via cell phone, should they desire to do so. Pay-by-cell systems can also be a financially appealing option, as they require minimal investment on the City's part. Typically the City incurs little cost to implement the pay-by-cell system because the service provider sets up the operating program, installs signage, markets the service, and negotiates an appropriate service fee to be added to individual parking transactions (typically $0.25 - $0.40 per transaction) with the City. Because pay-by-cell systems are dependent on a debit/credit card payment, there are transaction fees associated with this service that can either be borne by the City or transferred to the user.

If the City is willing to implement a pay-by-cell payment method on a wider scale, in order to incentivize parkers and increase the Park Mobile adoption rate, the City can provide first-time mobile app users with a discount that can be applied with a promotion code. This offer can be set so that it is only applicable for a limited period of time. If on-street parking fees are adopted, a program to offer discounted parking to Davenport residents could be implemented through the Park Mobile pay-by-cell service that is currently being utilized. The Park Mobile service allows users to download a mobile app onto their phones, upload their credit card information, and indicate the particular zone that they wish to park, enter their car's license plate number, and pay for their desired parking duration.

The Resident Discount Program would operate whereby residents would register with the City by providing the required residency information and their vehicle's license plate number. The license plate data is then integrated with the Park Mobile service and the resident downloads the Park Mobile App. When the resident goes to park at an on-street meter, either citywide or in specified areas offering the Resident Discount Program, the resident opens the Park Mobile App, enters their license plate, and then the service is able to automatically recognize them as a resident, offering them the discounted rate. This meter discount can be applied through the Park Mobile App.

Parking Enforcement

Fair and consistent enforcement of parking regulations is critical to the free flow of traffic, vehicular and pedestrian safety, and parking turnover to support local residents, retailers and merchants. Inconsistent enforcement of regulations is detrimental to the parking program as it catches people unaware and provides the impression that parking enforcement is unpredictable, arbitrary and capricious. Typical parking enforcement standards are as follows: metered zones should be enforced every one (1) hour; high volume CBDs should be enforced every 30 minutes; and, Residential Permit zones and 2-hour zones should be enforced every two (2) hours, (Source: Bier Associates).

Staffing

The City's on-street parking is used by patrons of multiple retail and commercial establishments. The on-street parking in the downtown Sub Core Zone is restricted to 2-hour parking 7AM and 5PM, Monday through Friday. However, because PEOs are involved with other non-enforcement activities, we believe that there are varying levels of enforcement, and as a result, these spaces are regularly utilized by retail business owners and employees, thereby reducing the availability of the most convenient spaces intended for retail patrons.

With increased growth in the number of visitors, patrons and businesses in the downtown district and the competition for the curb by Transportation Network Companies (TNCs) and delivery vehicles, parking will be a growing concern and demand for curb space will increase. Accordingly, it is important to ensure that there is a regular level of enforcement to promote adherence to the variety of parking regulations and time limits throughout the downtown. We recommend that all time limit parking be enforced consistently to promote turnover. During our two and a half days of field observations, we did not observe PEOs checking/chalking cars.

Currently, parking falls under the responsibility of Davenport's Parking Division within the Neighborhood Services Department. There is currently a staff of 4 PEOs / parking ambassadors who are assigned parking enforcement duties. These are comprised of 1 full and 3 part-time staff for a total full-time equivalency of approximately 1.72 (1 FTE plus 3 PTE totaling 29 hours weekly), or 1,268 spaces per FTE[2]. Parking Enforcement Officers (PEOs) or Parking Ambassadors have a challenging job and should be provided with parking industry specific customer service and conflict resolution training to provide them with the necessary tools to better perform their responsibilities. The training topics include the role of the parking enforcement officer, and how this role interacts with the overall parking initiative and / or program; identifying parking demand and utilization by area / zones; citation productivity; and strategies to reduce complaints. Parking situations often lead to contentious interactions between staff and the general public and the parking staff that interact with the public will benefit from specialized customer service and conflict resolution training to effectively perform their jobs. Parking specific training is available through the International Parking and Mobility Institute (IPMI) (https://www.parking-mobility.org/) or through regional parking associations. As parking demand increases, the City should ensure adequate enforcement.

Figure 30 below is a table displaying comparable city enforcement programs.

Figure 30: Enforcement Program Comparisons				
	Chattanooga	**Peoria**	**Cedar Rapids**	**Davenport**
Inventory				
Ramp Spaces	1350	5283	3788	1854
Lot Spaces	1025	2296	1555	1025
On-Street	2250	3000	2000	854
Total	4625	10579	7343	3733
Enforcement				
Days	Mon-Sat	Mon-Fri	Mon-Fri	Mon-Fri
Hours	8am-6pm	8am-5pm	9am-6pm	9am-5pm
Staff (FTE)	10	5	3	1.72
Spaces/FTE	328	1059	1185	1268

Source: Timothy Haahs & Associates, Inc. 2019

Though each parking enforcement program is unique and requires a different level of staffing, a general industry-based starting point is 1,200 spaces per full-time employee of enforcement staff for a typical Monday-Friday, 8AM-5PM schedule. At 1,268 it appears that Davenport's current staffing level is adequate for monitoring on-street time limits and parking lot violations. However, Davenport will need more full-time PEOs if the City plans to implement on-street fee parking.

