

Addendum Analysis- Madison On-Street Parking Demand Assessment

City of Madison Parking Utility staff have been tracking on-street meter parking demand on a monthly basis for over 30 years. Staff surveys were conducted once a month on a weekday at the intervals of 8AM, 9AM, 3PM, 4PM and 5PM. They were kind enough to provide us with the years 2009-2013. Over 25,000 lines of data were analysis in Excel. We have utilized data from January, 2009 through June, 2013. We have used data given in raw, space-by space form for some 450+ parking stalls across 57 zones.

Parking utility staff would like to maintain 80-85% occupancy of on-street meters. At this time, demand usage is falling below that figure, and demand for on-street meter parking is moderate. System-wide demand use tends to average roughly between 40% and 60% of available parking, discounting some 10-15% of on-street stalls that are usually unavailable/off-line. That amount of unavailable stalls can spike in late afternoon of summer and fall months up to 20% of all on-street stalls, most probably due to special events like Concerts on the Square and UW-Madison sporting events, among others. Individuals with Dis/Vet tags are able under Wisconsin state law to park for free at the meters and are usually occupying some 5-10% of available parking stalls, at some times and block area as many spots as those actually paying for stalls.

Summer tends to see the highest parking demand of any quarter, which is interesting and a bit counter intuitive to Madison's culture. Bicyclists are in full-use in summer, but car use is showing peak demand (for meter, short-term parking). Observing quarterly demand paid parkers occupy some 15-20% of spaces at 8AM and 9AM, 20-30% of available spaces, at 3PM and 4PM, and jumping to around 40% of available spaces at 5PM, which is noteworthy, as system meters are free to users starting at 6pm. Peak demand is clearly observed in the late afternoon between 4PM and 5PM. Unpaid "freeloaders" are around 10% of available parking spots throughout the day, but begin to spike in the range of 20-30% of available stalls as the 5PM hour ticks closer to 6pm when on-street meters are free of charge.

Policy Recommendations

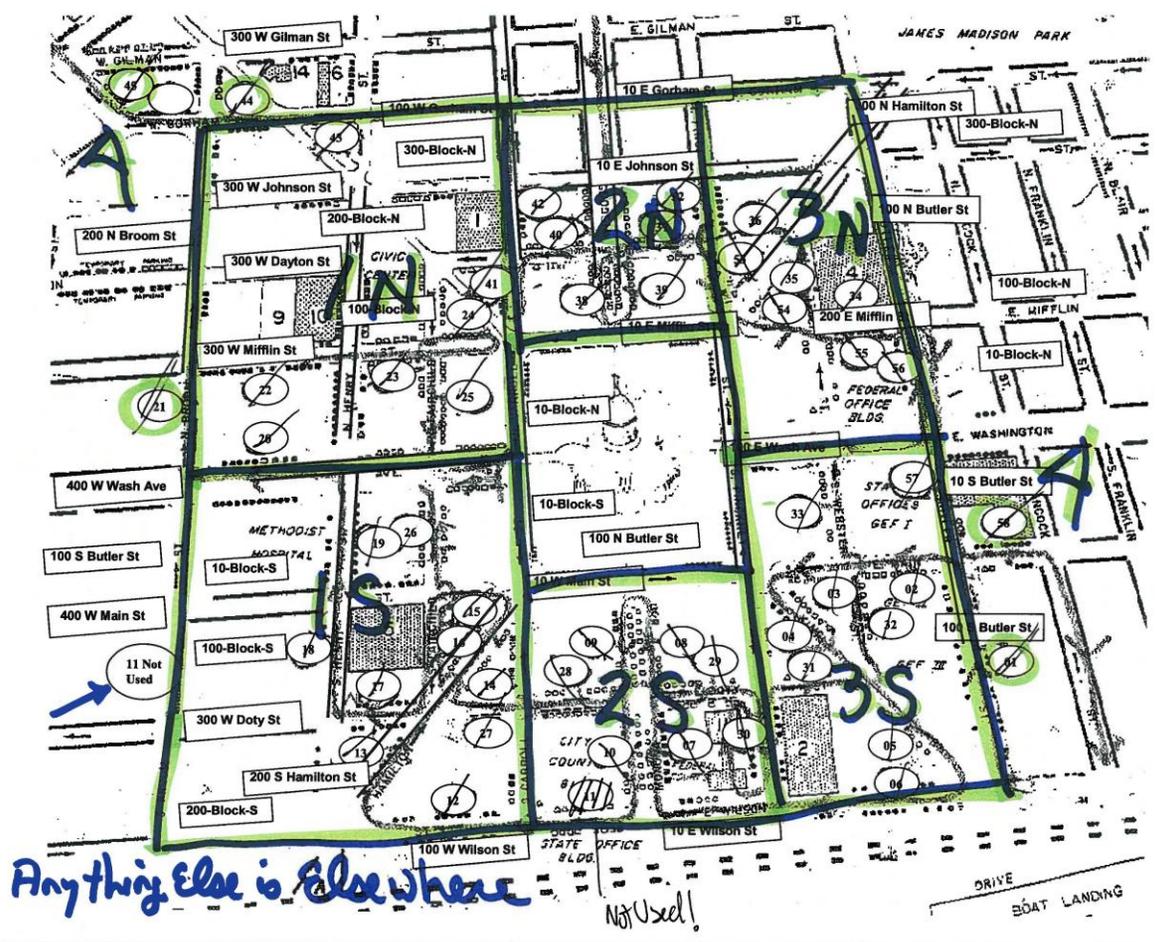
- 1) While the City of Madison's new Pay-by-Space Meter system has the technological capacity to implement demand-based, variable pricing, it does not appear that on-street meter demand is yet consistently seeing demand near the critical 80-85% capacity level that would warrant adjusting pricing with system-wide peak/variable pricing. Since non-metered, 2 hour parking is located within several blocks of many downtown meter locations, increasing prices further on meters risks displacing additional users to either the city's less expensive parking garages that have their own capacity issues, or to downtown residential parking areas that do not contain meters, creating conflict with those users, many of whom possess residential parking permits and have an expectation of parking availability within their zones.
- 2) Demand is clearly rising for on-street parking towards the end of the day. Whether this is because of new users arriving downtown or whether it is a reshuffling of cars from paid to un-paid, on-street meters is unknown. If any system expansion were to occur, it would be

