DDA Bike Parking Count Report

Introduction

During the spring and fall of 2010, I conducted six counts of bikes parked within the Ann Arbor DDA boundary. On each block, I recorded the number of bikes parked on hoops/racks and the number parked on other street features such as trees or light posts. This information will help the DDA determine how it can better manage its current stock of bike hoops/racks to meet the parking needs of Ann Arbor's cyclists.

Methodology

Prior to the official six counts, I conducted a test count which I used to determine the methodology for subsequent counts. In particular, I was trying to determine the scale of the count in terms of geography and detail. Initially, I anticipated covering every block in the DDA boundary, but this quickly proved impractical, because it required walking residential blocks inappropriate for bike hoops/racks. For this reason, I focused on the three traditional commercial areas of downtown: Kerrytown, the Central Business District (State & Main), and South University. A map defining these areas is provided in Appendix A.

During my test count, I also decided to count bikes at the block level as opposed to noting their individual locations. Having data at the block level provides enough detail to determine where bike parking is used and where is should be added without the much more time intensive effort of recording and analyzing specific parking locations via maps. The DDA can use the information to identify the blocks that need the most attention and then study those blocks in more detail.

For a more detailed description of my methodology please see the DDA Bike Parking Count Methodology document found on the DDA server.

Summary of Recommendations

Given the limited sample size of the counts conducted so far, the DDA should continue counts or use them to focus further study on blocks with a mismatch between bike parking supply and demand. See recommendation below and the Problems with the Data section.

Bike parking in downtown Ann Arbor appears to fit demand well, but some hoops could be moved from areas with low parking demand to areas with unmet parking demand. The data collected during the counts can be compared to hoop/rack locations to determine where hoops can be removed from. The count data itself identifies four primary areas with unmet demand: 300 Maynard, N400 Fourth, W100 Liberty and S300 State.

Residents appear to use the racks in front of University Towers on 500 Forest for long term bike storage and often abandon their bikes on the racks. Therefore, while 500 Forest appears to have the highest concentration of parked bikes, many of the racks on the block could probably be moved. Also, the DDA should consider working with the landlord to provide proper long term bike storage for residents.

On- street racks were well used this summer with the exception of the rack on E. University. However, Mighty Good coffee has changed locations, which may adversely affect the rack located in front of its old location. Given its relatively low level of use, the DDA should consider moving the rack next summer. Also, anecdotal evidence suggests that the high number of improperly parked bikes on 300 Maynard is concentrated in front of Café Ambrosia, making it a potential future location for an on-street rack.

Preliminary Conclusions

Concentration of Parked Bikes
All of the blocks with the heaviest concentration of parked bikes are located at the heart of Downtown commercial districts (Kerrytown, Main Street, South University and State Street), or adjacent to the University of Michigan.

500 Forest has by far the highest concentration of parked bikes, but unlike the other locations, this seems to be due to the presence of a large apartment building on the block: University Towers. There are two banks of bike hoops directly in front of the building that are almost always occupied. Unfortunately, many of the residents appear to use the hoops for long term storage and ultimately abandon their bikes on the hoops.

Blocks with the Highest Concentration of Parked Bikes		
Street	Block	Average/Count
Forest	500	22.8
Maynard	300	15.5
State	S300	12.0
North University	700	10.3
Liberty	E500	10.2
State	S100	8.8
East University	600	8.5
Fourth	N200	7.7
Liberty	E600	7.7
Church	600	7.5

The lowest concentrations of parked bikes were along Huron Street and its adjacent blocks as well as blocks at the periphery of downtown. Forty six blocks averaged less than one parked bike per count, while seventeen averaged 0.0 bikes per count. These blocks are listed in Appendix B.

Based on the counts conducted so far, the DDA should consider removing bike hoops from blocks with low concentrations of parked bikes compared to the number of hoops/racks located on those blocks. Anecdotal evidence suggest that 200 Catherine, which averaged 2 properly parked bikes per count, but has 4-5 hoops, could be one such block.

Properly v. Improperly Parked Bikes
Far more bikes were counted on hoops/ racks than on other street features. Over the course of the six counts, I recorded 1,565 bikes in the DDA area, 1,249 (80%) of which were properly attached to hoops/racks. This suggests that the majority of locations downtown have adequate bike parking for current demand.