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[2] (1025+854+302)÷1.72=1,268. This is a rough measure of enforcement staffing coverage though it is recognized that not all enforcement staff are deployed at the same time.

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Curb Management

In today downtown it is critically important to manage high demand curb space. Be it the increasing popularity of drop-off and pick-up zones and ride-hailing services taking place (i.e. Uber / Lyft), the loading zone space that is necessary for package deliveries in our growing e-commerce world, on-street parking spaces including illegal and/or double parking, pedestrians and street vendors, or a bike lane for alternative modes of transportation (i.e. bikeshare and e-scooters), everyone wants access to the curb. According to Brian Barth's article published in the American Planning Association's June 2019 magazine, the curb is being impacted as follows:

- In San Francisco, TNCs account for approximately one in five vehicles on the road and two-thirds of all traffic violations.

- The past 10 years, ecommerce has increased, causing loading traffic delivery to double.

- Today, there is one internet-based delivery on a given day per 25 Americans and this number is expected to double within a five-year span.

- Curb space in high demand areas can potentially be up to 30 times more valuable if reconfigured from conventional paid parking to flexible pickup and drop-off zones to accommodate fast-paced movement of multiple transportation modes, according to Schrieber.

These various factors are challenging the traditional ways we are used to managing curb space, making it more important than ever to evolve how we plan and effectively enforce on-street parking. The curb space needs to potentially shift from primarily being focused on on-street parking to more flexible accommodations that include pick-up/drop-off zones for passengers and goods. Given the high value of curb space as a public asset in its own right, it is important to manage this real estate asset efficiently and effectively in alignment with the municipality's broader strategic goals and objectives.

RECOMMENDATIONS: Parking Enforcement

1. Consider adding enforcement staff especially if paid parking is implemented.
2. Provide professional parking industry training for all parking enforcement officers / parking ambassadors.

Parking Communications and Marketing

A common problem experienced by municipal parking systems is that there is little effort expended to "brand", communicate, and promote the mission, assets and functions of the parking system. A brand goes beyond an organization's name, logo and visual identity. In an effort to support the ongoing redevelopment, the City should undertake a program to inform its residents, downtown merchants, employees, shoppers, commuters, and the general public on how the parking system operates. The communications program should coordinate all parking information under a single brand and address the need for consistent enforcement and the value of limited parking assets. The objective in promoting a parking system is to transform what can often be perceived as a negative image into a positive one. A brand represents an unspoken promise, or commitment – of quality, value, professionalism and financial stewardship – about the consistent experience patrons can expect when interacting with the Parking Department. When parkers see an organization's quality signage, communication collateral or uniforms, etc., it creates an image or perception of professionalism.

The key pieces of establishing an organizational brand includes: 1) creating an organizational vision, mission and set of shared values; 2) developing key messaging; and, 3) identifying the organization's key audiences.[3]

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[3] Source: Solesbee Group, used with permission.

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The City should produce communication material (both printed and digital versions) that provides valuable parking information, such as parking locations, number of parking spaces, parking rates and time limitations, etc. to residents, employees and downtown visitors. The City should also coordinate with the Quad Cities Chamber to create promotional initiatives to market downtown retail and restaurant establishments and communicate the location of available parking for patrons. The City should also include a dedicated page for parking to include the latest parking news, plans, policy or ordinance changes, and improvements with how they will affect the community on its current webpage.

Snow Emergency Events

The City has a comprehensive plan for dealing with snow events which includes a method for communicating the occurrence of snow events to parking patrons and any impacts it will have on parking. Information is posted on the City's website and patrons can sign up for notifications via text, phone or email. Information is also shared via a Facebook page. Ordinance 10. 64. 140A requires all vehicles that are parked on public property to move at least one (1) mile during a 24-hour period and allows for the enforcement of abandoned vehicles during snow and ice events. This information is clearly listed for parkers on the City's website under the Public Work's 'Snow and Ice' section and even provides a link to the local weather forecast. The City's website also offers parking alternatives for residents and visitors on Posted Snow Routes to include:

- Parking in the driveway or garage;
- In Davenport's downtown, the City allows parkers to park in any one of the City's three (3) publicly-owned ramps for free during the Snow Emergency; And,
- If necessary, property owners may park on their lawn until the emergency expires.

The snow event plan for parking and its respective communications is favorable. We would encourage the City to use their approach to snow events as a template for other special events, either planned or unplanned. Additionally, it may be advisable to invite pay-by-cell users to opt in to the notification system as a way to increase the number of recipients receiving snow and special event information.

