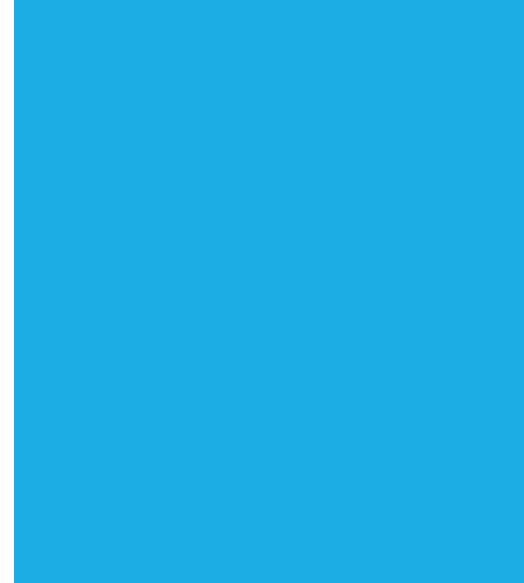
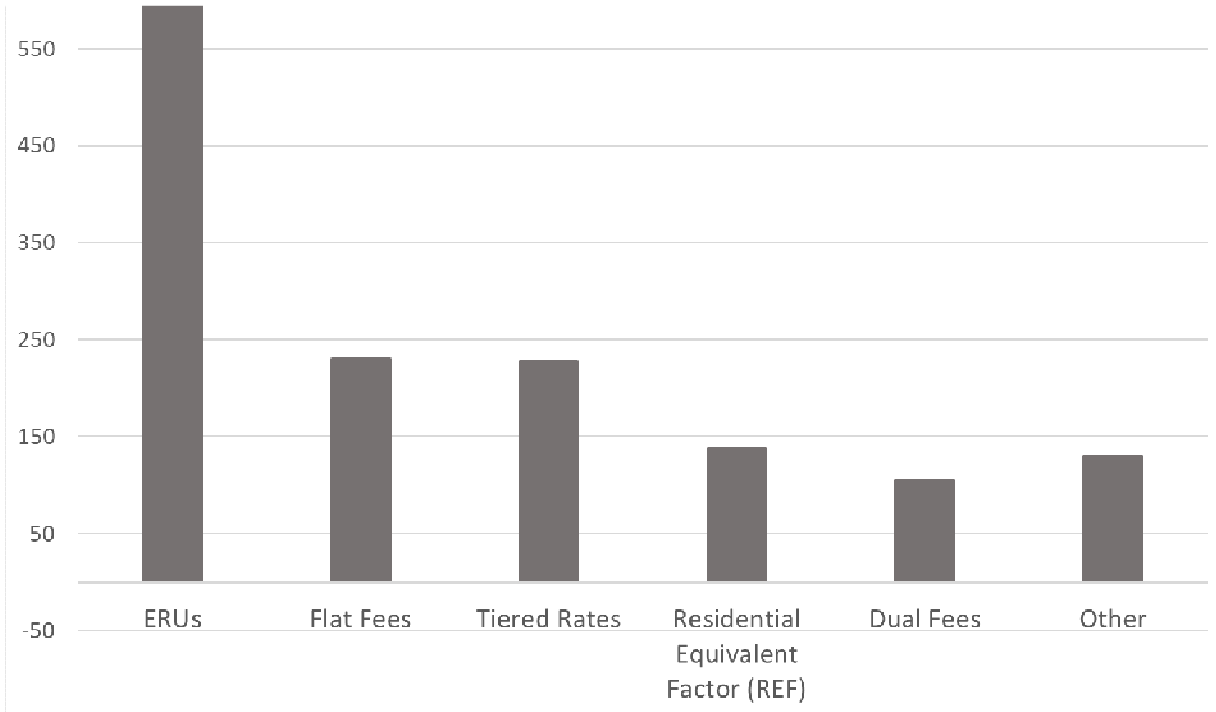


ALTERNATE RATE SCENARIOS

Stormwater Utility Funding





NUMBER OF UTILITIES NATIONWIDE,
BY RATE STRUCTURE

Western Kentucky University
Stormwater Utility Survey
2016

ALTERNATIVE RATE STRUCTURES

Customer service charges

Pervious area

Measured impervious area for every
parcel

Tiered rates

Impervious area units

Rural and urban service areas

Density factors

Pollutant loadings

CUSTOMER SERVICE CHARGES



WHAT ARE CUSTOMER SERVICE / FIXED COSTS?

