SIOUX CITY DOWNTOWN PARKING REPORT

Report by the Siouxland Interstate Metropolitan Planning Council (SIMPCO)

March 1, 2017

simpco

Sioux City Downtown Parking Report

Background Information

Purpose

The purpose of the study is to determine how Sioux City's parking spaces are being used by the public. The on-street, metered parking was analyzed during the standard meter enforcement hours of 8am-6pm on Monday through Friday. The parking garage information was gathered by ABM, which manages the parking garages for the City of Sioux City.

Impetus

There have been many projects that have been proposed in downtown. Parking has been raised as a concern each time a project is proposed. Some parking concerns have led to opposition of certain proposals for downtown improvement. Various proposals for the downtown that would have an impact on parking include bike lanes, greenspace, parks and parklets, and one-way to two-way street conversions. A better understanding of the parking situation in Sioux City can contribute to more informed decision making in regards to the downtown area. Therefore, this study was conducted to improve the understanding of Sioux City's parking situation.

Existing Parking Stock

Parking is a major issue for many urban areas. Parking is needed to ensure that people can visit and do business in high demand locations. The City of Sioux City provides public parking in the downtown area in the form of on-street parking, parking garages, and surface lots. There are 1,204 on-street, metered parking spaces in downtown Sioux City. There are 2,067 publicly available (non-reserved and non-handicapped) spaces in Sioux City's parking garages. The Library surface lot has 49 spaces. In total, there are 3,320 paid, public on-street, garage, and surface lot parking spaces owned by the City of Sioux City.

Methodology

Data Collection

To determine how the parking is being used, data was collected and analyzed. Data collection consisted of SIMPCO staff visiting downtown locations to record which parking spaces are being used. Information on the parking meters and their locations was provided by the City of Sioux City Parking Department. SIMPCO staff spent several hours in each location in order to get parking data over a period of time. Data was recorded at recurring time intervals over the period of time. The periods of time served as a sample to determine how the parking is being used during enforcement hours. Staff collected this data at various weekdays and times of day, based on their availability. The data was collected from June 2016-October 2016 during weekdays between 8:00am and 6:00pm for time periods ranging from 40-140 minutes at recurring time intervals ranging from 10-20 minutes. The parking garage data provided by ABM was from September 2016.

Performance Measures

The primary measure being used in this analysis is parking index. The parking index is the average percent of parking spaces that are occupied over a period of time. The parking index will reveal how many parking spaces are typically occupied. The ideal parking index is considered to be 85%[1]. At this level, the majority of the parking is being well used and little parking is going to waste. Also, there is still a small portion of the parking that is being unused, which allows for people to find parking without have to extensively search for it. The parking index was calculated according to a formula shown in the appendix.

Calculations were also conducted to determine the average parking duration for on-street, metered spaces. The data necessary for calculating average parking duration was not available for the parking garages. Average parking duration is the average amount of time that cars spent in the same parking space. The duration was measured in minutes. The calculation for average parking duration is partially based on the recurring time interval that data was collected. This time interval varied for each area from 10-20 minutes, and this variation may have a slight skewing impact on the calculated average parking duration. The formula for parking duration is shown in the appendix.

[1] Shoup, Donald. (2005) The High Cost of Free Parking.

The parking turnover was calculated for the on-street, metered parking spaces. The data necessary for calculating the parking turnover was not available for the parking garages. Parking turnover is the average number of vehicles per parking space per hour. This measure is useful for determining areas that have a large number of different visitors in a short period of time. A large value for parking turnover shows that the area receives a large number of different vehicles parking in that area over time.

Results

Parking Index

The results show that no public parking areas in downtown, on-street or garage, meet the recommended parking index of 85%. The parking index varied by downtown location and garage from 0%-79%. The average parking index for metered, on-street parking is 18%, with about 220 of 1,204 spaces occupied on average. The average parking index for the parking garages is 44%, with about 909 of 2,067 spaces occupied on average. The average parking index for the combined public, downtown parking spaces is 35%, with about 1,129 of 3,271 spaces occupied on average. These results show that there is a significant amount of unused parking.