Event Parking Management Plan / Process

The effective management of special event parking has become increasingly important to municipalities and City Centers seeking to foster economic development generate activity for local businesses and enhance the vibrancy of the community. Special events, such as festivals, farmer's markets, concerts, etc., often serve as an introduction of the City and its downtown to new future customers and residents, therefore the parking experience must be positive to ensure that they come back. As a result, providing adequate parking and transportation services for attendees is an important component of municipal parking management to ensure that there is an adequate and convenient supply of parking to meet the demand generated by special events. The effective management of event parking can also improve the overall image of parking in Davenport and encourage patrons and visitors to return for future events, dining experiences and entertainment. Accordingly, it is important that the Parking Division of the Neighborhood Services Department coordinates the provision of parking resources for major downtown events. Although there is a 'Special Events' parking section on the City's website, the link to access the Special Event Parking Map brings the user to an error that states that the page requested cannot be found. TimHaahs would recommend that the City consider implementing and developing a more thorough special events parking plan, similar to their snow plan, and that the City updates the link posted on the City's website so that users may actually access the map. Components of a special events parking management plan and associated policies include:

- Define special events as all events in the downtown that would necessitate a significant change in the normal parking and traffic patterns and regulations;
- Require all departments and sponsors of special events to proactively request parking and transportation arrangements;
- Establish the Parking Department, a sole department responsible for special events parking;
- Identify parking facilities for special events parking and overflow areas for regular permit holders; And,
- Develop a special events parking plan outlining the necessary facilities, manpower, supervision, signage, traffic control, and standard operating procedures for the collection of event parking fees.

Parking Signage and Wayfinding

As the City is aware, a proper wayfinding and signage program can greatly improve all aspects of a coordinated parking program. Wayfinding is a comprehensive signage system in a standardized format that clearly communicates the location of parking and various destinations to all types of travelers. The role of the parking wayfinding system is to assist visitors to easily find downtown parking facilities. Additionally, a wayfinding system will help reduce vehicle traffic and extraneous vehicular circulation.

To be effective, the signage and wayfinding for a parking system must be clear, concise, and simple. While the creative designer may desire an aesthetic statement, plain is far better than fancy, particularly for traffic direction. TimHaahs recommends signage and wayfinding systems that are simple and convey a friendly message. All visitor/customer spaces should be easily identifiable to a first-time visitor without creating any confusion about who may or may not park in a given space. The signage system should include the following:

- **Trailblazer signs** located on streets leading to the downtown, these signs show where parking can be found.
- **Site signs** located at the parking lots, these signs describe the type of parking available.
- **Parking rate signs** located in proximity to the parking space, these signs provide hourly, daily, and monthly rates.
- **Parking regulatory signs** which are not part of the parking signage system, but rather are related to the enforcement of the parking ordinance.

During our observations we noted the downtown signage and wayfinding system is relatively user-friendly and includes parking identification signs to the City's off-street public parking ramps. Davenport currently uses several different types of signs to communicate parking rules, regulations and offerings. Three (3) types of signage systems were evaluated including 1) on-street regulatory signage, 2) garage interior signage, and, 3) exterior wayfinding signage. The downtown signage and wayfinding system has been installed at key vehicular approach locations and intersections, notifying parkers of the direction to public lots. The signs' prominently display the universal "P" for parking and the ramps/lots use LED lighting to aesthetically complement the downtown's aesthetics. The identification signage indicates the parking lot's name, user group type, and time limitation, which provides detailed information for first-time downtown visitors who are not familiar with the parking characteristics.

On-Street Regulatory Signs

The City uses a small mix of on-street regulatory signs related to parking. In general, there are areas marked as 'no parking' and areas where parking is restricted to 1- or 2-hour time limits. The '2-hour Parking' signs provide a considerable amount of information about time and "block face" restrictions, while the '1-hour Parking' signs provide no information other than the time restriction. We would recommend that all on-street signs are updated to be consistent and to replicate the newer '2-hour Parking' signs. Other on-street regulatory signs (such as 'loading zone' and 'no parking') appear to be adequate.

Garage Interior Signs

The City garages include a mix of directional, informational and regulatory signage designed with a mix of fonts, colors and formats. Most of the garage signage appears to be in a good state of repair, although we did note that some of the signage is inconsistent.

TimHaahs would recommend that the interior signage be replaced with a signage package that is consistent in font and type size and uses a color scheme that reinforces the exterior branding package in which the City has already invested. Precautionary measures should be taken to ensure that type copy and backgrounds are of contrasting colors to aid in legibility. In order to eliminate confusion and provide parkers with only the necessary information, reducing the number of words per sign should also be an objective of a new signage plan.

Wayfinding Signage

Davenport has invested in lighted, blade-type signage for its parking ramps. The City has also installed directional signage on light poles directing drivers to the public parking garages. The blade signage and the directional signage both complement the Quad Cities' wayfinding and branding signage. **Figure 30** shows the downtown directional signage locations for the parking ramps.

