2009 Pumpage

	Milw. Water	Ground Water	Total
January	36,829,000	46,766,000	83,595,000
February	33,723,000	43,337,000	77,060,000
March	37,012,000	45,696,000	82,708,000
April	35,494,000	44,935,000	80,429,000
May	40,849,000	52,008,000	92,857,000
June	44,960,000	54,861,000	99,821,000
July	82,492,000	5,041,000	87,533,000
August	102,789,000	0	102,789,000
September	95,680,000	0	95,680,000
October	76,332,000	0	76,332,000
November	93,930,000	0	93,930,000
December	76,833,000	0	76,833,000
Total	756,913,000	292,644,000	1,049,557,000

2010 Pumpage

<u>Milw. Water</u>

January	<u>77,518,000</u>
February	<u>59,810,000</u> till 2- 24
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	
Total	

2009 Sewer Flows

January	12,451,281
February	14,084,000
March	19,928,016
April	20,767,811
May	17,895,967
June	24,952,056
July	13,914,434
August	13,898,773
September	12,660,115
October	14,315,313
November	15,840,319
December	19,612,228
Total	193,947,904

2010 Sewer Flows

Month	Flow
January	18,093,484
February	14,084,000
March	0
April	0
May	0
June	0
July	0
August	0
September	0
October	0
November	0
December	0
Total	0

2009 - Condo/Apartment population Calcuation

Basin		Bedroom	Units	Factor	Population	
MILW	Apartment	1	452	1.50	678	
MILW	Apartment	2	901	2.50	2,253	
MILW	Apartment	3	79	2.66	210	
MILW	CONDO		109	1.50	164	
					3,304	Total
MISB	Apartment	1	354	1.50	531	
MISB	Apartment	2	817	2.50	2,043	
MISB	Apartment	3	2	2.66	5	
MISB	CONDO		586	1.50	879	
					3,458	Total

2007

Connections

Basin	Cust Class	Q1 Count	Q2 Count	Q3 Count	Q4 Count	Average	occupancy factor	population
MILW	C-CONDO/APT	264	264	265	265			
MILW	R Residential	5,024	5,034	5,042	5,046	5,037	2.69	13,548
MISB	C-CONDO/APT	598	611	619	644			
MISB	R Residential	2,733	2,737	2,737	2,738	2,736	2.69	7,361

2008

Connections

Basin	Cust Class	Q1 Count	Q2 Count	Q3 Count	Q4 Count	Average	occupancy factor	population
MILW	C-CONDO/APT	265	268	270	270			
MILW	R Residential	5,056	5,060	5,069	5,074	5,065	2.69	13,624
MISB	C-CONDO/APT	654	661	668	672	664		-
MISB	R Residential	2,745	2,748	2,753	2,755	2,750	2.69	7,398

2009

Connections

Basin	Cust Class	Q1 Count	Q2 Count	Q3 Count	Q4 Count	Average	occupancy factor	population
MILW	C-CONDO/APT	271	272	276	277			
MILW	R Residential	5,080	5,083	5,087	5,092	5,086	2.66	13,527
MISB	C-CONDO/APT	679	681	685	685			
MISB	R Residential	2,756	2,755	2,760	2,762	2,758	2.66	7,337

City of New Berlin Water Utility

2007

Consumption (thousand gallons)

Basin	Cust Class	Q1 Cons	Q2 Cons	Q3 Cons	Q4 Cons	Total	population	Per capita gals/day
MILW	C-CONDO/APT	12,803	13,873	14,777	13,914	55,367	3,189	
MILW	R Residential	72,390	79,898	123,742	84,953	360,983	13,548	
	TOTALS					416,350	16,737	68.15
MISB	C-CONDO/APT	20,381	21,676	23,832	21,572	87,461	3,131	
MISB	R Residential	37,084	40,978	52,849	41,412	172,323	7,361	
	TOTALS					259,784	10,492	67.84

2008

Consumption (thousand gallons)

Basin	Cust Class	Q1 Cons	Q2 Cons	Q3 Cons	Q4 Cons	Total	population	Per capita gals/day
MILW	C-CONDO/APT	13,966	13,066	15,970	12,717	55,719	3,235	
MILW	R Residential	76,124	73,747	122,459	71,330	343,660	13,624	
	TOTALS					399,379	16,859	64.73
MISB	C-CONDO/APT	23,281	19,965	24,947	19,981	88,174	3,363	
MISB	R Residential	40,768	37,165	55,554	34,946	168,433	7,398	
	TOTALS					256,607	10,761	65.15

2009

Consumption (thousand gallons)

Basin	Cust Class	Q1 Cons	Q2 Cons	Q3 Cons	Q4 Cons	Total	population	Per capita gals/day
MILW	C-CONDO/APT	16,122	13,562	15,728	12,695	58,107	3,304	
MILW	R Residential	72,480	76,820	117,639	70,046	336,985	13,527	
	TOTALS					395,092	16,831	64.31
MISB	C-CONDO/APT	24,115	21,070	24,476	19,038	88,699	3,458	
MISB	R Residential	40,078	40,272	51,056	34,044	165,450	7,337	
	TOTALS					254,149	10,795	64.50

Section: 2
Title: Residential Occupancy Factors
Reference: Secs. 17.103(18), 17.208, MMSD Rules, and Appendix A(1.0)(A)

The residential occupancy factor means the average number of people residing in each residential housing unit. The 2009 residential occupancy factor assigned to each municipality is based on housing and population data as of January 1, 2008, and further explained in Section 5 of this manual.