Billing

Accounting

Legal

Permits

Public Education and Information

Postage/Printing

Software

Office expenses

Street sweeping

Leaf collection

Proportionate share of general and
administrative expenses

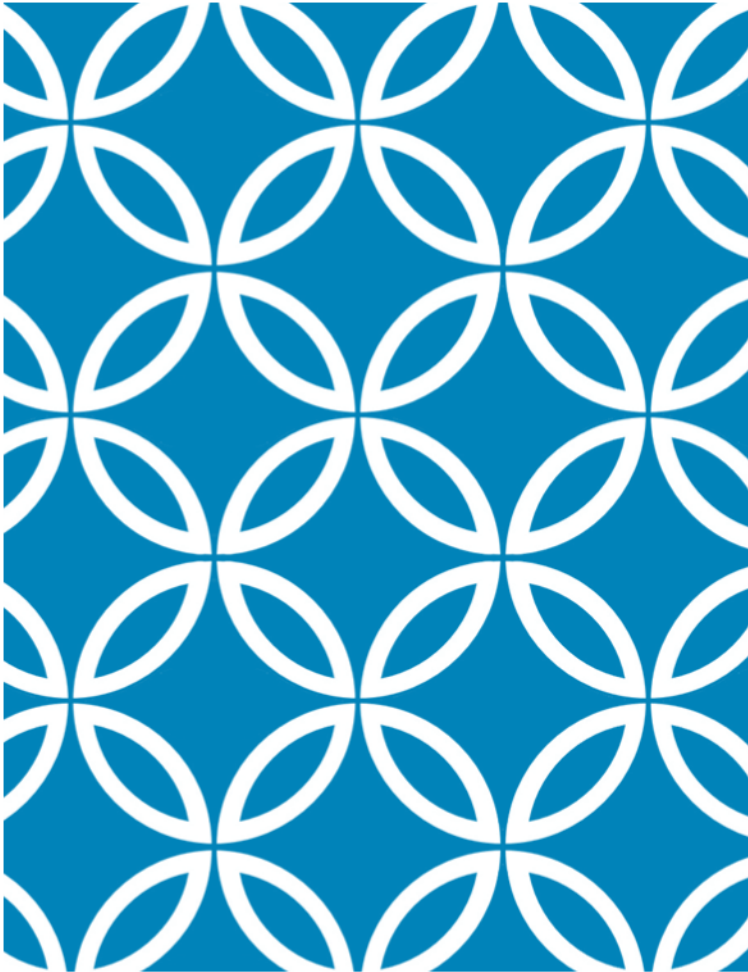
	2017 Projected Revenue Requirements	Customer Costs	Village-Wide O&M	Village-wide Capital	Pond Capital (Current)
Operating Expenses					
<i>Stormwater Management Services</i>					
Wages	\$10,000		\$10,000		
Utilities-Electricity (aerators)	\$12,000		\$12,000		
Maint - Catch Basins	\$9,000		\$9,000		
Maint - Gas & Diesel (mowing)	\$3,000		\$3,000		
Building & Facility Maintenance					
Rain Garden Maintenance	\$1,000		\$1,000		
Butler Wetland Maintenance	\$500		\$500		
Corp Center Pond Maintenance	\$5,000		\$5,000		
Vehicle Maintenance					
Street Sweeper	\$2,000	\$2,000			
Leaf Pickup Equipment	\$500	\$500			
Contractual Fees					
Street Sweeping - Dumpsters	\$4,000	\$4,000			
Stormwater Maintenance	\$20,000		\$20,000		
Leaf Pickup - Dumpsters	\$5,000	\$5,000			
Education Program	\$2,605	\$2,605			
Illicit Discharge Program	\$4,000		\$4,000		
Expenses					
Street Sweeping/Mowing	\$300	\$300			
Leaf Pickup	\$1,000	\$1,000			
Subtotal	\$79,905	\$15,405	\$64,500	\$0	\$0
<i>Administrative & General Expenses</i>					
Salaries & Wages	\$95,000	\$19,582	\$75,418		
Pension	\$12,920	\$2,663	\$10,257		
Employee Insurance	\$22,000	\$4,535	\$17,465		
Payroll Taxes	\$8,000	\$1,649	\$6,351		
Human Resources Expenses	\$500	\$500			
Attorney	\$1,000	\$1,000			
Auditor	\$2,200	\$2,200			
Contracted Engineering/GIS	\$23,000		\$23,000		
Utilities-Telephone	\$400		\$400		
Utilities-Heat	\$700		\$700		
Utilities-Electric	\$1,500		\$1,500		
Equipment Maintenance	\$150	\$150			
Office Supplies	\$2,450	\$2,450			
Schooling & Dues	\$3,000		\$3,000		
Printing & Publishing	\$1,000	\$1,000			
Data Processing					
Internal Support	\$1,800	\$1,800			
Financial Software Mgmt	\$1,200	\$1,200			
Misc. Gen'l Expense	\$500		\$500		
Licensing-Permit & Annual Report	\$1,500		\$1,500		
Insurance	\$3,900		\$3,900		
Office Rent	\$30,000	\$6,184	\$23,816		
Subtotal	\$212,720	\$44,913	\$167,807	\$0	\$0
Total Operating Expenses	\$292,625	\$60,318	\$232,307	\$0	\$0