Parking Ramps Lighted, Blade-Type Signage

New and Old Parking Wayfinding Signage

Figure 31: Off-Street Parking Facility Directional Signage

Source: Timothy Haahs & Associates, Inc. 2019

TimHaahs recommends the use of gateway signage and lighting to provide motorists with a more visual cue in regards to the location of the public off-street parking lots, as these are somewhat difficult to identify among the various private parking lots throughout the downtown. Some best practices for the design and placement of signage are as follows:

- All signage should have a general organizing principle that is consistently evident in the system.
- Directional signage for both pedestrians and vehicles must be continuous (i.e. repeated at each point of choice) until the destination is reached.
- Signs should be placed in consistent and, therefore, predictable locations.
- A sign should be placed at every point where a driver or pedestrian must decide.

An important aspect of signage is the use of graphic design. Effective signage programs combine aesthetics with information. Choice of color, typeface, character size, weight and spacing, and the use of uppercase and lowercase text all influence readability. The arrangement of the text and symbols must be visually distinct, and must not contradict their basic meaning or intent, so as not to confuse the user. The background is equally as important,

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backgrounds that are too small or too large for the type size can greatly detract from the overall effectiveness of the sign. A well designed and implemented wayfinding and signage system will not only make finding and using the City's parking more convenient but it can also help enhance the image of downtown and create a "branding" opportunity for the City and its parking system.

Once a brand is established, Davenport should develop a supportive and cohesive signage package. This package should integrate all primary and secondary signs with common fonts, colors and graphics. See examples:
- Smart Park: Portland, Oregon
- Easy Park Anchorage, Alaska
- ALTPlus, Atlanta, Georgia

A complete signage inventory should be conducted to identify any signage gaps and where improvements to sign placement could have the greatest impact. Priority should be given to:
- Areas where visitors are likely to park.
- Overflow areas where permit parkers may be less familiar.
- Parking facilities that accommodate both transient and permit parkers.
- Parking facilities where a change in operating approach has taken place.
- Areas where fee parking may be implemented.
- High citation areas - Often, the reason for a higher volume of citations can be attributed to poor or inadequate signage.

RECOMMENDATIONS: Signage and Wayfinding
1. Unify an interior signage and expand wayfinding and directional signs consistent with the Quad Cities' signage where possible.
2. Remove old directional signage and replace it with "Quad Cities P" signage.
3. Some of the blade signage is not functioning properly. We would recommend that proper repairs be made so that these signs illuminate as intended.
4. Complete branding of the downtown parking program in a manner supportive of the Quad Cities brand.

See Appendix A for additional signage information.

Off-Street Parking Facility Maintenance

When visiting Davenport to shop, dine or visit, parking will often be the first and last impression that someone will experience. Accordingly, it is critical that the parking facilities be attractive, well maintained and well-lit and secure in order to provide a high level of user-comfort and acceptance, as well as present a positive impression of the project. It is also important to maintain these facilities to prevent personal injuries, reduce the City's associated liability, and to ensure that the parking assets are maintained to maximize their useful life. In general, most of the off-street surface parking facilities are in good condition and well-maintained. (we didn't really survey any off-street parking facilities, I think we can delete this sentence) Parking structures are unique facilities, designed to withstand extremely harsh conditions including temperature extremes, water infiltration, thermal expansion and contraction, vehicular traffic, and particularly in the northeast, de-icing salts and snow removal strategies. A parking structure that is not properly maintained will experience detrimental consequences including structural deficiencies, premature concrete deterioration, and even safety hazards for users. It is also important to maintain these facilities to prevent personal injuries, reduce associated liability, and to ensure that the parking assets are maintained to maximize their useful life.

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Visual observations of the City's ramps reveal maintenance deficiencies. In each ramp we noted the presence of trash, accumulated debris on vertical and horizontal surfaces, and parking surfaces and drive lanes in need of pressure washing. We recommend the City provide at least one (1) full-time employee to provide general maintenance of the City's ramps and surface parking lots. We also recommend the City use an industry-based ramp maintenance schedule to document maintenance efforts. See Appendix B for sample maintenance schedule.

In addition to ongoing maintenance, a periodic condition assessment to evaluate the structural and capital components of the facility is recommended in order to proactively address capital items that will prolong the useful life of the facility. In addition, the City should establish a maintenance reserve fund to address these capital items when necessary.
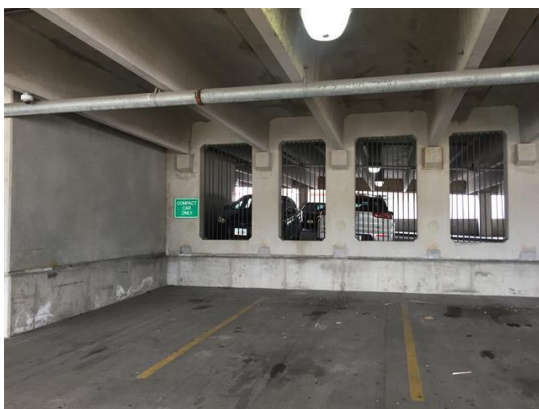
Under-maintained section in the Harrison Ramp　　　*Graffiti on the wall of the Redstone Ramp*

Security

Critical to the user comfort of Davenport's parking ramps is the perception that the ramps are safe with an appropriate level of security. You can deter criminal acts with common sense strategies that won't break the bank. Outlined below are recommendations to enhance the user comfort and feeling of security at the ramps:


1. **Lighting** - It is one of the most important safety factors in parking garages. According to James Marcella, Director of Technical Services for Axis Communications, "The most effective deterrent to criminal activity is a well-lit area". It is recommended that the City or a consultant perform a photometric evaluation / survey of the ramps to confirm that the lighting levels meet industry standards. In addition, and as a result of the referenced survey, the City, based on recommendations from the operator or consultant, may want to provide additional lighting beyond typical industry standards at key locations in the ramps, such as vehicular and pedestrian entries, to improve the overall user comfort of the facilities.

