



MEMO

PROFESSIONAL SERVICES

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To: Water Resources Management Commission
From: Ann Dansart
Subject: 'Mini' Stormwater Utility Feasibility Study
Date: October 19, 2006

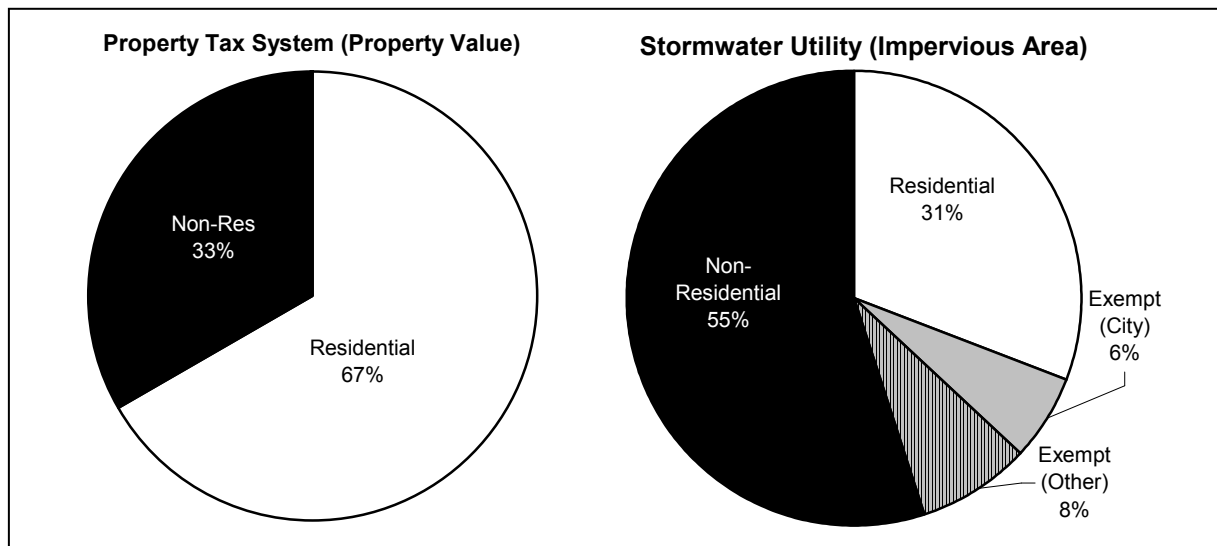
Introduction

As part of the City of Middleton stormwater master planning project, MSA's scope of work includes a work task to conduct a small investigation into the feasibility of creating a stormwater utility for the City. This investigation is summarized in this memo.

Stormwater Program Funding

Under the current system of funding the City's stormwater program through property taxes, residential homeowners pay for approximately 67 percent of the stormwater management costs while owners of nonresidential property pay for 33 percent of the program. Under a stormwater utility, charges would shift to property owners that generate more stormwater runoff. Specifically, residential property owners would pay for only 31 percent of the stormwater management program, while non-residential and tax-exempt users will fund 55 and 14 percent, respectively, as illustrated in figure 1.

FIGURE 1: CITY OF MIDDLETON STORMWATER PROGRAM FUNDING



Offices in Illinois, Iowa, Minnesota, and Wisconsin

2901 International Lane, Suite 300, Madison, WI 53704-3133

(608) 242-7779 (800) 446-0679

FAX: (608) 242-5664 WEB ADDRESS: www.msa-ps.com

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The shift in the burden of cost under a stormwater utility versus a stormwater program funded by property tax occurs because a stormwater utility, like a water utility, generates revenue through user fees based on the level of service each customer receives rather than on property value. In a stormwater utility, the “meter” for measuring “use” is impervious area.