recommended to explore expanding the hours of enforcement of the existing system past 6pm into the evening hours to capture additional revenue and to reflect the shift of use the downtown isthmus has seen in recent years from an office/commercial-heavy area that used to functionally shutter at 5pm. Now Madison has a vibrant downtown district with a thriving retail and nightlife economy that stays open well into the nighttime. Parking ramp demand data shows a surge in activity in the evening time, even when on-street meters are free of charge, indicating paid demand for nighttime parking. Staffing expenses and other cost considerations, especially displacing revenue from the paid parking ramps, should be fully considered before action is taken.

- 3) If any expanded or variable pricing system is considered at this time, it should be for zones and areas that see high demand during special events that draw tens of thousands of people to the downtown, most notably UW-Madison athletic events, the IronMan Wisconsin Triathlon, Taste of Madison, Concerts on the Square, and Art Fair on the Square. Selectively implementing some peak pricing selectively on occasion where the demand warrants is the best option available for the Utility at this time to see additional revenue.
- 4) Enforcement of the parking meters is taken very seriously by the City of Madison, with some half-dozen full-time parking enforcement officers spending their work day on-foot enforcing the downtown core parking meters. They possess handheld computers that alert them to expired meter locations, furthering their efficiency and target methodology. Many citizens report receiving a ticket from the attentive officers. However, any efforts to minimize the 10-15% of available spots that at any given time are parked at without producing revenue should be undertaken.
- 5) Engage in a dialogue with other Wisconsin communities to understand the system implications from unpaid Dis/Vet users on varying municipal and county parking systems. Work to see if a coalition of bipartisan communities and legislators are interested in working on this issue on legislation reform of the law to ensure the system is not abused.

Appendix A- Capitol Zone-Parking Analysis

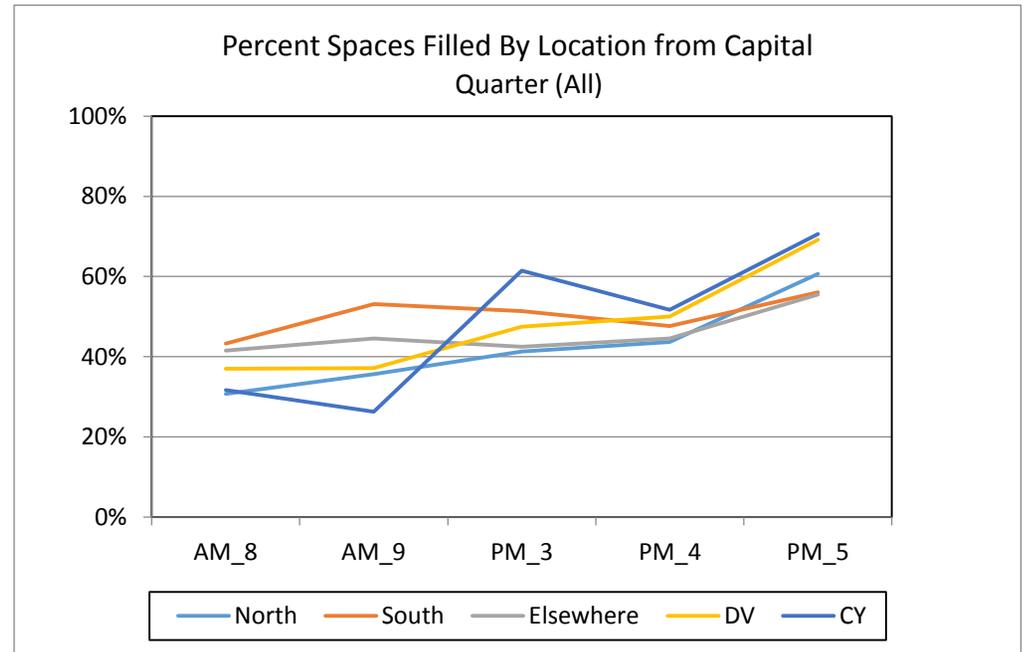
We have tabulated block samples and have assigned them into 10 quadrants/buckets to break down usage patterns across area and time of day. The south side of the square has more demand in the morning for on-street parking, and the north spikes in the late afternoon.



