



Memorandum

To: City of Madison

From: Anne Freiwald and Mathew Berkow, Alta Planning + Design

Date: January 5, 2012

Re: Bicycle and Pedestrian Count Data

This memorandum summarizes the results of peak hour counts taken to document bicycle and pedestrian activity at key intersections along Sherman Avenue, Aberg Avenue and select nearby local streets in October 2011. A lack of documentation on usage and demand is common nationwide and frequently limits the ability justify investments in bicycle and pedestrian infrastructure. The results of this limited count effort demonstrate some of the interesting insights that can be gained from consistently monitoring bicycle and pedestrian activity.

Bicycle and pedestrian count methodology

The bicycle and pedestrian counts were performed on weekdays during the morning and evening peak hours. All counts were taken between October 5th and October 11th, 2011. Morning counts were performed between 7-9AM. Afternoon counts were performed between 4-6PM. All counts were performed at intersections. Counts were taken at five intersections along Sherman Avenue, four intersections along Aberg Avenue and at three intersections on nearby local streets. The count results are presented in Table 6 found at the end of this memo and summarized below.

Average Peak Hour Volumes

Table 1 below presents a summary of the peak hour bicycle and pedestrian counts performed at Sherman Avenue, Aberg Avenue and adjacent local streets. As highlighted in the following section, the count data revealed similar numbers of bicycles and pedestrians at intersections along both Sherman Avenue and Aberg Avenue.

Table 1 - Average number of Bicycles and Pedestrians during AM and PM Peak Periods

	7-9 a.m.		4-6 p.m.	
	Bicycle	Pedestrian	Bicycle	Pedestrian
Sherman Ave (5 intersections)	29.0	33.8	55.3	39.8
Aberg Ave (4 intersections)	26.3	35.7	38.5	43.0
Local Streets (3 intersections)	9.0	32.7	13.0	20.5

Bicycle vs. Pedestrian Activity

The count data reveals that the relative share of bicycle activity and pedestrian activity is approximately even on both Sherman Avenue and Aberg Avenue. The local streets, by contrast, have a higher share of pedestrians.

Table 2 - Comparison of Bicycle vs. Pedestrian Volumes

	Bicycle	Pedestrian	Total
Sherman Avenue	53%	47%	100%
Aberg Avenue	46%	54%	100%
Local Streets	28%	72%	100%

Sidewalk Riding

As indicated in Table 3 below, approximately half of cyclists choose to ride on the sidewalk on both streets. While Table 2 indicates that activity levels between bicycles and pedestrians are similar, only pedestrians have dedicated facilities (sidewalks) on these two arterial streets. The lack of bicycle facilities streets contributes to real and perceived conflicts between bicycles and pedestrians as many cyclists choose to ride on the sidewalk, minimizing their exposure to vehicular traffic. On the local streets, by contrast, bicyclists predominantly ride on the street rather than the sidewalk.

Table 3 - Comparison of On-street vs. Sidewalk Bicycle Riding

	On-Street	Sidewalk	Total
Sherman Avenue	48%	52%	100%
Aberg Avenue	56%	44%	100%
Local Streets	89%	11%	100%

Overall Volumes

Based on the peak hour count volumes, it is possible to develop estimates of daily, monthly and annual activity levels at the count intersections. The extrapolation of peak hour counts is based on the National Bicycle and Pedestrian Documentation Project methodology (www.bikepeddocumentation.org) and is presented in Table 4 below. The methodology adjusts the peak hour counts as a proportion of daily trips based on annual 24-hour count data to estimate annual usage. Additional data and local adjustment factors would increase the accuracy of these results; however, this extrapolation, based on the existing count data and national adjustment factors, provides order of magnitude estimates of activity that can be useful to inform investment decisions. The results indicate approximately 200,000 annual bicycle and pedestrian trips are made, respectively, along Sherman and Aberg intersections.

Table 4 - Estimates of Daily, Monthly and Annual Activity

	Bicycle				Pedestrian			
	PM Peak Average	Daily Estimate (Weekday)	Monthly Estimate (October)	Annual Estimate	PM Peak Average	Daily Estimate (Weekday)	Monthly Estimate (October)	Annual Estimate
Sherman (5 intersections)	55.3	447	16,484	274,728	39.8	321	11,863	197,724
Aberg (4 intersections)	38.5	311	11,476	191,266	43.0	347	12,817	213,622

Comparison with 2009 Count Data

Counts were performed at a more limited number of locations in 2009 as compared to the expanded number of locations in 2011. Below are the morning peak hour count volumes at three locations counted in both 2009 and 2011. The volumes recorded in 2009 are similar to those from 2011, indicating that the count volumes evaluated in this memorandum likely represent 'typical' volumes of bicycles and pedestrians at these locations.