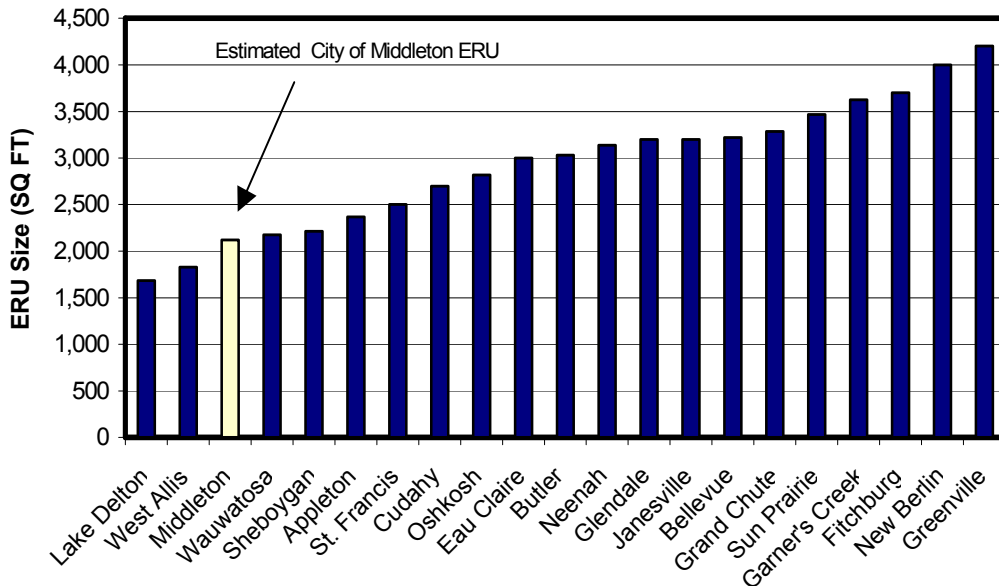
ERU Determination

In Wisconsin, the most commonly used approach for determining stormwater utility charges is the equivalent residential unit (ERU) method. An ERU is the average amount of impervious area associated with single-family homes, duplexes, and multifamily units. The data used to determine the Middleton ERU size is summarized in Table 1. The estimated Middleton ERU size under a stormwater utility is 2,121 square feet. This is below the average ERU size for Wisconsin municipalities, roughly 3,000 square feet, as illustrated in Figure 2.

TABLE 1. RESIDENTIAL UNIT IMPERVIOUS AREA SUMMARY

Type of Residential Unit	Average Impervious Area Per Unit (sq. ft.)	Approximate Number of Units Citywide
Single-Family	3,144	3,369
Duplexes	1,980	490
Multi-Family	1,072	3,222
	Weighted Average = 2,121	Total Living Units = 7,081

FIGURE 2. WISCONSIN STORMWATER UTILITY ERU SIZE COMPARISON



Of the over 3,300 single-family residential parcels in the City, a sample of 157 parcels was randomly selected to determine that the average area of impervious surface on single-family parcels is 3,144 square feet (see Figure 3 for the sample distribution). All 245 parcels with duplexes and flats were digitized to determine the average area of impervious surface per residential unit to be 1,980 (see Figure 4). Finally, the 113 multifamily parcels across the City (number of dwelling units ranged widely from 3 to 192 units per parcel) were digitized and measured to obtain an average of 1,304 square feet of impervious surface per multifamily unit.