CUSTOMER CHARGE EXAMPLE — VILLAGE OF SUSSEX, WI

Fixed Costs
No. of Customers
Fixed Charge per Quarter per Customer

\$60,318
3,270
\$4.61

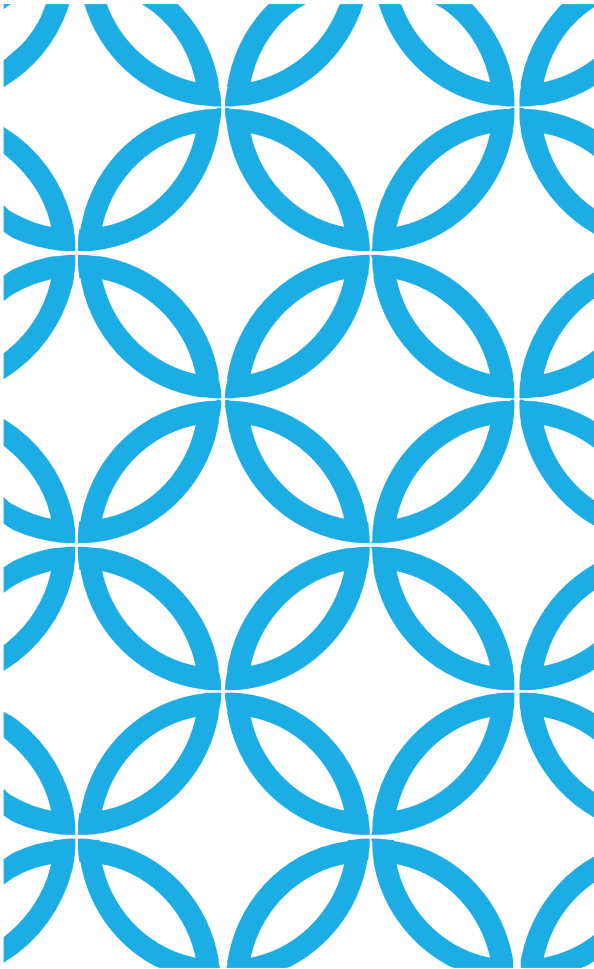
CUSTOMER CHARGE EXAMPLE — VILLAGE OF SUSSEX, WI



CHARGES FOR PERVIOUS AREA

Pervious area also generates some runoff

Fees for pervious area based on runoff rates from pervious area as compared to impervious



MEASURED IMPERVIOUS AREA FOR EVERY PARCEL

Instead of the same charge for all single family residential parcels based on average impervious area, fees can be based on actual impervious area on each parcel