Parking Assessment				
Parking	**Occupied**	**Unoccupied**	**Total**	**Index**
On-Street	220	984	1204	18%
Garage	909	1158	2067	44%
Combined	1129	2142	3271	35%

Parking Assessment - Garages					
Garage	**Total**	**Reserved**	**Occupied**	**Unoccupied**	**Index**
Heritage	344	37	241	66	79%
Discovery	753	87	228	438	34%
Rivers	690	40	256	394	39%
MLK	472	28	184	260	41%

Parking Duration

The average parking duration for on-street, metered spaces varied significantly across different areas of downtown. Some locations had short durations averaging less than 20 minutes per parked vehicle. Other locations had vehicles that would remain parked for over an hour. Many locations had average parking durations of 0 minutes, this is because these locations did not have any vehicles park there during the observed time period. The average (mean) parking duration was 31 minutes.

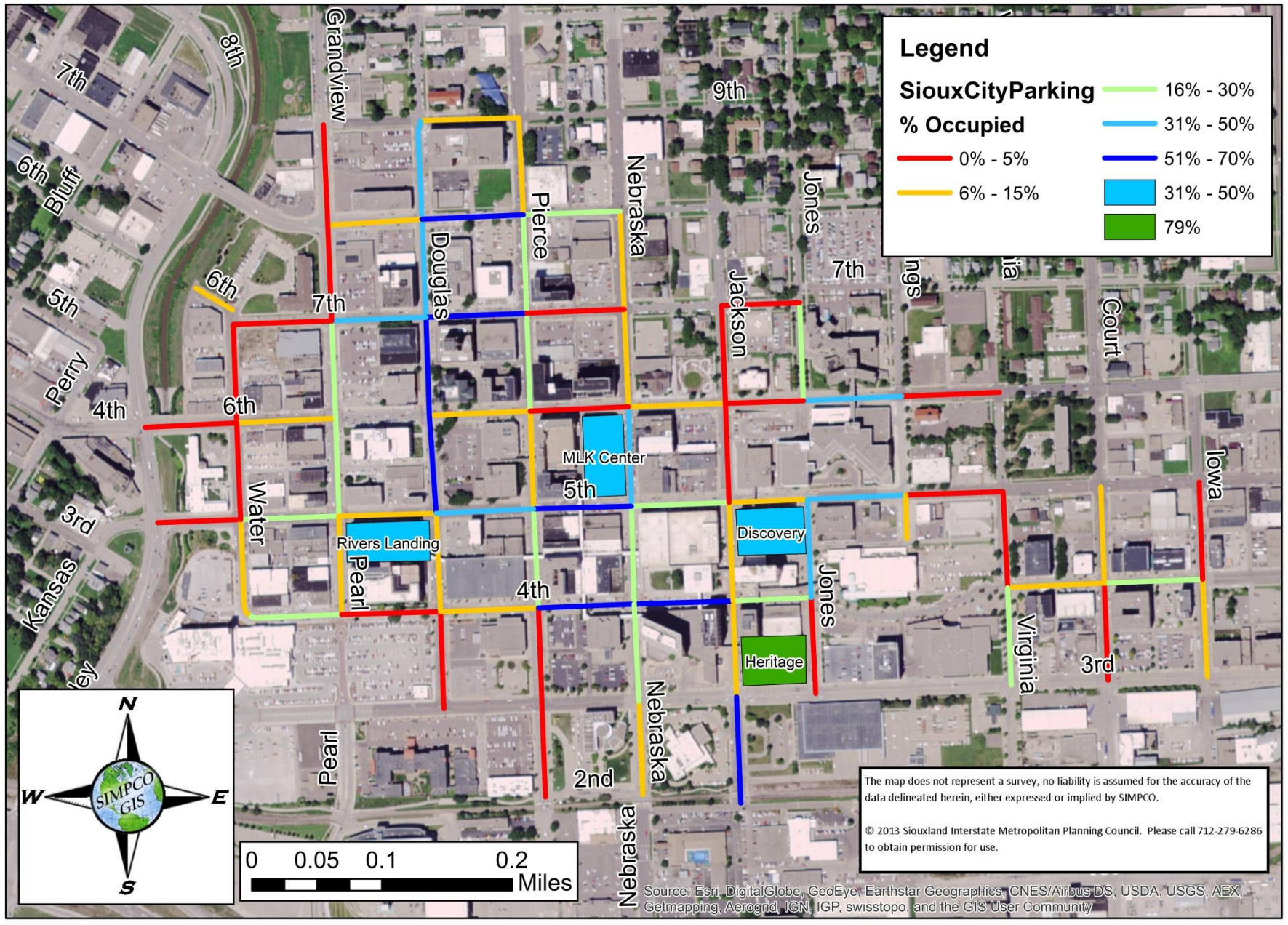
Parking Turnover

The vast majority of on-street, metered segments had very low parking turnover rates. This shows that there are not many vehicles continually entering and exiting these downtown parking spaces. It suggests that there are many areas in downtown that are not generating much activity during meter enforcement hours. Only five street segments had a turnover rate above 1 vehicle per space per hour. These high turnover rate areas corresponded to locations that had short parking durations. The average (mean) parking turnover is 0.39 vehicles per space per hour. This shows that there is not a large amount of parking turnover in most of downtown.