FIGURE 3. SINGLE FAMILY RESIDENTIAL PARCEL IMPERVIOUS AREA DISTRIBUTION

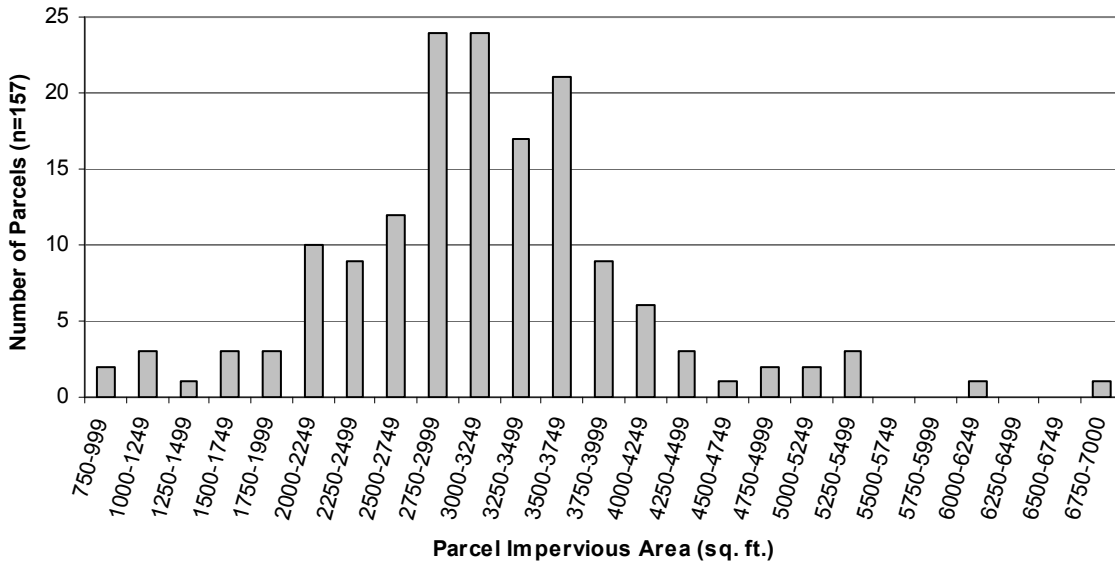
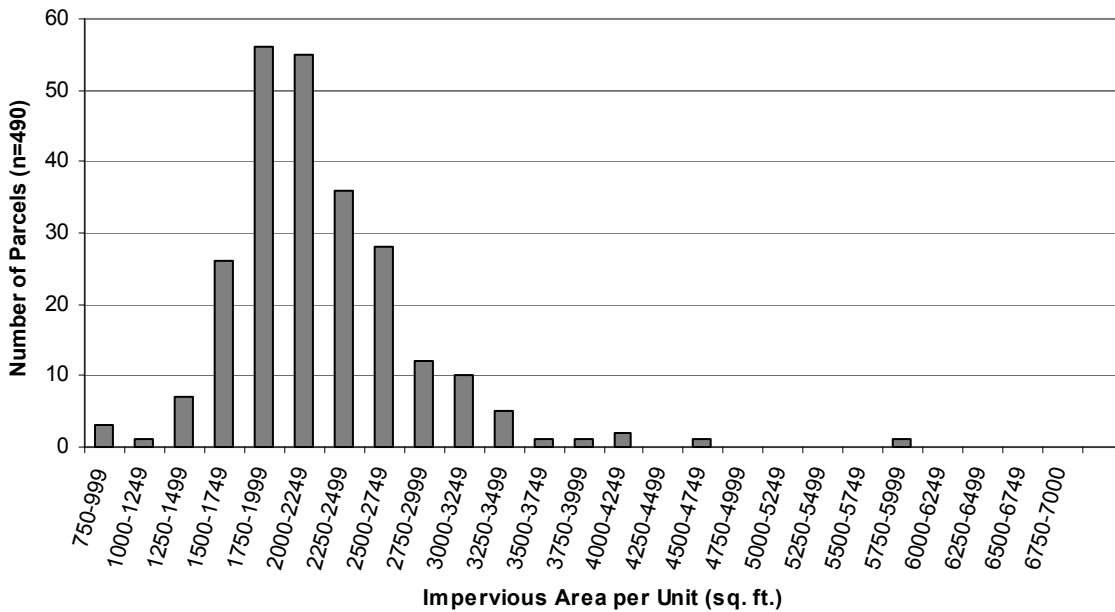


FIGURE 4. TWO-UNIT RESIDENTIAL PARCEL IMPERVIOUS AREA DISTRIBUTION



ERU Count

Based on MSA’s analysis of recent aerial photos, parcel data, and assumed ratios of impervious surface for nonresidential properties, there are a total of 24,420 ERUs in the City, broken down by parcel type as shown in Table 2. For all developed commercial parcels, an assumption of 85% impervious surface was used. For manufacturing parcels, 72% impervious surface was assumed. For most developed tax-exempt parcels, 60% impervious surface was assumed. Exceptions to this include developed parcels at the airport and at Orchid Heights Park, for which 15% impervious surface was assumed. It is important to note that if a stormwater utility is established, detailed measurements of impervious surface on nonresidential parcels will replace these estimates and result in slight changes to the number of ERUs across the City.