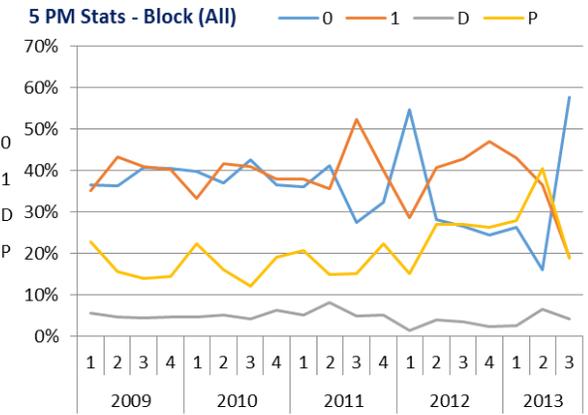
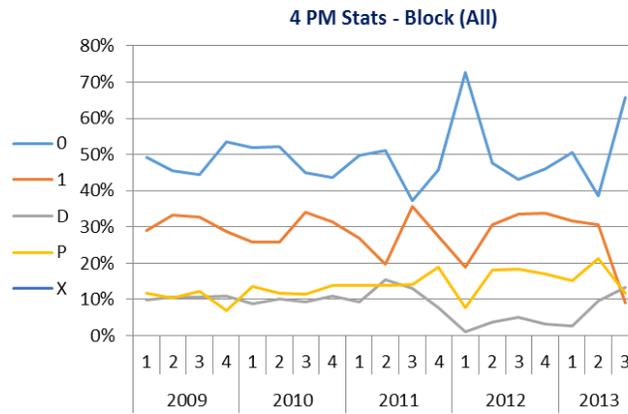
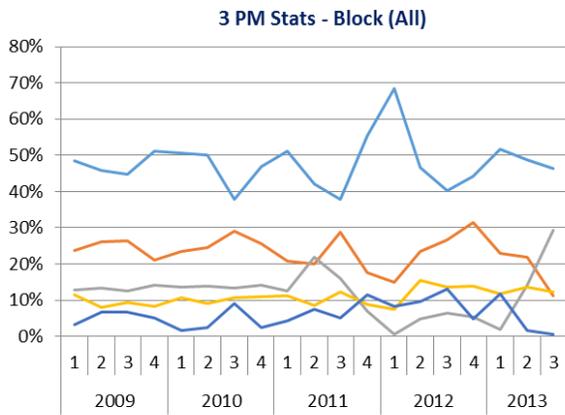
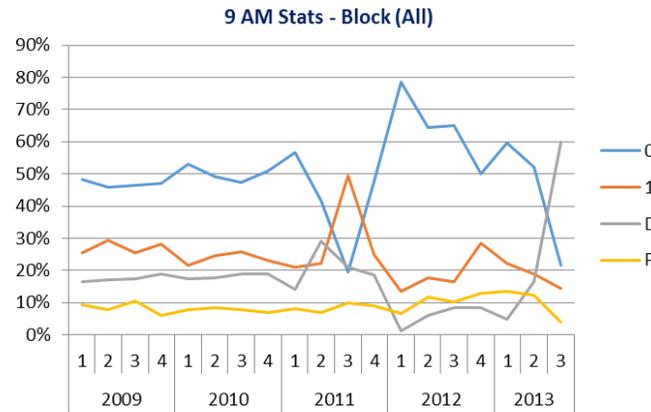
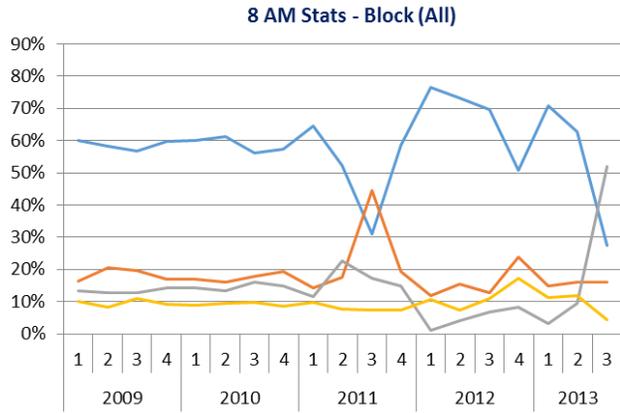
Appendix A (cont.)- Capitol Zone-Parking Analysis

Row Labels	AM_8	AM_9	PM_3	PM_4	PM_5
4	34.7%	39.6%	41.1%	40.7%	48.4%
1N	27.5%	35.9%	43.5%	43.3%	59.0%
1S	41.7%	55.7%	52.2%	43.8%	51.4%
2N	34.2%	35.8%	41.7%	43.8%	61.6%
2S	45.8%	55.4%	54.9%	53.6%	61.6%
3N	30.5%	35.2%	38.7%	43.8%	61.5%
3S	42.4%	48.3%	47.0%	45.4%	55.2%
CY	31.7%	26.3%	61.5%	51.7%	70.6%
DV	37.0%	37.1%	47.5%	50.1%	69.2%
E	48.4%	49.6%	43.9%	48.3%	62.5%

	AM_8	AM_9	PM_3	PM_4	PM_5
North	30.7%	35.6%	41.3%	43.7%	60.7%
South	43.3%	53.1%	51.4%	47.6%	56.0%
Elsewhere	41.5%	44.6%	42.5%	44.5%	55.5%
DV	37.0%	37.1%	47.5%	50.1%	69.2%
CY	31.7%	26.3%	61.5%	51.7%	70.6%



Appendix B



System Wide Annual & Quarterly Usage Demand, by Year

Row: 1=Winter (Dec-Feb), 2=Spring (Mar-May), 3=Summer (June-Aug), 4=Fall (Sept-Nov)
Key: 0=Vacant, 1= Paid Full, D=Full Dis/V, P=Unpaid Full, X=Offline/Unavailable