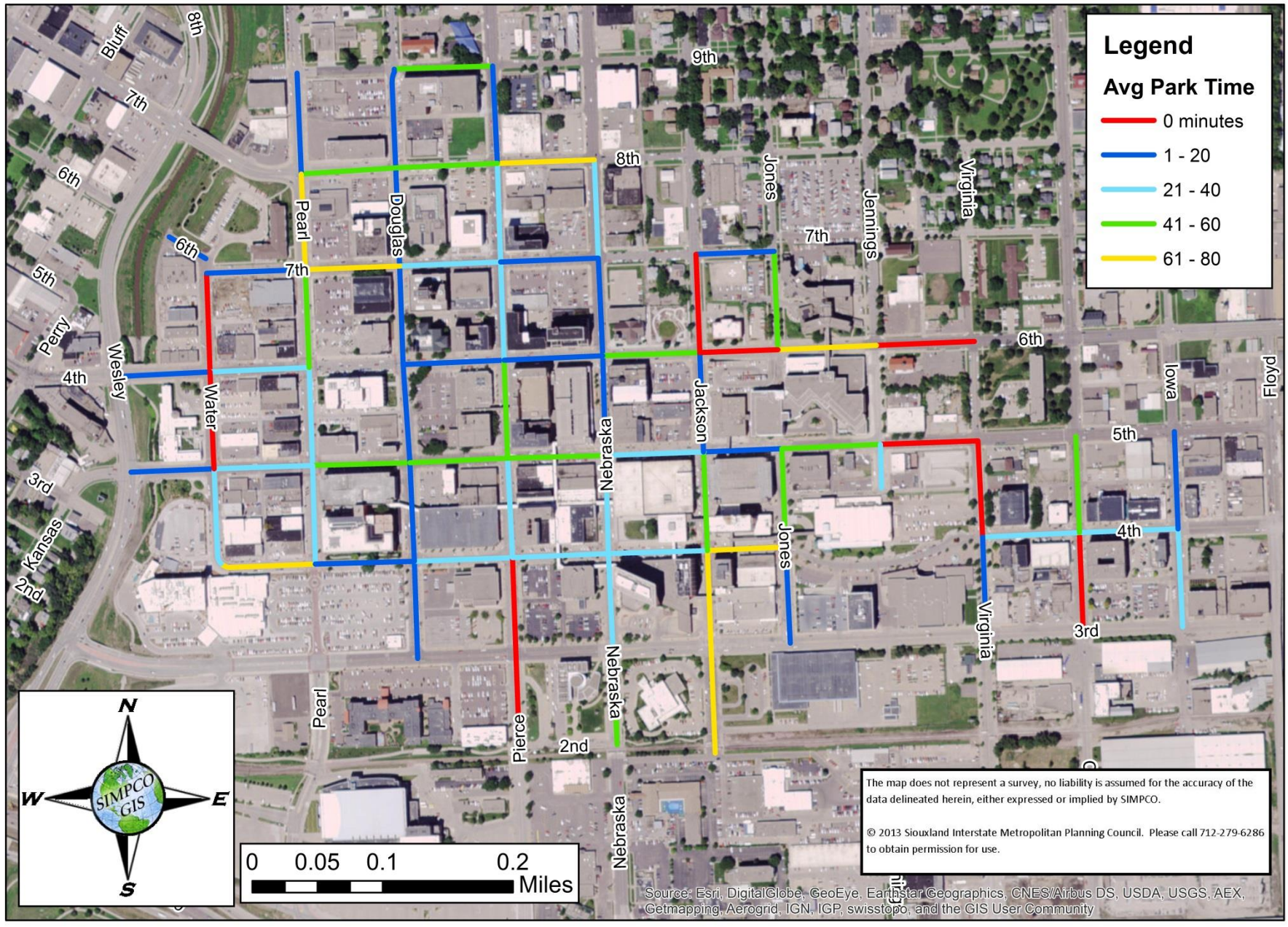
Maps of Results

The maps of the results are shown on the following pages.