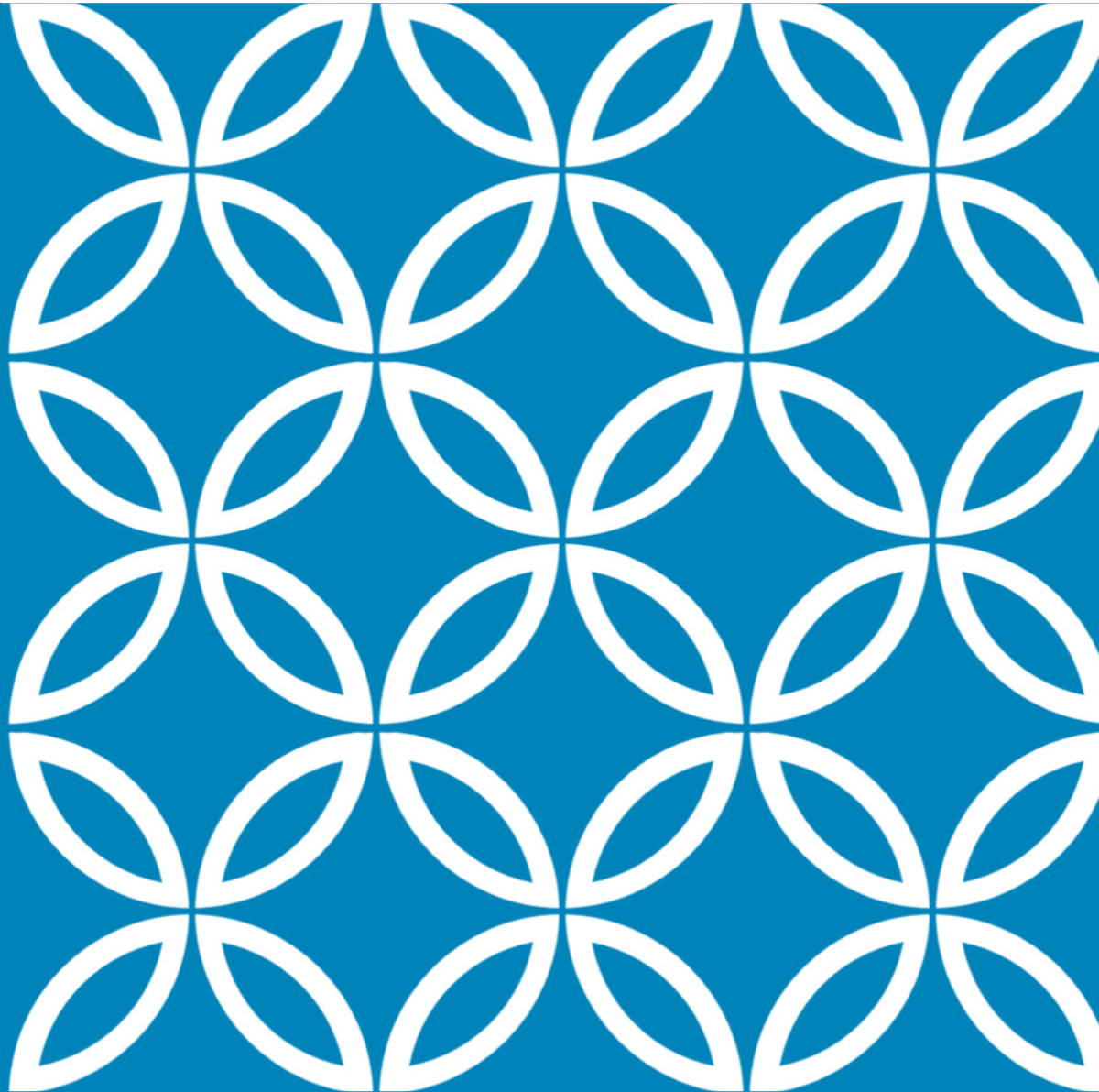
MADISON, WI

Customer charge of \$1.15 per month

\$0.00239 per sf of impervious area per month

\$0.00018 per sf of pervious area per month

Allows for a reduction in the charge for ag parcels
over 5 acres down to the charge for 5 acres
(\$39.20 per year)



TIERED RATES

Properties are grouped by amounts of impervious area, total area, density of development

Charges are established for each category of property

May be used for all properties, or residential properties only

TIERED RATES EXAMPLE

Fox Point, WI

The number of ERUs that will form the basis of the stormwater service charge for each customer classification shall be established in the following manner:

(a) Tier 1 single-family/duplex shall be assigned 1.0 ERU.

(b) Tier 2 single-family/duplex shall be assigned 1.2 ERUs.

(c) Tier 3 single-family/duplex shall be assigned 1.6 ERUs.

(d) Tier 4 single-family/duplex shall be assigned 2.6 ERUs.

(e) Tier 5 single-family/duplex shall be assigned 4.8 ERUs.

(f) Tier 6 non-single-family/duplex: the number of ERUs assigned to the property shall be computed by dividing the total impervious area of the property by the square footage of an ERU.

(a) Undeveloped shall be assigned zero ERUs and will

IMPERVIOUS AREA UNITS

Variation of the ERU concept
Instead of using the amount of impervious area per single
family residence, another increment is selected