Appendix C

Monthly System-Wide Demand Data, By Hour

8 AM Stats						9 AM Stats						3 PM Stats						4 PM Stats						5 PM Stats															
Year	(All)					Year	(All)					Year	(All)					Year	(All)					Year	(All)														
Count of AM_08	Column Labels	0	1	D	P	X	Grand Total	Count of AM_09	Column Labels	0	1	D	P	X	Grand Total	Count of PM_03	Column Labels	0	1	D	P	X	Grand Total	Count of PM_04	Column Labels	0	1	D	P	X	Grand Total	Count of PM_05	Column Labels	0	1	D	P	X	Grand Total
1	Row Labels	0	1	D	P	X	Grand Total	1	Row Labels	0	1	D	P	X	Grand Total	1	Row Labels	0	1	D	P	X	Grand Total	1	Row Labels	0	1	D	P	X	Grand Total	1	Row Labels	0	1	D	P	X	Grand Total
1		1391	344	194	208	128	2265	1		1275	435	235	188	132	2265	1		1293	460	197	208	107	2265	1		1228	511	145	241	140	2265	1		961	682	82	402	138	2265
2		1408	270	194	180	213	2265	2		1179	424	244	193	225	2265	2		1170	429	200	263	203	2265	2		1119	501	133	271	241	2265	2		772	719	89	449	236	2265
3		1363	337	211	205	149	2265	3		1150	455	288	213	159	2265	3		1096	517	238	295	119	2265	3		1037	559	174	338	157	2265	3		751	767	123	488	156	2265
4		1377	337	190	170	191	2265	4		1144	481	265	173	202	2265	4		1179	488	243	212	142	2265	4		1081	587	179	262	156	2265	4		661	885	121	446	152	2265
5		1133	397	377	191	167	2265	5		890	480	527	207	171	2265	5		896	569	446	237	117	2265	5		863	633	274	359	136	2265	5		616	860	121	535	133	2265
6		1030	383	409	144	299	2265	6		795	515	482	173	300	2265	6		912	548	348	269	188	2265	6		924	478	195	226	442	2265	6		839	615	79	292	440	2265
7		1020	251	217	153	174	1815	7		865	342	280	152	176	1815	7		811	411	221	207	165	1815	7		755	470	163	232	195	1815	7		610	637	83	288	187	1815
8		642	607	220	184	147	1810	8		578	655	269	159	149	1810	8		608	679	140	253	129	1810	8		609	679	140	253	129	1810	8		435	896	58	295	126	1810
9		676	214	184	166	109	1359	9		580	314	234	120	111	1359	9		581	337	174	183	84	1359	9		567	379	110	194	109	1359	9		389	514	62	290	104	1359
10		743	240	137	138	99	1357	10		667	303	159	126	102	1357	10		648	348	112	145	104	1357	10		468	339	71	162	317	1357	10		319	448	40	235	315	1357
11		690	324	145	124	74	1357	11		629	361	184	106	77	1357	11		741	343	107	127	39	1357	11		516	344	74	143	280	1357	11		370	453	46	208	280	1357
12		1122	272	163	205	50	1812	12		1047	371	201	141	52	1812	12		975	446	162	192	37	1812	12		893	521	112	207	79	1812	12		604	665	64	404	75	1812
	Grand Total	12595	3976	2651	2078	1800	23100		Grand Total	10789	5136	3368	1951	1856	23100		Grand Total	10970	5495	2673	2545	1417	23100		Grand Total	10060	6001	1770	2888	2381	23100		Grand Total	7307	8141	968	4342	2342	23100

8 AM Stats					
Month	0	1	D	P	X
1	61%	15%	9%	8%	6%
2	62%	12%	9%	8%	9%
3	60%	15%	9%	9%	7%
4	61%	15%	8%	8%	8%
5	50%	18%	17%	8%	7%
6	45%	17%	18%	6%	13%
7	56%	14%	12%	8%	10%
8	35%	34%	12%	11%	8%
9	50%	16%	14%	12%	8%
10	58%	18%	10%	10%	7%
11	51%	24%	11%	9%	5%
12	62%	15%	9%	11%	3%
Annual	55%	17%	11%	9%	8%

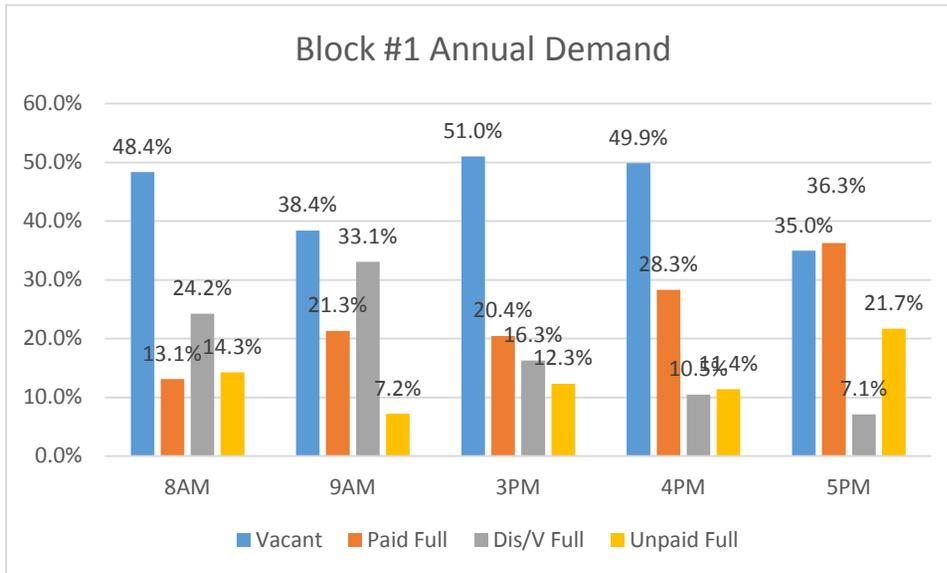
9 AM Stats					
Month	0	1	D	P	X
1	56%	19%	10%	8%	6%
2	52%	19%	11%	9%	10%
3	51%	20%	13%	9%	7%
4	51%	21%	12%	8%	9%
5	39%	21%	23%	9%	8%
6	35%	23%	21%	8%	13%
7	48%	19%	15%	8%	10%
8	32%	36%	15%	9%	8%
9	43%	23%	17%	9%	8%
10	49%	22%	12%	9%	8%
11	46%	27%	14%	8%	6%
12	58%	20%	11%	8%	3%
Annual	47%	22%	15%	8%	8%