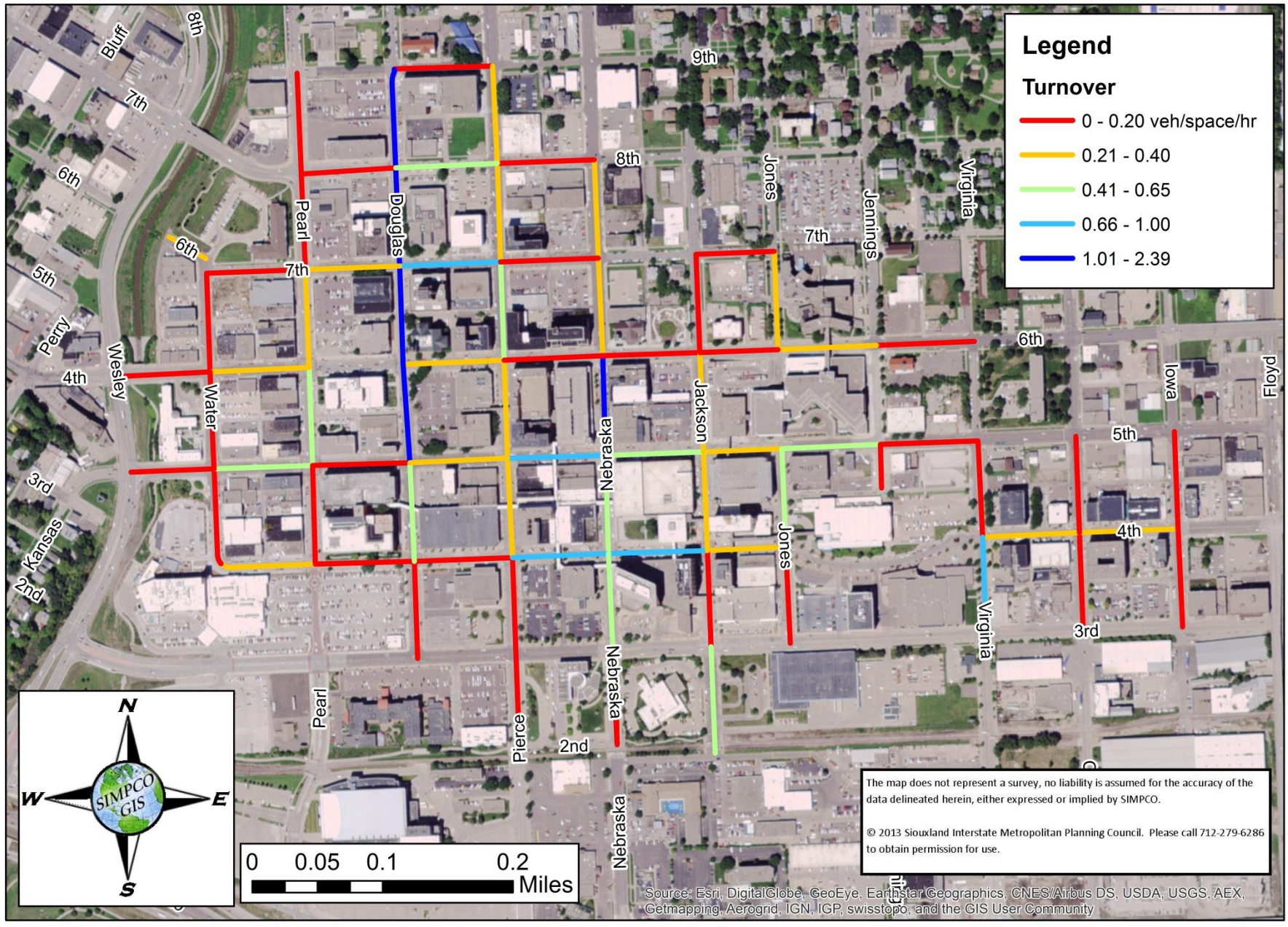
Sioux City Downtown Parking Assessment



Sioux City Downtown Parking Assessment

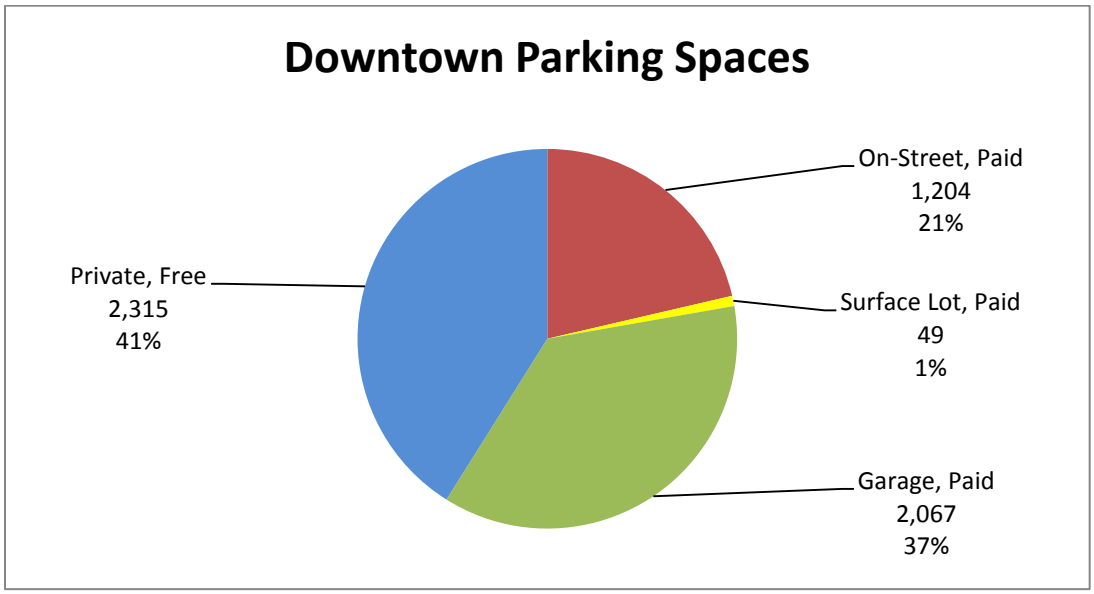


Sioux City Downtown Parking Assessment



Private Parking

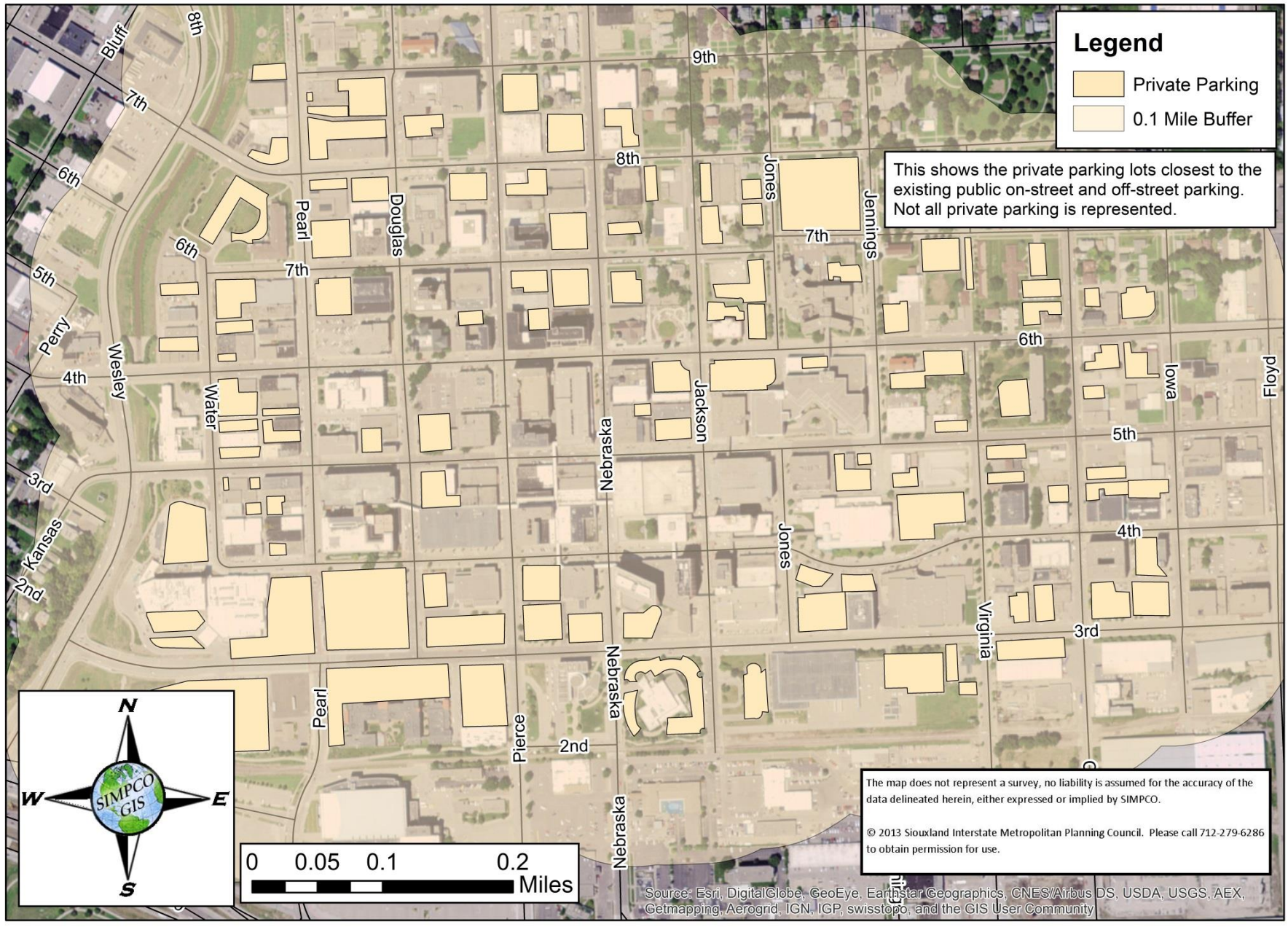
It is clear that there is an abundance of available parking in downtown Sioux City. One possible reason for this situation is the large amount of privately owned, free parking in downtown Sioux City. A 2010 parking study by Downtown Parking Solutions estimated that there are approximately 2,315 privately owned parking spaces in downtown Sioux City. This means that approximately 41% of all downtown parking is privately owned and free. Many downtown businesses own their own parking lots or parking spaces. These spaces are offered for free to their employees or visiting customers. This large amount of free parking appears to be used instead of the paid public parking located on-streets or in garages.