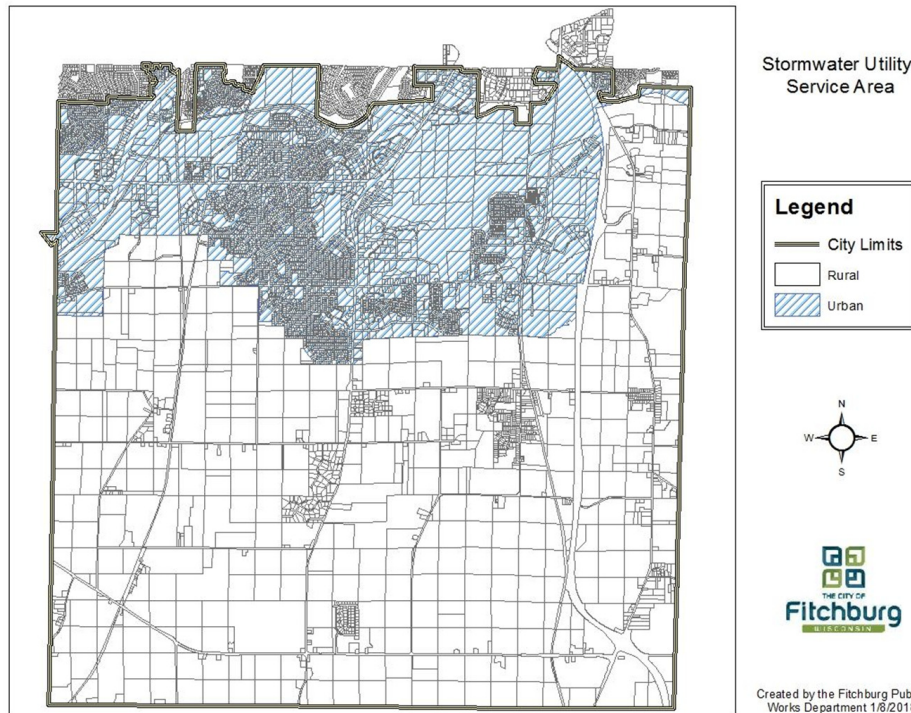
IMPERVIOUS AREA UNITS EXAMPLE

Bloomington, IL

Storm Water Utility Rates for Bloomington IL	
Single-Family, Duplexes	
Small Parcels (gross area less than or equal to 7,000 sq. ft.)	\$2.90/month
Medium Parcels (gross area greater than 7,000 sq. ft. and less than or equal to 12,000 sq. ft.)	\$4.35/month
Large Parcels (gross area over 12,000 sq. ft.)	\$7.25/month
Parcels other than Single-Family, Duplexes	
Base charge per Impervious Area Unit (IAU)	\$1.45/month
Parcels less than or equal to 4,000 sq. ft. shall be charged a flat rate equivalent to 4 IAUs.	\$5.80/month
Parcels greater than 4,000 sq. ft. will be charged for the actual number of IAUs within the parcel, OR 4 IAUs, whichever is greater.	

URBAN AND RURAL SERVICE AREA RATES

Useful for communities with different levels of density and
stormwater service



URBAN AND RURAL SERVICE AREAS EXAMPLE

Fitchburg, WI

City-wide base rate - \$9.71 per ERU / quarter

Urban service area base rate - \$5.56 per ERU /quarter

Urban intensity rate - \$4.23 per ERU / quarter

DENSITY FACTORS

Charges properties with higher percentage of impervious area a higher rate

Urban Service Area Fee = ERUs X [Citywide base fee + Urban area fee] + ERUs X Urban Intensity Factor X Urban Intensity Rate

DENSITY FACTORS EXAMPLE

Fitchburg, WI

Urban Intensity Factors for Urban Service Area:

Multifamily and Nonresidential

Percentage of Impervious Area Intensity of Development Factor

0—9.9%

0.6

10—54.9%

1.0

55—69.9%

1.7

70—89.9%

2.9

>90%

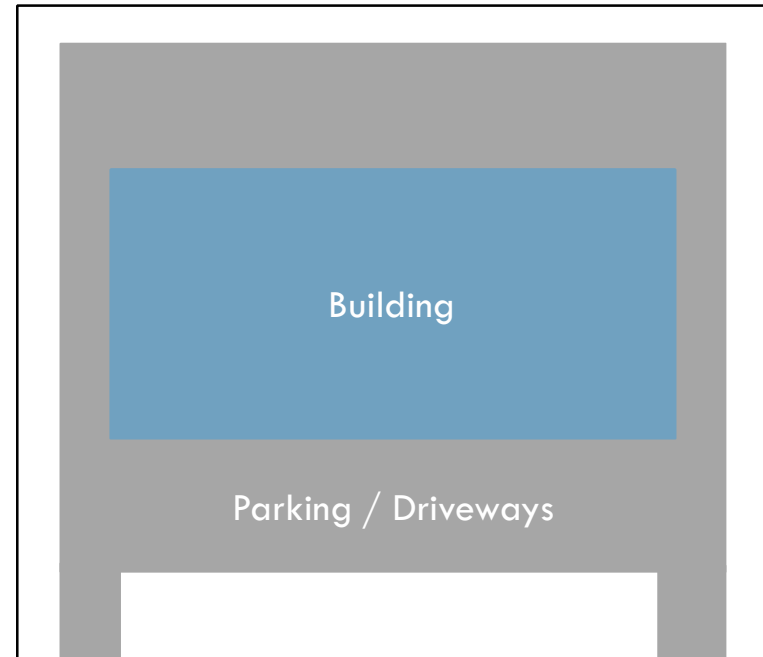
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DENSITY FACTORS EXAMPLE