The average downtown block had .55 bikes parked improperly on a street feature other than a hoop/rack. Seven blocks averaged two or more bikes parked improperly. The relatively high number of illegally parked bikes on these blocks suggests demand for additional bike parking. In particular, 300 Maynard, W100 Liberty, N400 Fifth and S300 State could benefit from additional parking.

On 300 Maynard improperly parked bikes clustered in front of Café Ambrosia. [1]

[1] The locations of the illegally parked bikes are based on memory, not detailed analysis.

On W100 Liberty improperly parked bikes were distributed fairly evenly along the block.

On N400 Fifth improperly parked bikes were concentrated at the entrance to Kerrytown Market and Shops.

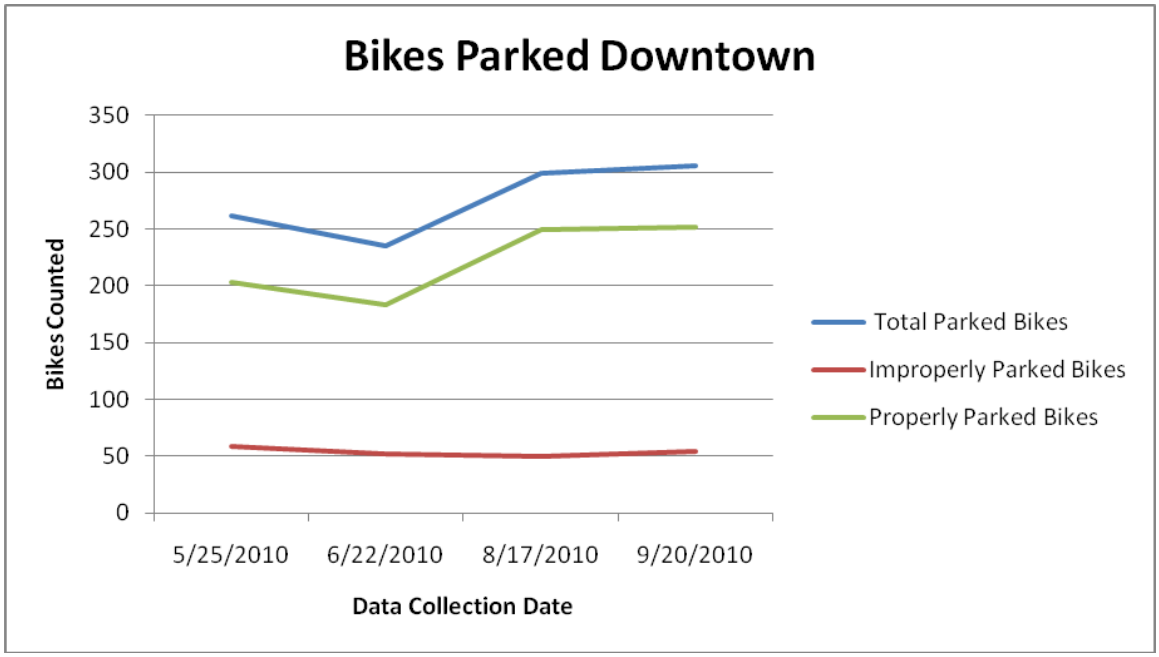
On S300 State improperly parked bikes were scattered along the block.