The free, private parking lots were mapped by using aerial imagery. This analysis revealed how abundant free parking is throughout downtown Sioux City. After the private lots were mapped, a buffer distance of 0.1 miles was added around each lot in order to represent a typical walking distance from a parking location to a destination. The buffer showed that every part of the downtown area is within a short walking distance of at least one free, privately owned parking lot.

The image below shows a portion of 7th street where there is paid, metered parking on one side of the street and free, unmetered parking on the opposite side of the street. All the motorists have chosen to park on the free side of the street to avoid having to pay. Similar situations exist all throughout Sioux City's downtown.

Sioux City Downtown Parking Assessment



Conclusions

The parking index data clearly shows that there is a surplus of paid on-street and garage parking in downtown Sioux City. Ideally, the supply of parking should meet the demand. However, it is clear that there is a much larger supply of paid parking than is actually demanded by downtown visitors. With such an oversupply, it is clear that removing some parking or converting parking to another use, such as bike lanes, greenspace, parks, or parklets, would not have a detrimental impact on the availability of downtown parking during meter enforcement hours.

The duration that people parked varied significantly across different parts of downtown. This shows that there are both long and short duration parking options that are being demanded by the public. Longer duration parking can be directed to the parking garages in downtown in order to keep the on-street spaces available for people making quick trips to specific locations.

Most of the turnover rates were very low (less than 1 vehicle per space per hour). These low turnover rate segments show the areas of downtown that people rarely visit on a regular basis during enforcement hours. The high turnover rate segments are located next to frequently visited downtown buildings, such as City Hall, Woodbury County Courthouse, and Police Department. These buildings typically have many people making quick trips for purposes such as paying tickets, bills, or fines.

Parking Problem

An oversupply of parking is a problem. Sioux City has much more parking than what is actually needed to meet demand. There are several costs associated with this problem.

The opportunity cost is the loss of potential gain from other alternatives when one alternative is chosen. Sioux City has chosen to dedicate a large amount of its downtown area to parking, which is being underused. Because so much space has been dedicated to parking, Sioux City does not have as much greenspace, parks, parklets, or bike lanes as it could. Therefore, Sioux City is losing the potential benefits of these other types of land uses because it has dedicated so much space to parking. Furthermore, Sioux City is also not receiving benefits from the space it has dedicated to parking because the parking is being unused.