3 PM Stats					
Month	0	1	D	P	X
1	57%	20%	9%	9%	5%
2	52%	19%	9%	12%	9%
3	48%	23%	11%	13%	5%
4	52%	22%	11%	9%	6%
5	40%	25%	20%	10%	5%
6	40%	24%	15%	12%	8%
7	45%	23%	12%	11%	9%
8	37%	33%	12%	11%	6%
9	45%	25%	13%	13%	6%
10	48%	26%	8%	11%	8%
11	55%	25%	8%	9%	3%
12	54%	25%	9%	11%	2%
Annual	47%	24%	12%	11%	6%

4 PM Stats					
Month	0	1	D	P	X
1	54%	23%	6%	11%	6%
2	49%	22%	6%	12%	11%
3	46%	25%	8%	15%	7%
4	48%	26%	8%	12%	7%
5	38%	28%	12%	16%	6%
6	41%	21%	9%	10%	20%
7	42%	26%	9%	13%	11%
8	24%	38%	8%	14%	7%
9	42%	28%	8%	14%	8%
10	34%	25%	5%	12%	23%
11	38%	25%	5%	11%	21%
12	49%	29%	6%	11%	4%
Annual	44%	26%	8%	13%	10%

5 PM Stats					
Month	0	1	D	P	X
1	42%	30%	4%	18%	6%
2	34%	32%	4%	20%	10%
3	32%	34%	5%	22%	7%
4	29%	39%	5%	20%	7%
5	27%	38%	5%	24%	6%
6	37%	27%	3%	13%	19%
7	34%	35%	5%	16%	10%
8	24%	50%	3%	16%	7%
9	29%	38%	5%	21%	8%
10	24%	33%	3%	17%	23%
11	27%	33%	3%	15%	21%
12	33%	27%	4%	22%	4%
Annual	32%	35%	4%	19%	10%

Appendix D Example of Block #1 Annual & Quarterly Usage Demand



Row Labels	0	1 D	P	Grand Total	
1	48.36%	13.13%	24.24%	14.27%	100.00%
1	50.67%	11.11%	20.44%	17.78%	100.00%
2	57.56%	12.61%	16.39%	13.45%	100.00%
3	38.73%	13.24%	38.73%	9.31%	100.00%
4	42.40%	17.60%	22.40%	17.60%	100.00%
Grand Total	48.36%	13.13%	24.24%	14.27%	100.00%