Fitchburg, WI

DENSITY FACTORS EXAMPLE

Fitchburg, WI



Example Parcel

Total Area – 2 acres

Impervious Area – 69,696 square feet

ERUs – 18.84 (69,696 ÷ 3,700 sf)

Intensity of Development Factor – 2.9

Fee = 18.84 ERUs x [\$9.71 + \$5.56] + 18.84 ERUs x
2.9 x \$4.23 = \$518.80

POLLUTANT LOADING FACTORS

Recognizes that different land uses tend to generate different amounts of pollutants

Can be used in conjunction with credits for BMP's that reduce pollutant loadings

POLLUTANT LOADINGS FACTORS EXAMPLE

Watertown, WI

(3) Pollutant ERUs shall be calculated for each classification as follows:

(a) Single-family and duplex residential: one ERU per dwelling unit.

(b) Condominium residential. The number of volume ERUs shall be multiplied by a factor of 1.0 to determine the number of pollutant ERUs.

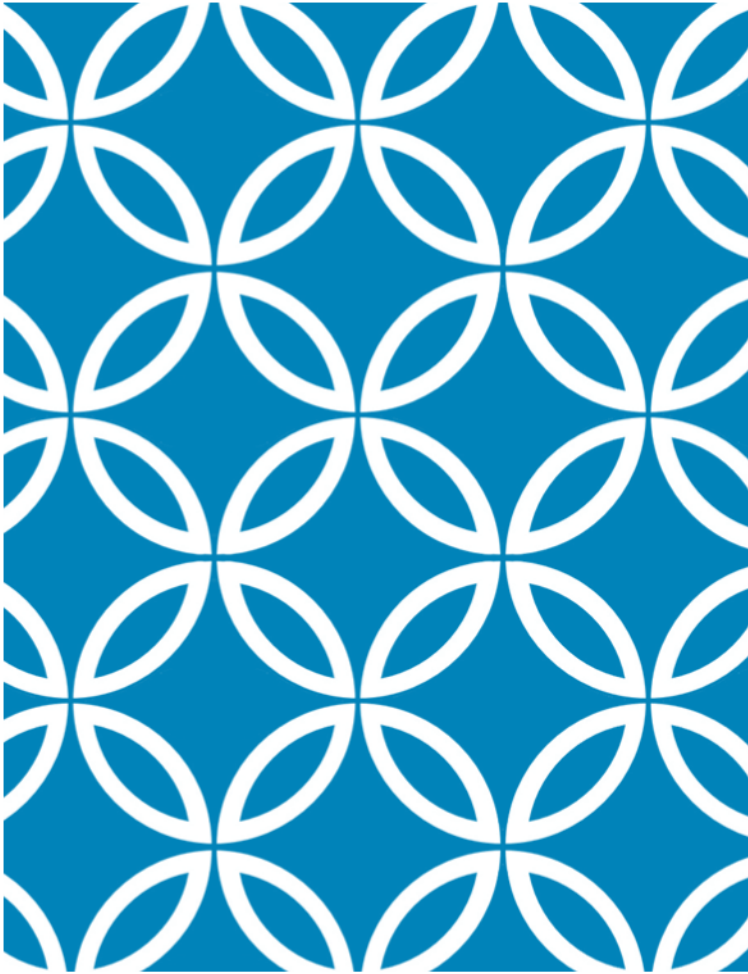
(c) Multifamily residential. The number of volume ERUs shall be multiplied by a factor of 0.80 to determine the number of pollutant ERUs.

(d) Industrial. The number of volume ERUs shall be multiplied by a factor of 0.90 to determine the number of pollutant ERUs.

(e) Commercial. The number of volume ERUs shall be multiplied by a factor of 1.10 to determine the number of pollutant ERUs.