2. **Attendant Patrols** – Consistent and regular patrols with a human presence, whether it be a walkthrough on foot or a vehicular patrol, can curb incidents in the same way a police car cruising through a neighborhood can. It also serves as a reassurance to parkers that their safety is a priority for management. It is important that the patrols are performed on an appropriate and consistent schedule. To confirm the performance of patrols the City should require that its operator provide proof of patrols through a system such as Patrol Scan. These systems require people performing patrols to electronically swipe a chip, tag, or QR code sticker that is installed throughout the parking facilities and then the information is downloaded on the system's software to generate concise reports to track and patrol (http://www.patrolscan.com/). In addition, the City's Parking

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Department should communicate the availability of and offer parkers the option to use an escort to accompany them to their parking space, particularly in the evening hours.

3. **Facility Maintenance** - A poorly maintained garage sends a message that a garage operator isn't overly concerned about security. As stated, the City should ensure that it quickly cleans any litter or debris, repairs any damage, replaces burnt out bulbs and removes or paints over graffiti. Please refer to the Ramp Maintenance Checklist outlined in Appendix B.

4. **Security Cameras** - Security cameras have been shown to be a major criminal deterrent and the City should evaluate the opportunity to provide CCTV cameras throughout the public ramps by engaging a CCTV consultant to recommend and layout the locations of the cameras, the estimated costs, and the associated signage to implement the system. Cameras should monitor entries and exits, pay stations, elevators and stairwells. However, it is unlikely that these cameras will be monitored in real-time and the parking operator and / or the City should not communicate that the cameras are providing real-time surveillance, but are instead there for safety and for post incident reporting. Paint them bright colors, install a monitor at entries showing live feeds, and use large signs announcing that the facility has cameras for safety purposes.

Below are some examples of using paint, bright walls, and lighting for facility enhancements to improve user-comfort and safety for the Jackson Street Garage in Malden, MA.