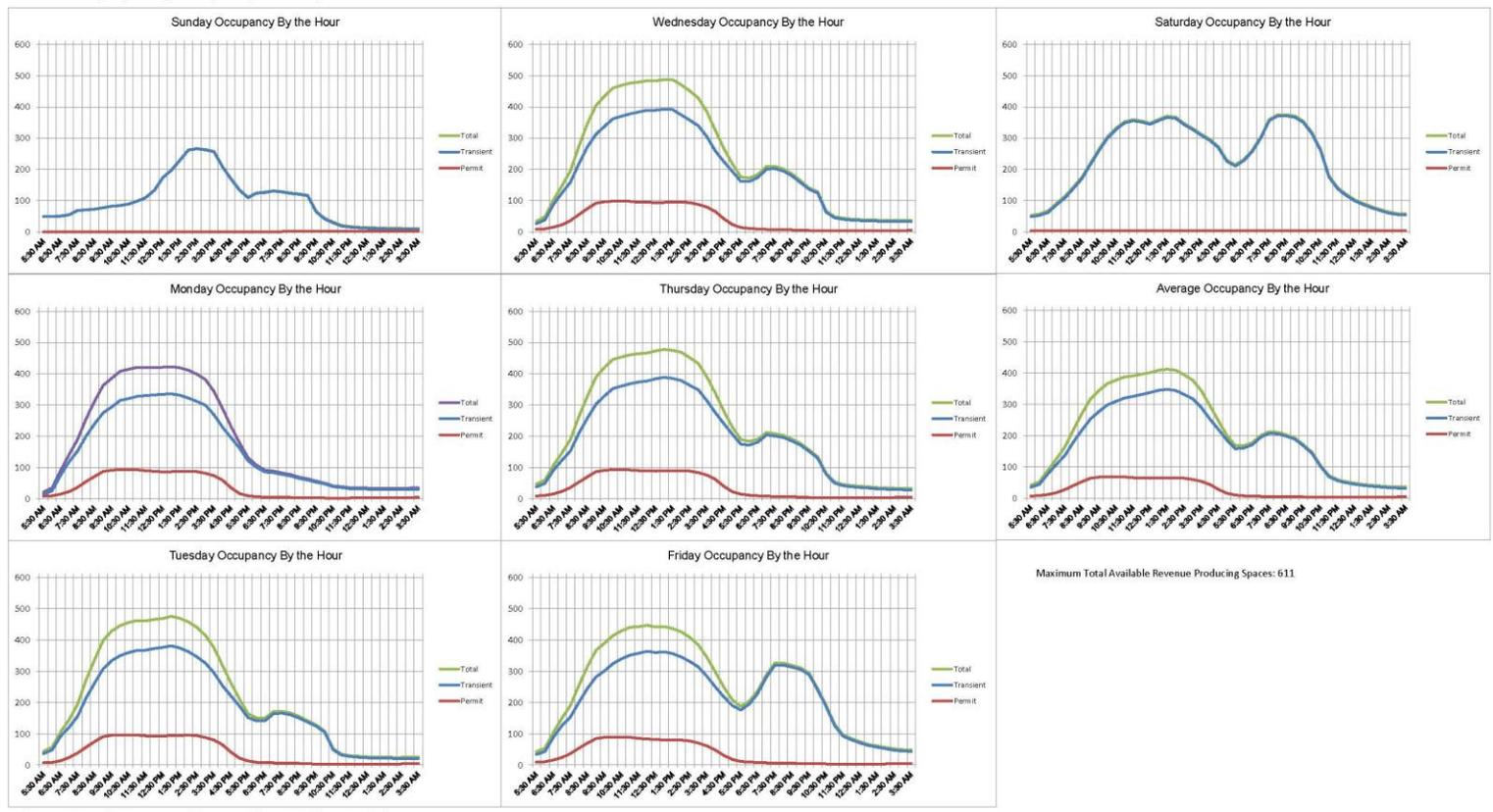
Row Labels	0	1 D	P	Grand Total	
1	38.40%	21.29%	33.08%	7.22%	100.00%
1	45.78%	20.00%	28.44%	5.78%	100.00%
2	45.76%	19.07%	27.97%	7.20%	100.00%
3	25.49%	21.57%	47.06%	5.88%	100.00%
4	32.26%	27.42%	28.23%	12.10%	100.00%
Grand Total	38.40%	21.29%	33.08%	7.22%	100.00%

Row Labels	0	1 D	P	Grand Total	
1	50.99%	20.44%	16.26%	12.31%	100.00%
1	57.46%	17.91%	13.43%	11.19%	100.00%
2	60.69%	13.79%	13.79%	11.72%	100.00%
3	34.48%	25.00%	26.72%	13.79%	100.00%
4	45.00%	33.33%	8.33%	13.33%	100.00%
Grand Total	50.99%	20.44%	16.26%	12.31%	100.00%

Row Labels	0	1 D	P	Grand Total	
1	49.89%	28.29%	10.47%	11.36%	100.00%
1	56.82%	25.00%	11.36%	6.82%	100.00%
2	53.38%	19.59%	9.46%	17.57%	100.00%
3	46.15%	29.91%	13.68%	10.26%	100.00%
4	30.77%	57.69%	3.85%	7.69%	100.00%
Grand Total	49.89%	28.29%	10.47%	11.36%	100.00%

Row Labels	0	1 D	P	Grand Total	
1	34.96%	36.28%	7.08%	21.68%	100.00%
1	49.24%	26.52%	6.82%	17.42%	100.00%
2	36.00%	27.33%	8.67%	28.00%	100.00%
3	27.35%	48.72%	6.84%	17.09%	100.00%
4	13.21%	58.49%	3.77%	24.53%	100.00%
Grand Total	34.96%	36.28%	7.08%	21.68%	100.00%