Table 5 -AM Peak Count Volumes in 2009 and 2011

	2009 (7-9 a.m.)		2011 (7-9 a.m.)	
	Bicycle	Pedestrian	Bicycle	Pedestrian
Sherman Ave/ Aberg Ave	39	39	31	51
Sherman Ave/ Fordem Ave	49	10	44	13
Aberg Ave/ Ruskin	23	31	17	23

Conclusion

The results of bicycle and pedestrian counts performed at intersections along Sherman Avenue, Aberg Avenue and nearby local streets offer valuable insight into both the magnitude and nature of non-motorized activity. Key findings include:

- The relative share of bicycle activity and pedestrian activity at Sherman Avenue and Aberg Avenue intersections is approximately even (i.e., 50% each mode). The local streets by contrast have a higher share of pedestrian activity.
- With no bicycle facilities present on Sherman Avenue and Aberg Avenue, approximately half of the cyclists choose to ride on the sidewalk. On the local streets, cyclists tend to ride on the street.
- While activity levels for bicycles and pedestrians along Sherman and Aberg are similar, only pedestrians have dedicated facilities. The peak hour count volumes and the extrapolations to daily, monthly and annual estimates in Table 4 suggest that dedicated bicycle facilities serving these two corridors would likely attract riders.
- If only 10% of the cyclists who are now riding on sidewalks would ride on dedicated bike lanes, approximately 20,000 person trips per year would be moved off of the sidewalks, or 50 bicyclists per day. In addition to reducing bicycle-pedestrian conflicts, the movement of bicyclists off of the sidewalk would likely reduce the probability of bicyclist involved collisions with right turning motorists, as it is easier for a motorist approaching an intersection to notice a bicycle riding in a bike lane rather than on the sidewalk.

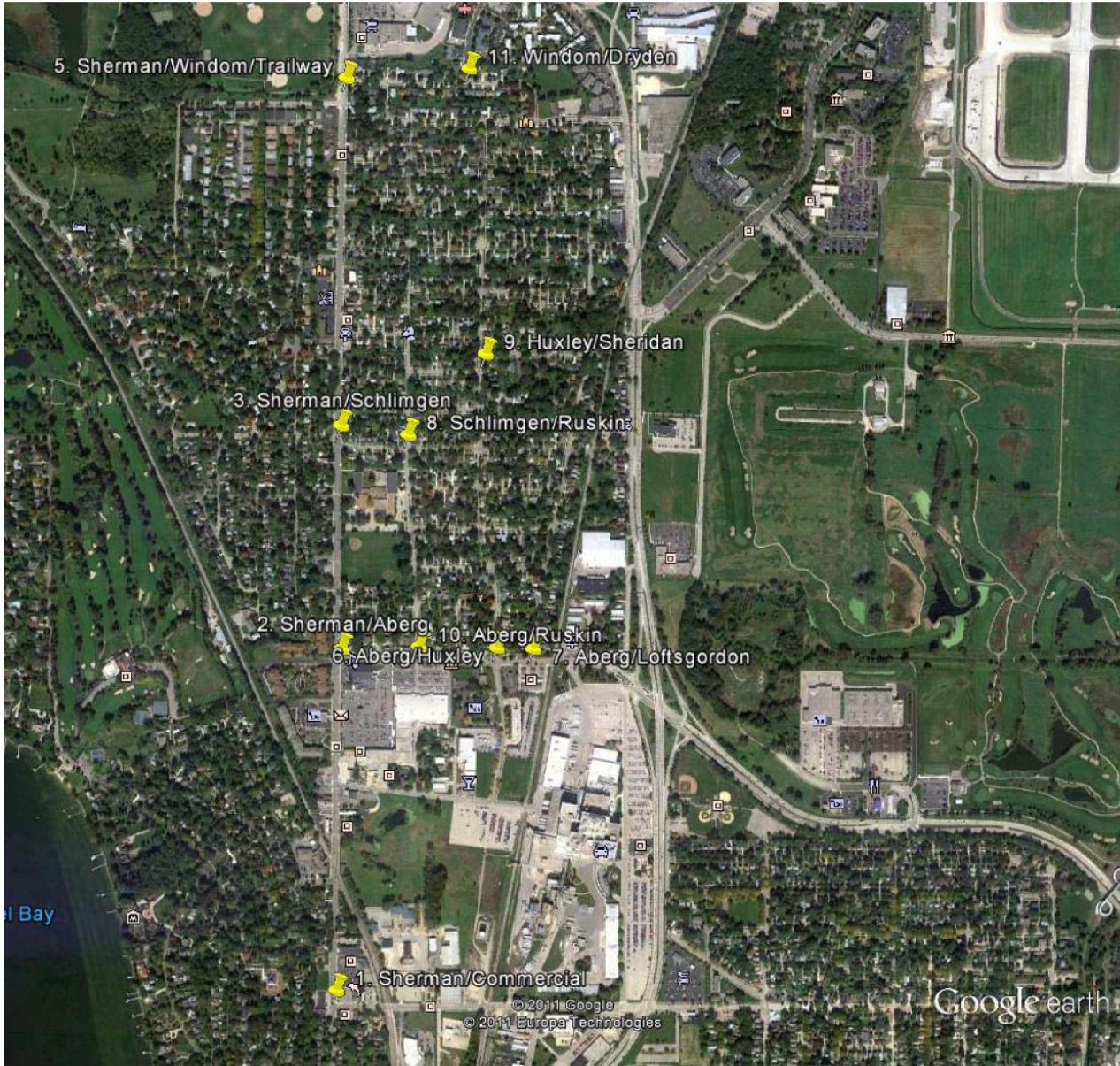
Table 6 - 2011 Bicycle and Pedestrian Peak Hour Count Results