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JACKSON STREET GARAGE
INTERIOR OF VEHICULAR ENTRY/EXIT
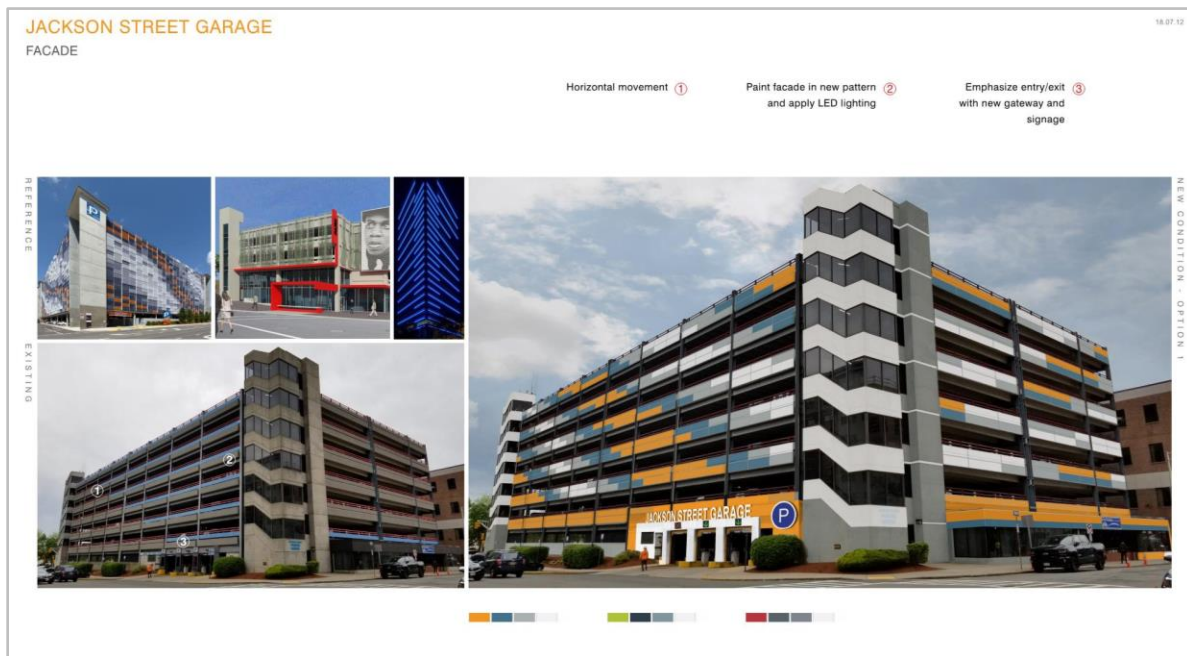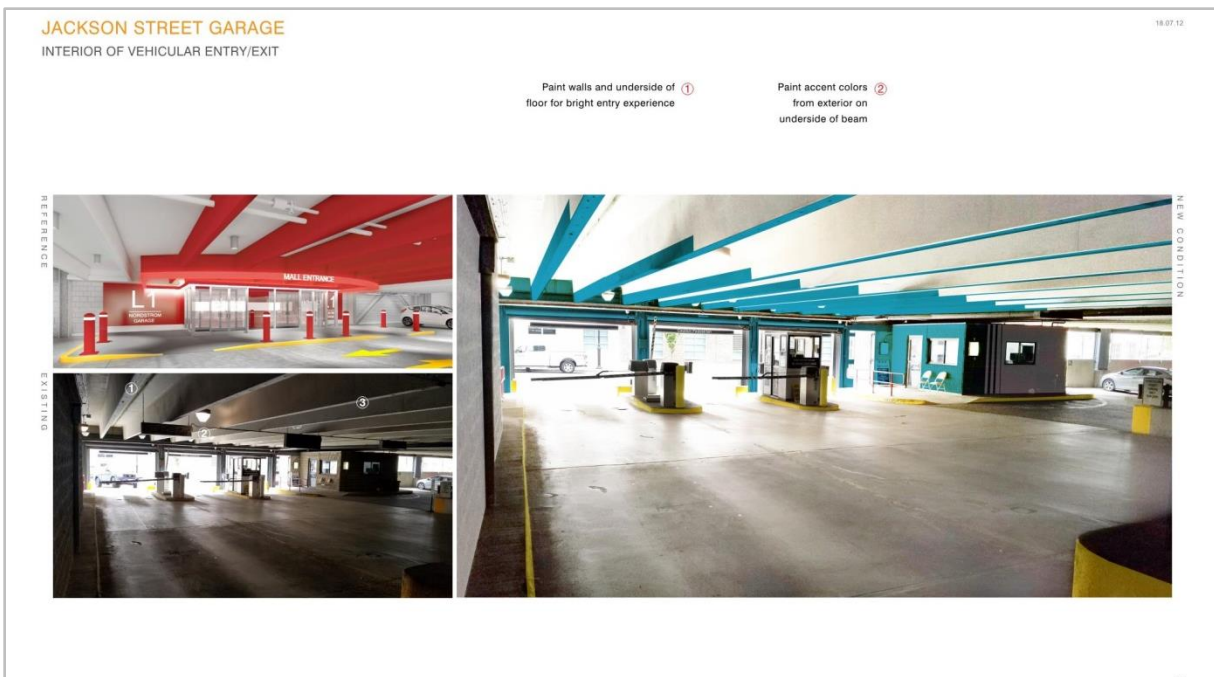
Capital Planning

Davenport does not have a formal reserve allocation for its parking program, but the City does use set-aside funds to address major maintenance issues. However, a more prescribed approach may be necessary to plan for future facilities and provide the necessary resources for any equipment and facility maintenance, as well as any necessary upgrades. A capital reserve fund should be established in order to provide adequate revenue to support capital repairs. Many municipalities establish this figure at a portion of operating costs to cover a timeframe. For the parking ramps, we recommend that the City establish an annual reserve of $125.00 per space per year to help fund future capital repairs and maintenance.

RECOMMENDATIONS: Parking Facility Maintenance

1. Add dedicated maintenance staff to improve the physical appearance of the City's parking ramps and surface lots.
2. Develop a general maintenance inspection program for City ramps and lots.
3. The City should consider developing a 15-year capital improvement plan and reserve with allocated revenue for its parking assets. Such a plan includes cost estimates for every capital item related to the parking and transportation program, as well as an estimated timeline for when each capital item will be implemented.

On-Street Angled Parking

Angled on-street parking is when a vehicle is parked with the front or back of the vehicle intersecting or adjacent to the curb line. Angled parking uses less linear curb length, typically between 10' – 23' per parking space than traditional parallel parking which requires 20' – 22', so that more spaces can be provided on the same block. A minimum roadway width of 40 feet is used as a guideline to allow for parallel parking along one curb with one lane of traffic in each direction and angled parking along the other curb. In addition, angled parking has the potential to act as a traffic calming device because a passing driver is aware that a parked vehicle could back into the roadway at any moment. For the same reason, bicyclists who are not "taking the lane", and are riding close to parked vehicles are much more wary of angled parking.