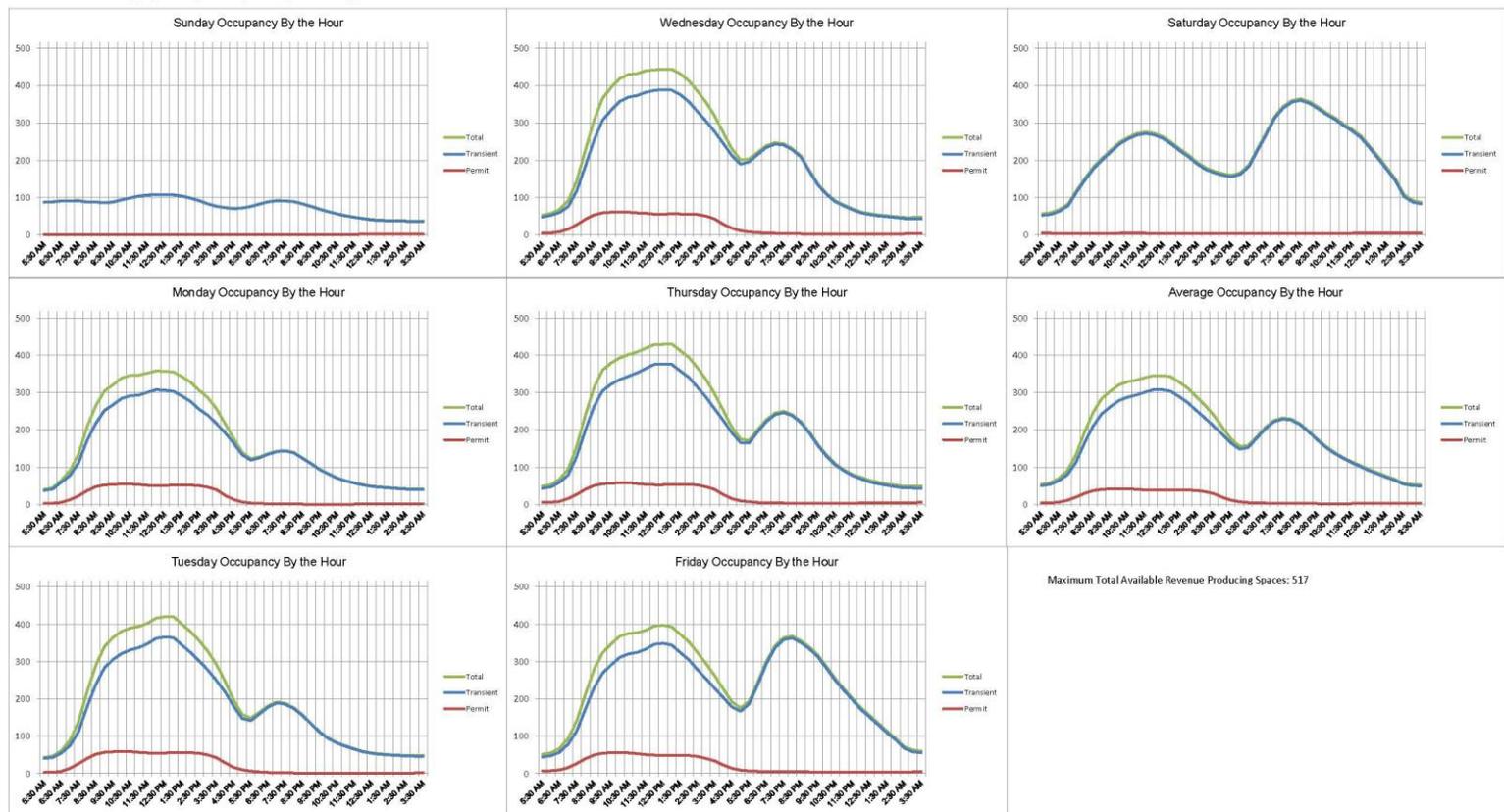
Overture Ctr (OC) Garage Daily Occupancies By Half-Hour Increments Nov 2012 thru Oct 2013



OC has a maximum of 611 revenue producing spaces (does not include motorcycles).

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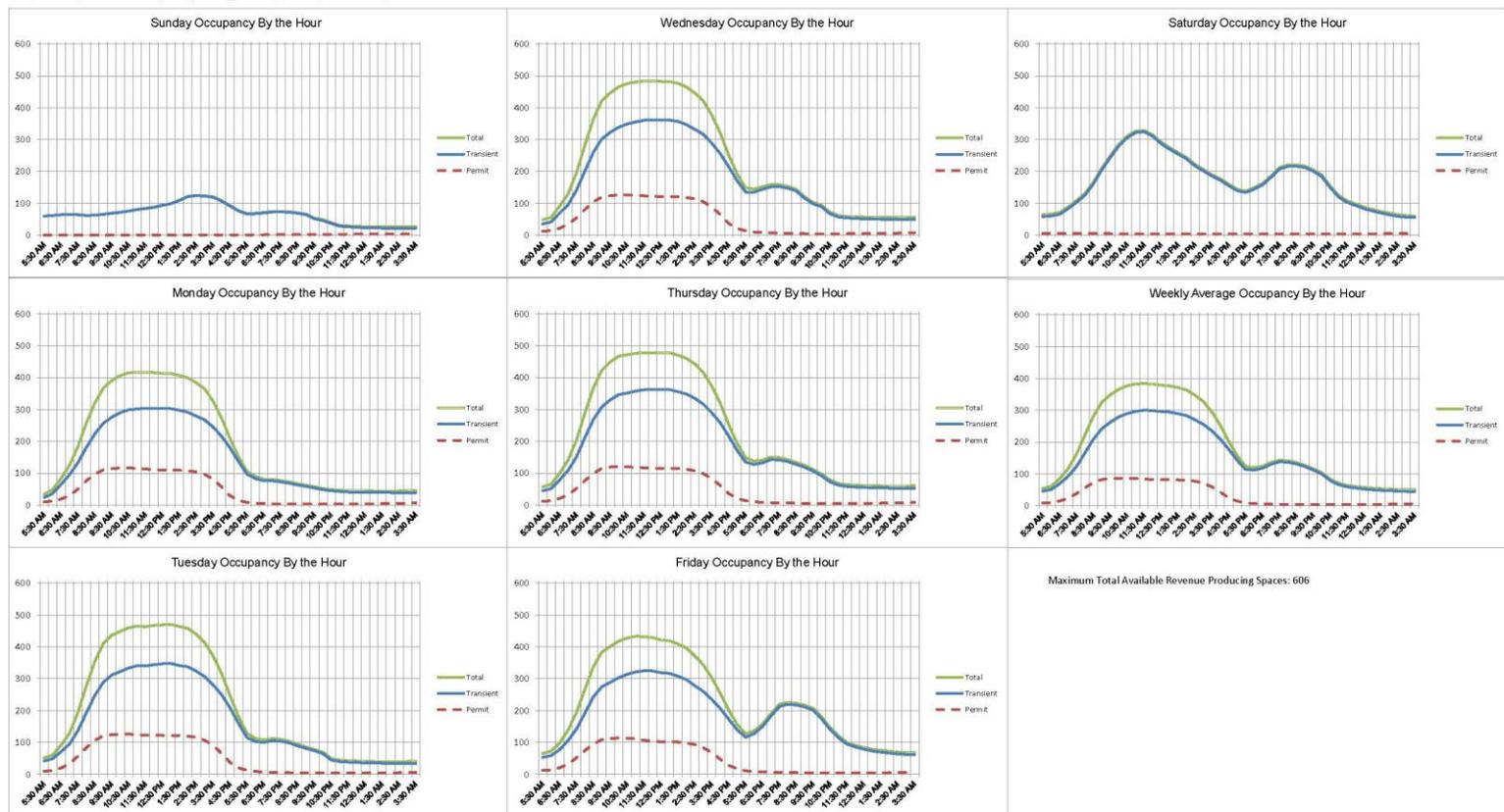
Government East (GE) Garage Daily Occupancies By Half-Hour Increments Nov 2012 thru Oct 2013