Street	Type	7-9 a.m.				4-6 p.m.			
		Bike (Street)	Bike (Sidewalk)	Bike (Total)	Pedestrian	Bike (Street)	Bike (Sidewalk)	Bike (Total)	Pedestrian
Sherman/Commercial	Arterial	15	19	34	14	25	29	54	24
Sherman/Aberg *	Arterial	16	15	31	51	24	44	68	27
Sherman/Schlimgen	Arterial	14	4	18	62				
Sherman/Fordem	Arterial	30	14	44	13	29	33	62	24
Sherman/Window/Trailway	Arterial	<u>11</u>	<u>7</u>	<u>18</u>	<u>29</u>	<u>13</u>	<u>24</u>	<u>37</u>	<u>84</u>
Sherman Total		86	59	145	169	91	130	221	159
Average		17.2	11.8	29.0	33.8	22.8	32.5	55.3	39.8
Percent		59%	41%	46%	54%	41%	59%	58%	42%

Street	Type	7-9 a.m.				4-6 p.m.			
		Bike (Street)	Bike (Sidewalk)	Bike (Total)	Pedestrian	Bike (Street)	Bike (Sidewalk)	Bike (Total)	Pedestrian
Aberg/Huxley	Arterial					30	3	33	80
Aberg/Loftsgordon	Arterial	16	15	31	33	18	16	34	28
Aberg/Ruskin	Arterial	12	5	17	23	14	5	19	37
Aberg/Sherman *	Arterial	<u>16</u>	<u>15</u>	<u>31</u>	<u>51</u>	<u>24</u>	<u>44</u>	<u>68</u>	<u>27</u>
Aberg Total		44	35	79	107	86	68	154	172
Average		14.7	11.7	26.3	35.7	21.5	17.0	38.5	43.0
Percent		56%	44%	42%	58%	56%	44%	47%	53%

Street	Type	7-9 a.m.				4-6 p.m.			
		Bike (Street)	Bike (Sidewalk)	Bike (Total)	Pedestrian	Bike (Street)	Bike (Sidewalk)	Bike (Total)	Pedestrian
Schlimgen/Ruskin	Local	16	2	18	57	17	2	19	15
Huxley/Sheridan	Local	2	0	2	23				
Window Way/Dryden	Local	<u>6</u>	<u>1</u>	<u>7</u>	<u>18</u>	<u>6</u>	<u>1</u>	<u>7</u>	<u>26</u>
Residential Total		24	3	27	98	23	3	26	41
Average		8.0	1.0	9.0	32.7	11.5	1.5	13.0	20.5
Percent		89%	11%	22%	78%	88%	12%	39%	61%

* Sherman/Aberg and Aberg/Sherman are identical counts.



Google earth



Figure 1 - Map of Bicycle/Pedestrian Count Locations