There are also the costs of installing new meters in new areas. Additionally, all the meters need to be maintained, updated, and kept in good condition. Furthermore, more meters means higher costs of enforcement.

Recommendations

The City of Sioux City could consider converting some of its unused, on-street parking to other uses, such as greenspace, parks, parklets, or bike lanes. These improvements can help to improve the downtown environment by making it a more pleasant place for people to walk around and spend their time. Providing these improvements can make the downtown area a more popular destination and help to attract more businesses that want to locate in a thriving location.

The parking garages can be promoted as a place to park. There is a large amount of available space that can accommodate the existing demand of on-street segments. The garages can also be promoted as the best place for long duration parking in downtown in order to keep on-street parking spaces available in high turnover locations.

Information could be gathered on the free, privately owned parking spaces and lots in downtown. An inventory of the number of spaces and collection of parking performance measure information for these spaces would be helpful for downtown planning. With this private parking information, Sioux City would have a more complete understanding of the downtown parking situation.

There is a difference between a parking problem and a perceived parking problem. Efforts could be taken to help inform the public and the downtown business community about the abundance of available downtown parking. It could also be good to inform them about the many benefits of parking space alternatives, such as bike lanes, greenspace, and downtown parks.

APPENDIX

CONTACT INFORMATION FOR QUESTIONS

Questions can be directed to Kevin Randle, Regional Planner II at the Siouxland Interstate Metropolitan Planning Council (SIMPCO): 712-279-6286, simpco@simpco.org, www.simpco.org.

FORMULAS AND CALCULATIONS

$$Parking\ Load = Sum\ of\ occupied\ spaces\ * Time\ interval$$

$$Parking\ Volume = \frac{Number\ of\ unique\ vehicles}{Time\ duration}$$

$$Parking\ Index = \frac{Parking\ load}{Number\ of\ spaces * Total\ time}$$

$$Average\ Parking\ Duration = \frac{Parking\ load}{Total\ number\ of\ vehicles}$$

$$Parking\ Turnover = \frac{Parking\ volume}{Number\ of\ parking\ spaces}$$

SPREADSHEETS

Spreadsheets showing the study results for individual street segments are shown on the following pages.

Sioux City Downtown Parking Report

Sioux City Downtown Parking Assessment - Data Spreadsheet								
Name	**From**	**To**	**PM Zone**	**Index**	**Total Spaces**	**Occupied Spaces**	**Duration**	**Turnover**
4th St	Court St	Iowa St	3101	21%	30	6	33	0.38
4th St	Douglas St	Pierce St	3102	6%	32	2	24	0.15
4th St	Jackson St	Jones St	3103	25%	8	2	70	0.21
4th St	Nebraska St	Jackson St	3105	61%	24	15	40	0.91
4th St	Pearl St	Douglas St	3106	1%	17	0	20	0.03
4th St	Pierce St	Nebraska St	3107	54%	30	16	39	0.84
4th St	Virginia St	Court St	3109	15%	27	4	29	0.30
4th St	Water St	Pearl St	3111	30%	17	5	72	0.25
5th St	Douglas St	Pierce St	3112	33%	19	6	50	0.39
5th St	Jackson St	Jones St	3114	11%	9	1	20	0.33
5th St	Jennings St	Virginia St	3115	0%	16	0	0	0.00
5th St	Jones St	Jennings St	3116	38%	8	3	50	0.45
5th St	Nebraska St	Jackson St	3117	23%	12	3	30	0.50
5th St	Pearl St	Douglas St	3119	6%	20	1	50	0.08
5th St	Pierce St	Nebraska St	3121	68%	14	10	42	0.96
5th St	Water St	Pearl St	3122	22%	14	3	35	0.43
5th St	Wesley St	Water St	3124	4%	6	0	20	0.13
6th St	Douglas St	Pierce St	3125	11%	11	1	18	0.36
6th St	Jackson St	Jones St	3129	0%	15	0	0	0.00
6th St	Jennings St	Virginia St	3132	0%	11	0	0	0.00
6th St	Jones St	Jennings St	3134	33%	14	5	66	0.30
6th St	Nebraska St	Jackson St	3135	9%	21	2	45	0.11
6th St	Pierce St	Nebraska St	3136	3%	18	1	15	0.13
6th St	Water St	Pearl St	3138	13%	14	2	35	0.21
6th St	Wesley St	Water St	3139	4%	7	0	15	0.14
7th St	Douglas St	Pierce St	3141	57%	18	10	36	0.94
7th St	Jackson St	Jones St	3143	2%	9	0	20	0.06
7th St	Pearl St	Douglas St	3144	31%	15	5	77	0.24
7th St	Pierce St	Nebraska St	3146	4%	17	1	20	0.11
7th St	Water St	Pearl St	3148	1%	18	0	15	0.06
8th St	Douglas St	Pierce St	3150	60%	12	7	58	0.63
8th St	Pearl St	Douglas St	3151	7%	17	1	50	0.09
8th St	Pierce St	Nebraska St	3152	16%	20	3	65	0.15
9th St	Douglas St	Pierce St	3154	12%	21	3	50	0.14
Alley	Convention	5th St	3177	7%	6	0	40	0.10
Court St	3rd St	4th St	3156	0%	17	0	0	0.00
Court St	4th St	5th St	3157	7%	18	1	50	0.08
Douglas St	3rd St	4th St	3158	1%	25	0	10	0.06
Douglas St	4th St	5th St	3159	9%	22	2	11	0.48
Douglas St	5th St	6th St	3161	69%	8	6	20	2.06
Douglas St	6th St	7th St	3162	63%	22	14	16	2.39
Douglas St	7th St	8th St	3163	37%	21	8	11	1.93
Douglas St	8th St	9th St	3165	47%	25	12	12	2.28
Iowa St	3rd St	4th St	3166	15%	9	1	35	0.19
Iowa St	4th St	5th St	3167	2%	9	0	10	0.10