GE has a maximum of 517 revenue producing spaces (does not include motorcycles).

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Capitol Square North (CSN) Garage Daily Occupancies By Half-Hour Increments Nov 2012 to Oct 2013

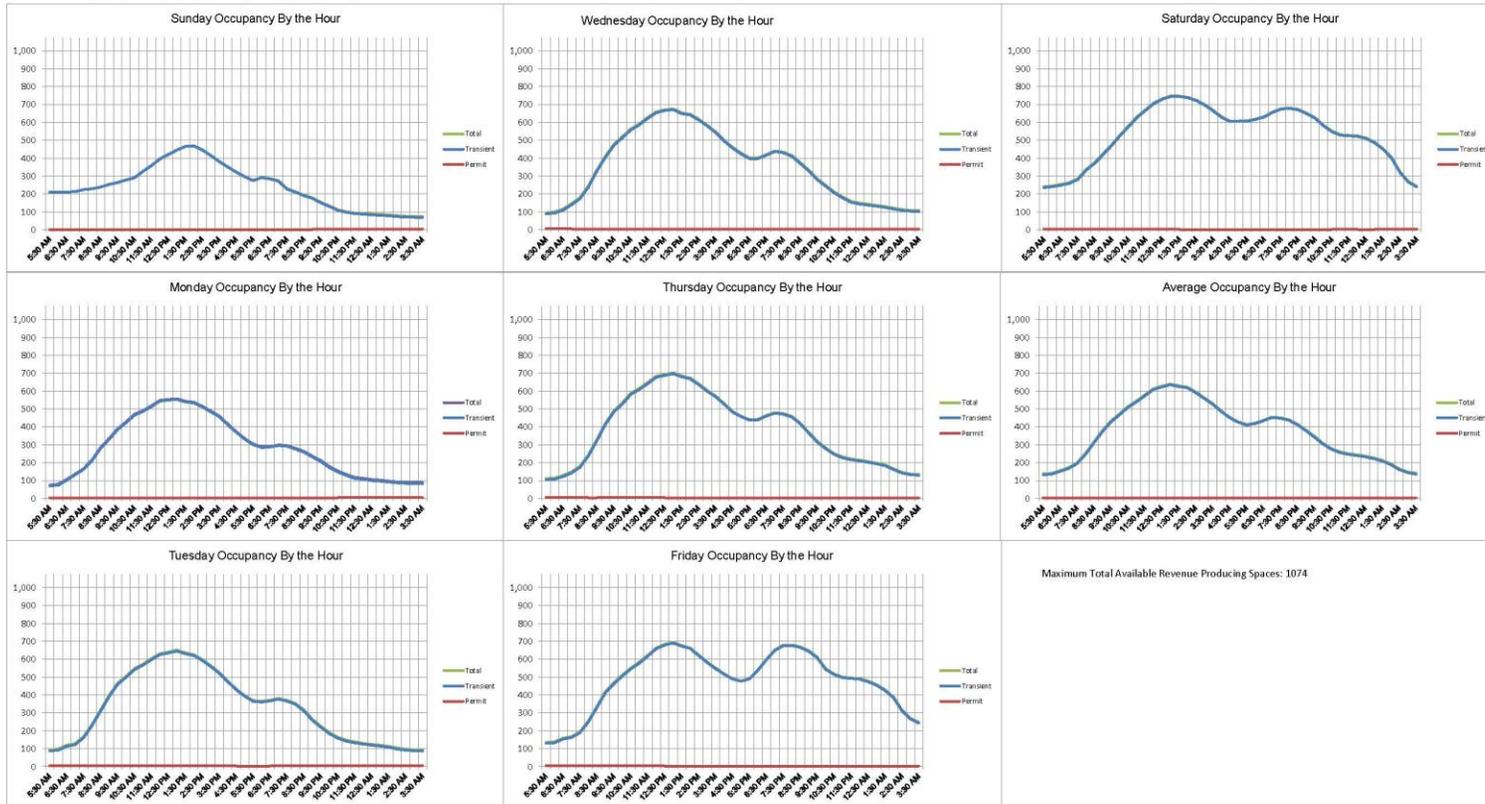


CSN has a maximum of 606 revenue producing spaces (does not include motorcycles).

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Maximum Total Available Revenue Producing Spaces: 606

State St Campus (SSCA) Garage Daily Occupancies By Half-Hour Increments Nov 2012 thru Oct 2013



SSCA has a maximum of 1,074 revenue producing spaces (does not include motorcycles).

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Appendix F- Residential Parking Zones (Source: City of Madison Parking Utility)