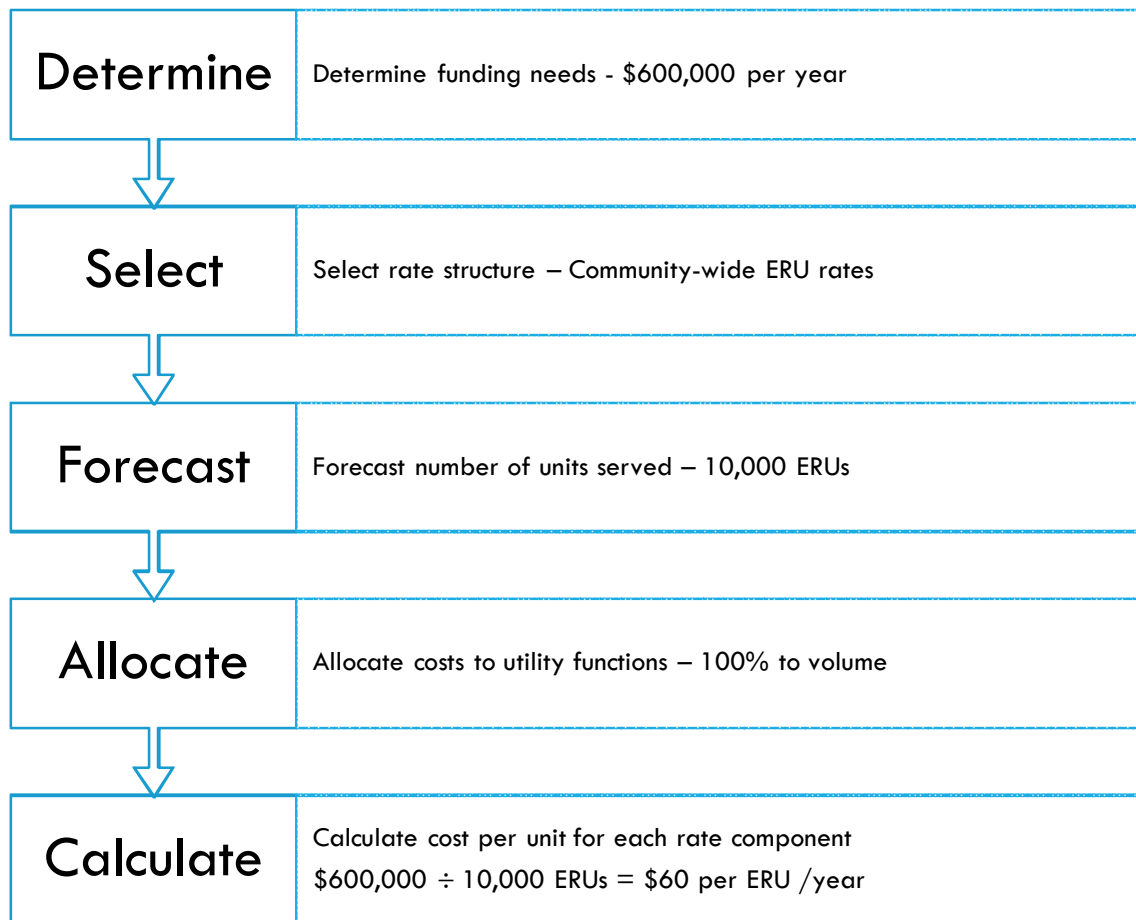
(f) Institutional. The number of volume ERUs shall be multiplied by a factor of 0.50 to determine the number of pollutant ERUs.

(g) Undeveloped property. For any lot or parcel that has no impervious surface area, no pollutant ERUs shall be assigned for purposes of imposing service charges under this article.



PUTTING IT ALL TOGETHER

How do we calculate proposed rates?



RATE SETTING PROCESS – BASIC ERU RATES

FUNDING NEEDS — FITCHBURG, WI

		Total 2013 Budget ⁽¹⁾
<u>Administrative & General Expenses</u>		
601-5408-300	Social Security Taxes	\$9,500.00
601-5902-300	General Accounting	\$24,000.00
601-5903-300	Customer Supplies & Expenses	\$4,000.00
601-5920-300	Administrative & General Salaries	\$115,000.00
601-5921-300	Office Supplies & Expenses	\$3,000.00
601-5923-300	Outside Services Employed	\$12,000.00
601-5924-300	Insurance Expenses	\$13,000.00
601-5926-300	Employees Pensions & Benefits	\$39,000.00
601-5930-300	Miscellaneous General Expenses	\$8,000.00
601-5930-301	Computer Related Expenses	\$3,000.00
601-5930-302	Public Education & Outreach	\$17,000.00
601-5931-300	Rents	\$2,514.00
601-5932-300	Transportation Expense	\$5,000.00
601-5932-301	Sweeper Fuel	\$13,000.00
601-5933-300	Telephone	\$0.00
Total Administrative & General Expenses		\$268,014.00
<u>Operating Expenses</u>		
601-5601-301	Work by Streets Division	\$105,000.00
601-5601-302	Operating Materials & Supplies	\$1,200.00
601-5601-303	General Equipment	\$500.00
601-5601-304	Maintenance - culverts & pipe	\$12,000.00
601-5601-305	Maintenance - Sweeper	\$7,500.00
601-5601-306	Maintenance - Inlet Repair, Castings	\$30,000.00
Nine Springs Creek Stormwater Master Plan ⁽²⁾		\$80,000.00
Total Operating Expenses		\$236,200.00
Total Operating and Maintenance Expenses		\$504,214.00
<u>Capital Related Expenses</u>		
601-22236	Bond Principal Payments	\$50,000.00
601-22230	Payable to Utility District #1 (Advance)	\$59,262.12
601-5403-300	Depreciation	\$420,000.00
601-5430-300	Interest Due on Advancements	\$30,000.00
Total Capital Related Expenses		\$559,262.12
Subtotal Revenue Requirements		\$1,063,476.12
<u>Other Income</u>		
Grant Received for Nine Springs Master Plan		(\$40,000.00)
Total Revenue Requirements		\$1,023,476.12