Sioux City Downtown Parking Report

Sioux City Downtown Parking Assessment - Data Spreadsheet								
Name	From	To	PM Zone	Index	Total Spaces	Occupied Spaces	Duration	Turnover
Jackson St	2nd St	3rd St	3168	52%	8	4	75	0.63
Jackson St	3rd St	4th St	3169	9%	9	1	75	0.11
Jackson St	4th St	5th St	3171	13%	20	3	48	0.25
Jackson St	5th St	6th St	3174	4%	9	0	15	0.22
Jackson St	6th St	7th St	3176	0%	16	0	0	0.00
Jones St	3rd St	4th St	3178	2%	10	0	20	0.06
Jones St	4th St	5th St	3179	43%	7	3	43	0.60
Jones St	6th St	7th St	3180	26%	12	3	54	0.29
Nebraska St	2nd St	3rd St	3181	8%	13	1	60	0.08
Nebraska St	3rd St	4th St	3182	22%	17	4	28	0.47
Nebraska St	4th St	5th St	3183	23%	23	5	21	0.65
Nebraska St	5th St	6th St	3186	44%	11	5	18	1.64
Nebraska St	6th St	7th St	3187	6%	13	1	15	0.23
Nebraska St	7th St	8th St	3189	15%	15	2	27	0.33
Pearl St	4th St	5th St	3190	9%	22	2	29	0.19
Pearl St	5th St	6th St	3191	26%	13	3	28	0.55
Pearl St	6th St	7th St	3193	20%	17	3	43	0.28
Pearl St	7th St	8th St	3195	5%	15	1	80	0.04
Pearl St	8th St	9th St	3196	5%	11	1	20	0.16
Pierce St	2nd St	3rd St	3198	0%	17	0	0	0.00
Pierce St	3rd St	4th St	31101	0%	20	0	0	0.00
Pierce St	4th St	5th St	31102	17%	22	4	38	0.27
Pierce St	5th St	6th St	31104	15%	18	3	44	0.21
Pierce St	6th St	7th St	31107	19%	17	3	24	0.49
Pierce St	7th St	8th St	31109	16%	16	3	29	0.33
Pierce St	8th St	9th St	31111	8%	19	2	20	0.24
Virginia St	3rd St	4th St	31115	25%	9	2	20	0.75
Virginia St	4th St	5th St	31116	0%	10	0	0	0.00
W 6th St	Perry Creek	Water St	31117	6%	8	0	15	0.25
Water St	4th St	5th St	31118	13%	15	2	40	0.20
Water St	5th St	6th St	31119	0%	13	0	0	0.00
Water St	6th St	7th St	31120	0%	16	0	0	0.00