Angled parking on main streets has been applied strategically in traditional neighborhood retail collector streets ("Main Streets"), precisely because it both increases the parking supply and slows down traffic. Slower traffic allows drivers to widen their field of vision and thus to become more aware of retail stores or services. A more bicycle-friendly arrangement is back-in/head-out angled parking, a.k.a. reverse-angled or reverse-diagonal parking, in which the driver backs into the space. This form of angled parking has several advantages:

- When exiting, the driver is closer to the travel lane and facing forward, thus providing him or her with a greater visibility when entering traffic.
- Drivers loading goods into the trunk of the vehicle can do so at the curb side, rather than in the street or parking lot travel lane, thus reducing their risk exposure.
- Children exiting or entering the car are guided into the car when the door is opened, rather than blocked from the sidewalk.
- The driver of a parked vehicle can make eye contact with anyone in the street, including other drivers, bicyclists, skateboarders, or pedestrians.

The City of Tucson found that after converting front-in angled parking with back-in angled parking, bicycle collisions with vehicles leaving their parking spaces fell from three to four collisions per year down to zero collisions per year, after just four years. A sampling of cities that have installed back-in angled parking includes: Seattle (city-wide), Tacoma, Olympia, and Vancouver in Washington; Portland and Salem in Oregon; Tucson, Arizona; Austin, Texas; Salt Lake City, Utah; Indianapolis, Indiana; Washington, D.C.; Pottstown, Pennsylvania; Wilmington, Delaware; and Montreal, Canada. The cities that have implemented back-in angled parking are larger cities with a denser population than the City. **(Source: http://streetswiki.wikispaces.com/Angled+Parking).**

As indicated, the generic recommended linear curb face required for an angled parking space is approximately 10'-12'. By comparison, an on-street parallel parking space requires 22' or more. Roughly two angled parking spaces can thus be created for every parallel parking space, increasing parking capacity by almost 100%. However, when converting spaces from parallel to angled parking, it is usually necessary to restripe any lane markings as well since the angled parking will necessitate moving the outside travel lane closer to the center of the street. In addition, when contemplating the creation of angled parking on streets that have parallel parking on both sides of the street there should be adequate street width (curb to curb), so as to continue to allow for parallel parking across from the new angled parking. If the creation of angled parking one on side of the street eliminates parallel parking on the opposite side of the street, the net gain of parking is reduced.
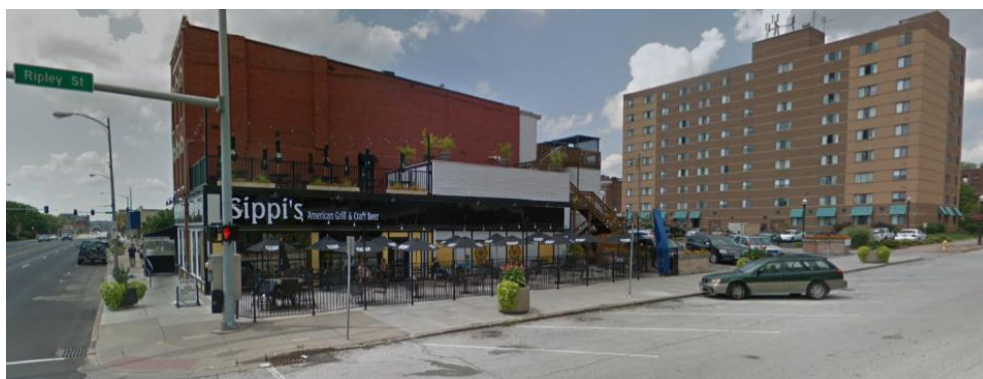
Angled Parking on Ripley Street

Presently, there are approximately **250** angled or perpendicular on-street parking spaces within the Study Area, approximately **22%** of the total **1,156** spaces. The highest concentration of these angled spaces is located along the east and west fringes of the Study Area: on Western Avenue to the west and Pershing Avenue to the east. Two (2) additional areas of non-parallel parking exist within the Study Area along West 2nd Street and North Ripley Street.

Figure 32 is a location map of the existing angled parking and perpendicular parking in the downtown Study Area.

Figure 32: Existing Angled Parking and Perpendicular Parking

Source: Timothy Haahs & Associates, Inc. 2019

Applications:
- Works for arterial streets, residential streets;
- Street is 40 feet or wider and slower speeds are desirable.

Advantages:
- If streets are wide enough, angled parking can increase the total number of parking spaces that can fit within a block (when compared to head-in parking);
- With the presence of angled parking, the parked cars extend further out into the street, thus reducing the travel lane width, which often results in slower traffic speeds through the area;
- Back–in angled parking is preferred to head–in angled parking, as the potential for conflict is reduced because the driver can see approaching traffic.

Disadvantages:
- They are difficult for large vehicles (such as fire trucks) to circumnavigate;
- They must be designed so that the circulating lane does not encroach on the crosswalks;
- They may require the elimination of some on-street parking;
- Landscaping must be maintained, either by the residents or by the municipality;

- The difficulties and dangers associated with angled parking, such as limited visibility for drivers and lack of room to exit the space, can make parallel parking a safer and more popular choice;
- The number of parking spaces on the block will not increase if the installation of the angled parking requires the removal of existing parallel parking on the other side of the street.[4]

RECOMMENDATIONS: Angled Parking

Additional angled parking may be possible and could be useful along Scott Street between 4th Street and River Drive, assuming the requisite roadway width exists. In making this decision, the City must ensure that they adhere to appropriate angled parking standards as dictated by the State Department of Transportation (DOT) and/or the City and focus on the following objectives:

1. Increasing the on-street parking supply.
2. Reducing vehicular speed on downtown streets using traffic calming strategies including angled parking.
3. Increasing sidewalk widths using road diets, of which angled parking may be advantageous.
4. Converting one-way streets into two-way streets to improve circulation, reduce vehicular speeds, and improve the visibility of retail storefronts.