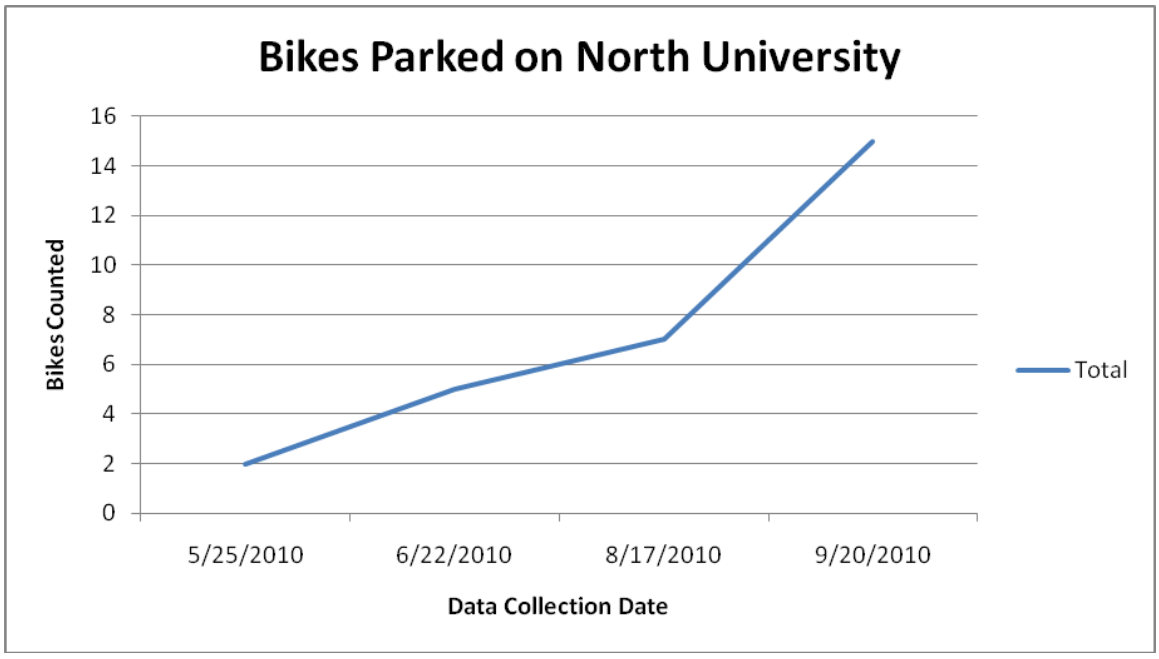
Based on the counts conducted so far, the DDA should consider adding additional bike parking on these blocks, possibly by relocating under used hoops/racks from blocks with low concentrations of bike parking.

Blocks Averaging Two or More Improperly Parked Bikes		
Street	Block	Average/Count
Maynard	300	5.0
Liberty	W100	3.7
Fifth	N400	3.0
State	S300	3.0
South University	1100	2.4
South University	1200	2.3
East University	600	2.3

Parking Trends

As expected, the number of bikes parked downtown increased significantly in September as students returned for school. Returning students have had a particularly large effect on the areas closest to campus. For example, the number of bikes parked on North University increased dramatically





On-street racks
I conducted a count of the on-street racks almost every week from May through September. Most of the on-street racks appeared to be well used with the exception of 619 E. University, which was removed in August. Note, however, that Mighty Good Coffee, which requested the 118 South Main rack, has moved to North Main. This could adversely affect the usage of that rack, which is already low compared to the other three remaining racks.

Bikes Parked at On-Street Racks	
Location	Average/Count
216 N. Fourth	7.42
336 S. State	4.69
777 N. University	3.92
118 S. Main	3.00
619 E. University	0.00

Bike Parking in Parking Structures and Lots
Most of the parking structures and surface lots in Ann Arbor contain bike hoops. The structures and lots located closest to Main and State were the most heavily used.