MMSD relies on municipal user data transmissions and an annual housing unit survey to update the housing unit count reported in the 2000 census. Municipal reports are subject to verification by MMSD as explained in Section 8 of this manual.

Total municipal population as of January 1 is reported in October by the Wisconsin Department of Administration. To determine a residential occupancy factor, total population must be allocated between the residential and commercial sewer user classes. The residential allocation is derived by subtracting commercial population from total population. Commercial population is classified as follows:

- Apartments - Occupancy factors and vacancy rates for metered apartments are from the census. Occupancy factors for unmetered apartments served by MMSD are assigned as follows:

Bedrooms	People/Unit
1	1.5
2	2.5
3	Residential Occupancy Factor
Unknown	2.5

    In lieu of using the assigned occupancy factor for apartments, a municipality may report the actual occupant count for each unmetered apartment. This occupant count must include all unmetered apartments and be updated at least once each year.

- Mixed Apartment/Business - Includes apartments in mercantile buildings such as stores or taverns. MMSD assigns an occupancy factor of 1.25 to these apartments. The rental vacancy rate from the census is used to estimate the number of vacant units.

RESIDENTIAL

Goal: To reduce per capita residential use of water by 20% by 2020.

The 55,000 residential accounts in the City of Madison far exceed the number of commercial, industrial and municipal accounts, though representing only 41% of metered sales.

Water Use Statistics

Nationwide, daily indoor water use per capita is 69.3 gallons. By installing all high-efficiency fixtures, this daily use drops by about 35% to 45.3 gallons. The breakdown by activity follows:

Table 1: Indoor Water Use (Vickers, 2002)

Use	Gallons Per Capita Per Day– Typical	Gallons Per Capita Per Day-Conservation
Showers	11.6	8.8
Clothes Washers	15.0	10.0
Dishwashers	1.0	0.7
Toilets	18.5	8.2
Baths	1.2	1.2
Leaks	9.5	4.0
Faucets	10.9	10.8
Other Domestic Uses	1.6	1.6
TOTAL	69.3	45.3

In the City of Madison, the residential average daily use per capita (indoor and outdoor) is about 73 gallons per day. By 2020, the City of Madison is expected to have over 245,000 residents, assuming a growth rate of 1.1%. Reducing per capita residential water use by 20% by 2020 would keep total residential water usage approximately equal to, or perhaps slightly less than current rates. The daily average use would need to be about 58 gallons per person. This is the foundation for being able to maintain the current annual pumping rates, which is the overall goal. Progress toward this goal shall be measured using a rolling 5-year average in order to minimize fluctuations due to weather variations.

Water Utility staff recently compared average water use of an established, older neighborhood and a new neighborhood to see if higher-efficient appliances/fixtures in the newer homes have an impact on average water use. Data was derived from a cross-section of 1,029 customers in seven different billing routes, some of which were in the older neighborhoods and some in newer. The results, surprisingly, indicated a near-identical water use between the two neighborhoods. It does not appear that the newer homes exhibit any greater water efficiency than the older homes. It is difficult to determine how much water use can be attributed to irrigation in the larger lot sizes (pervious area) because there seems to be a greater correlation with home size

Table 2-1 -- RESIDENTIAL OCCUPANCY FACTORS

Residential Billing Alternative	Municipality	People per Unit for UC Billings In:	
		2008	2009
1 - 2 Family	Bayside	2.54	2.53
	Brookfield	2.80	2.79
	Brown Deer	2.59	2.58
	Caledonia	2.13	2.13
	Fox Point	2.51	2.51
	Franklin	2.86	2.83
	Glendale	2.33	2.33
	Muskego	2.62	2.61
	New Berlin	2.69	2.66
	Oak Creek	2.83	2.80
	Thiensville	2.33	2.33
	Wauwatosa	2.31	2.32
	West Allis	2.39	2.39
	West Milwaukee	2.16	2.17
1 - 4 Family	Butler	2.19	2.16
	Cudahy	2.34	2.31
	Elm Grove	2.53	2.52
	Germantown	2.56	2.54
	Greendale	2.59	2.58
	Greenfield	2.47	2.47
	Hales Corners	2.59	2.60
	Menomonee Falls	2.50	2.51
	Mequon	2.68	2.68
	Milwaukee	2.77	2.79
	River Hills	2.40	2.43
	St. Francis	2.47	2.47
	Shorewood	2.31	2.31
	Whitefish Bay	2.63	2.64