Figure 33 is a map locating the streets where the City could potentially add angled parking.

Figure 33: Potential New Angled Parking

Source: Timothy Haahs & Associates, Inc. 2019

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[4] University of Washington

City of Davenport

APPENDICES

APPENDIX A – Signage Principles

The following principles impact the effectiveness of signage and help parkers to better understand the intended message of the given sign.

1. **Keep It Simple** – Too much type is confusing and unnecessary. Similar to a billboard, there is only so much information that can be absorbed at once. Remember that white space is important; filling a sign with words makes it far more difficult to read.

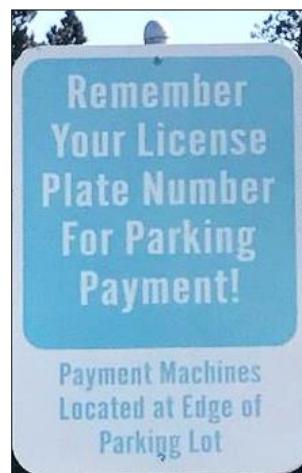|	
Preferred	*Not Preferred*

2. **Contrasting Colors** – Sign backs should be white and contain type of a single highly contrasting color. This color contrast helps with the signage's legibility.

Preferred	*Not Preferred*

3. **Sign Economy** – As with limiting the amount of type per sign, it is important to economize on the number of signs used for a facility. Every space may not require signage if arrows can be used to show the zones for which parking regulations apply.
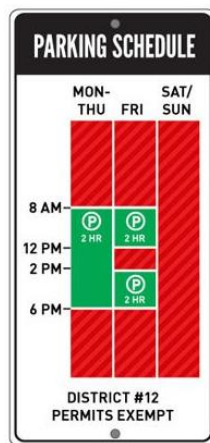

Preferred   *Not Preferred*

4. **Graphics** – Recently, graphics have been introduced to signs to improve legibility and reduce the amount of copy on signs. This approach may help the City, especially regarding street sweeping operations.
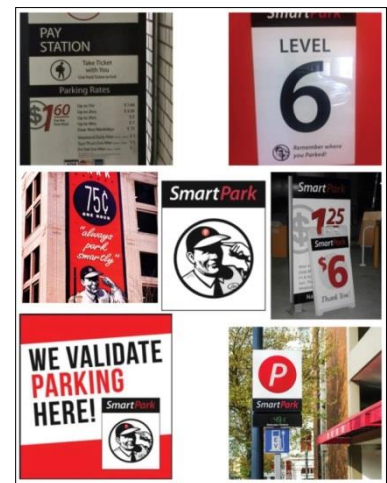

Preferred   *Not Preferred*

5. **Branding** – Wherever possible, parking signage should reinforce the parking program's brand. This can be achieved by using common fonts, colors and symbols.

Additional Resources Regarding Parking Signage:
- https://priceonomics.com/a-designers-war-on-misleading-parking-signs/
- http://signs123.com/2017/06/11/wayfinding-signs-what-is-the-point/
- http://signs123.com/2017/02/07/get-parking-lot-signs-looking-great/
- https://www.wired.com/2015/04/las-proposed-parking-signs-brilliantly-simple/

City of Davenport

Figure 34: Ramp Maintenance Checklist

Task	Daily	Weekly	Monthly	Quarterly	Semi-Annually	Seasonally	Annually	As Needed
Sweeping / Power Sweeping			X					
Trash Pickup	X							
Empty and Clean Trash cans; place liners	X							
Clean Bollards			X					
Paint Bollards								X
Power Washing							X	
Glass Cleaning	X				X			X
Exterior Window Cleaning			X					X
Elevator Cleaning - Floors, Doors, lights; check alarms	X							
Elevator Maintenance			X		X			
Wipe Down Equipment	X							
Restriping								X
Removal of Oil Stains					X			X
Generators - check/fuel				X				
Re-lamping								X
Light Fixture Cleaning					X			
Floor Drain Cleaning					X			
Structure - check floor surface deterioration, water leakage, cracking					X			
Painting - check for rust and touch up; doors, handrails, guardrails, pipes, curbs and signs						X		
Graffiti Removal	X							X
Graphics Cleaning					X		X	X
Revenue Control Equipment	X							
Security System Checks - proper operation, TV, audio, panic buttons, door alarms		X						
Safety - exit lights, emergency lights, trip hazards		X						
Fire Protection System - check fire extinguisher				X				
Fire Protection Systems- Drain water before winter season						X		
Check Icy Spots/Remove Ice & Snow/Salt	X							

Source: Timothy Haahs & Associates, Inc. 2019