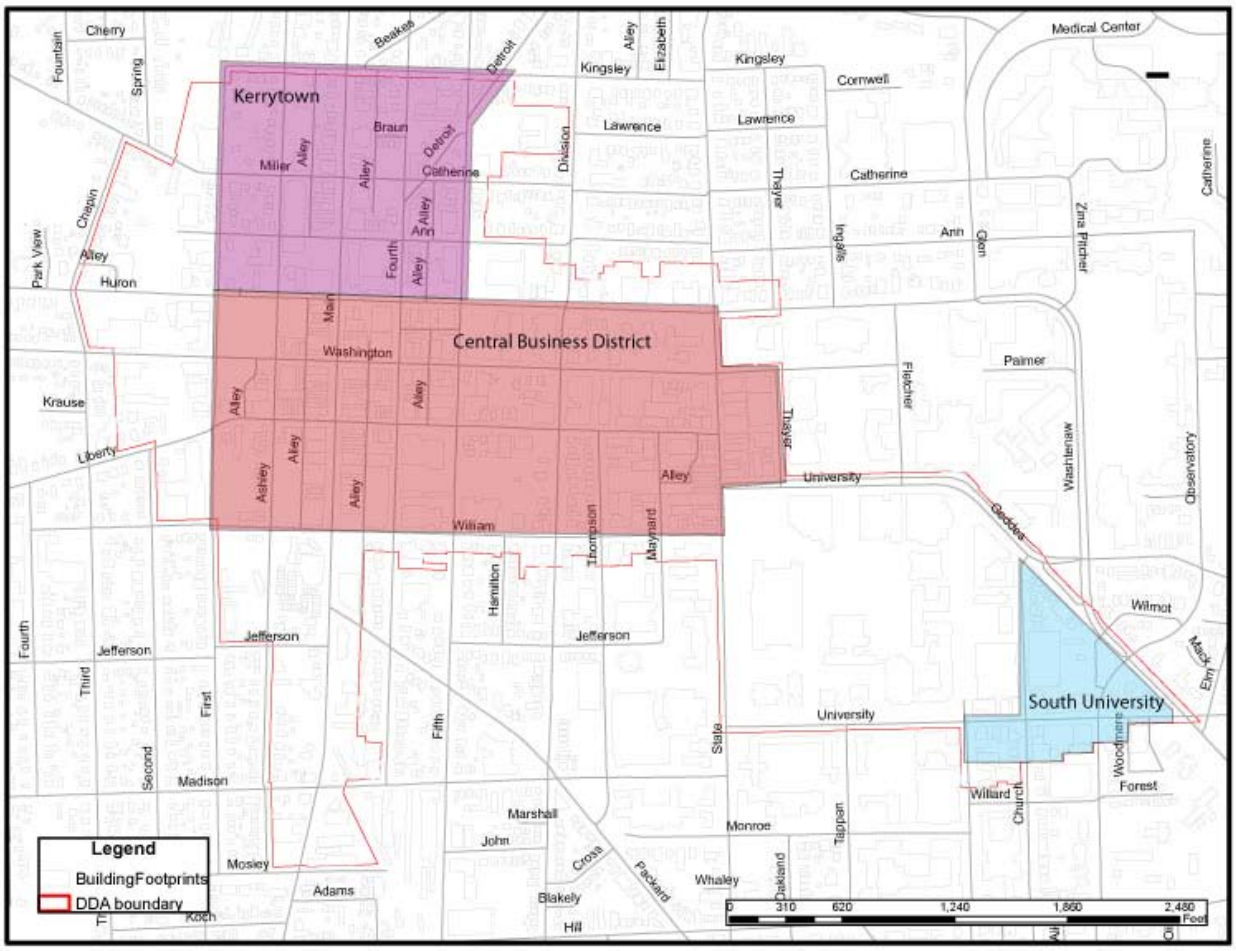
Bikes Parked in Parking Structures & Surface Lots	
Location	Average/Count
Maynard Parking Structure: Maynard Entrance	5.8
Ashley (Kline) Surface Lot	3.3
Fourth & William Parking Structure	3.2
Fourth & Washington Parking Structure	2.7
Maynard Parking Structure: Thompson Entrance	2.5
Ann & Ashley Parking Structure	1.2
Fourth & William Surface Lot	1.0

Problems with Data
Continuing the counts is very important for the data to be useful. The six counts conducted so far have given a good indication of where cyclists park downtown, but they do not provide a large enough sample to accurately reflect typical parking situations on each block.

All of the counts were conducted in the late morning or early-mid afternoon. To get a better picture of bike parking downtown some future counts should be done in the early morning, evening and night. Counts should also be done during the entire biking season to see how usage changes throughout the year. This would probably require doing counts from March through October.

Appendix A: Bike Count Area Map

The map below shows the three areas where the Bike Parking Count was conducted.



Appendix B

Blocks Averaging Less than One Parked Bike		
Street	Block	Average/Count
Church	400	0.0
Division	S100	0.0
Fifth	N100	0.0
First	S300	0.0
Huron	E300	0.0
Huron	E400	0.0
Huron	E500	0.0
Huron	E600	0.0
Huron	E700	0.0
Huron	W200	0.0
Kingsley	E100	0.0
Liberty	W200	0.0
Main	N400	0.0
Miller	100	0.0
Washington	W200	0.0
William	E400	0.0
William	W200	0.0
Ann	W100	0.2
Catherine	100	0.2
Fifth	N200	0.2
Fifth	S100	0.2
Fifth	S300	0.2
Kingsley	W100	0.2
Thayer	(blank)	0.2
Ann	E300	0.3
Ashley	S100	0.3
Fourth	N300	0.3
Kingsley	E200	0.3
Washington	E600	0.3
William	E100	0.3
Ashley	N100	0.5
First	S100	0.5
Main	N300	0.5
Ashley	N200	0.7
Catherine	300	0.7
Division	S300	0.7
Huron	E100	0.7
Huron	E200	0.7
Huron	W100	0.7
William	E200	0.7
Division	S200	0.8

Fifth	N300	0.8
First	S200	0.8
Fourth	S300	0.8
State	S400	0.8