TABLE 2: IMPERVIOUS AREA BY PARCEL TYPE SUMMARY

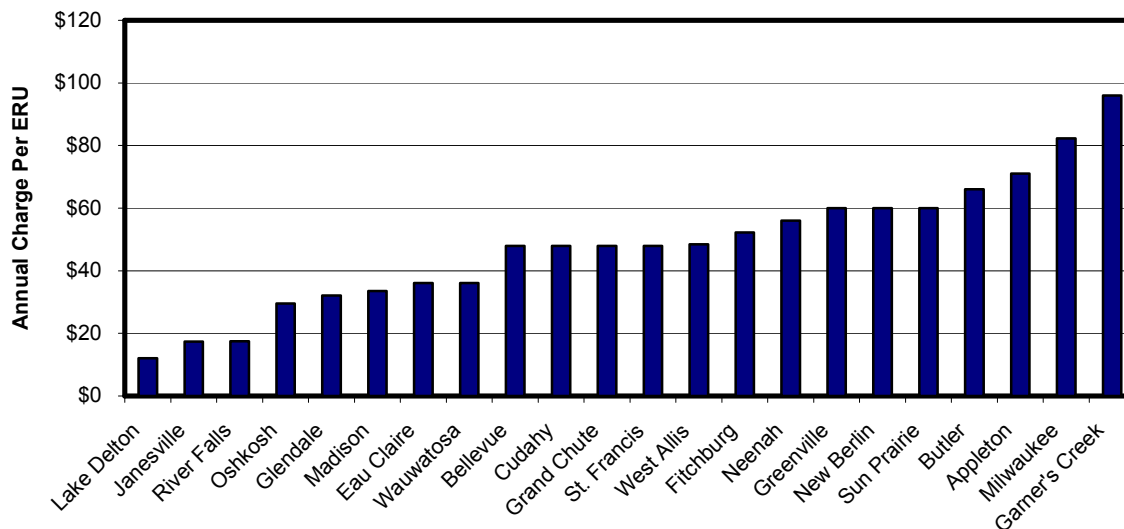
Parcel Type	Impervious Surface (Acres)	# ERUs
Residential	363	7,111
Non-Residential	381	11,701
Tax Exempt (City)	261	3,064
Tax Exempt (Other)	156	1,837
Vacant	831	200
Total	1,991	23,913

Estimation of Charge

The charge per billing unit in a stormwater utility is determined by dividing the total stormwater program budget by the total number of ERUs in the community. Residential units are charged one billing unit each, and non-residential units are assigned a number of ERUs based on their impervious area. For example, if the size of one ERU in Middleton is 2,121 square feet, the owner of a commercial parcel with 8,888 square feet of impervious surface would be charged for four 4 ERUs.

Of Wisconsin municipalities with stormwater utilities, the charge per ERU ranges widely from \$12 to \$96, with the average being approximately \$54 (see Figure 5). In Table 3, a range of charges and their associated annual revenues is provided for consideration.

FIGURE 5: WISCONSIN STORMWATER UTILITY RATES



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TABLE 3: RANGE OF CHARGES FOR CONSIDERATION

Annual Charge per ERU	Total Revenue
\$20	\$ 464,442
\$35	\$ 812,774
\$50	\$ 1,161,106
\$65	\$ 1,509,438
\$80	\$ 1,857,769

11/17/06 Addendum: Budget and Rate Charge

Stormwater management activities are frequently dispersed among different municipal departments, and involve the part-time efforts of staff on many different wage levels. In Middleton, the majority of stormwater management activities fall under the Department of Public Works and the Department of Public Lands. On November 1st, 2006, Ann Dansart of MSA met with Gary Huth and Toby Ginder to discuss the City of Middleton's annual budget for stormwater management.

Based on estimated annual costs of labor, equipment, design, and construction, the annual budget for stormwater management in the City of Middleton is approximately \$977,575 (see attachment for details). This annual budget would require a charge per ERU of \$40.88.