FORECAST UNITS SERVED — FITCHBURG, WI

Rate Number	Customer Class	Base ERU's ⁽¹⁾	Billing Units with Intensity Factors ^{(1) (2)}
7001	Residential Urban	3,642.60	3,642.60
7002	Duplex Urban	413.00	413.00
7003	Multi-Family Urban	2,247.72	2,744.44
7005	Non-Resident Urban	5,021.43	8,869.92
7011	Residential Rural	159.00	0.00
7013	Multi-Family Rural	79.70	0.00
7014	Residential Rural	669.00	0.00
7015	Non-Residential Rural	810.49	0.00
7016	Duplex Rural	2.00	0.00
Totals		13,044.94	15,669.96

Summary for Rate Calculations	Base ERU's	Billing Units with Intensity Factors
Rural Base	1,720.19	0.00
Urban Base	11,324.75	0.00
Urban Intensity	0.00	15,669.96

ALLOCATION OF COSTS — FITCHBURG, WI

	Total 2012 Budget ¹	Rural Allocation (%)	Rural Cost	Urban Allocation (%)	Urban Base Allocation (%)	Urban Base Cost	Urban Intensity Allocation (%)	Urban Intensity Cost
<u>Administrative & General Expenses</u>								
501-5402-300 Social Security Taxes	\$9,500.00	13%	\$1,252.73	87%	63%	\$5,360.34	24%	\$2,286.93
501-5902-300 General Accounting	\$24,000.00	13%	\$3,164.80	87%	63%	\$15,357.70	24%	\$5,771.51
501-5903-300 Customer Supplies & Expenses	\$4,000.00	13%	\$527.47	87%	63%	\$2,309.62	24%	\$961.92
501-5920-300 Administrative & General Salaries	\$115,000.00	13%	\$15,164.64	87%	63%	\$72,151.46	24%	\$27,681.89
501-5921-300 Office Supplies & Expenses	\$2,000.00	13%	\$266.60	87%	63%	\$1,182.21	24%	\$721.16
501-5923-300 Out-of-State Employee	\$12,000.00	13%	\$1,582.40	87%	63%	\$7,328.85	24%	\$2,881.75
501-5924-300 Insurance Expenses	\$13,000.00	13%	\$1,714.28	87%	63%	\$8,156.25	24%	\$3,129.48
501-5926-300 Employees Pensions & Benefits	\$39,000.00	13%	\$5,142.79	87%	63%	\$24,468.76	24%	\$9,389.45
501-5930-300 Miscellaneous General Expenses	\$8,000.00	13%	\$1,054.53	87%	63%	\$5,316.23	24%	\$1,925.84
501-5930-301 Computer Related Expenses	\$3,000.00	13%	\$395.60	87%	63%	\$1,882.21	24%	\$721.19
501-5930-302 Public Education & Outreach	\$17,000.00	13%	\$2,241.78	87%	63%	\$10,365.87	24%	\$4,091.40
501-5931-300 Rents	\$2,514.00	13%	\$321.51	87%	63%	\$1,377.29	24%	\$501.19
501-5932-300 Transportation Expense	\$5,000.00	30%	\$1,500.00	70%	51%	\$2,328.47	19%	\$979.53
501-5932-301 Sweeper Fuel	\$13,000.00	0%	\$0.00	100%	72%	\$9,395.16	28%	\$3,604.84
501-5933-300 Telephones	\$0.00	13%	\$0.00	87%	63%	\$0.00	24%	\$0.00
Total Administrative & General Expenses	\$288,014.00	13%	\$34,468.46	87%	63%	\$168,784.41	24%	\$64,761.13
<u>Operating Expenses</u>								
501-5601-301 Work by Streets Division	\$105,000.00	22%	\$23,415.00	78%	56%	\$58,361.85	22%	\$22,621.15
501-5601-302 Operating Materials & Supplies	\$1,200.00	30%	\$360.00	70%	51%	\$507.07	19%	\$231.93
501-5601-303 General Equipment	\$500.00	30%	\$150.00	70%	51%	\$152.95	19%	\$91.05
501-5601-304 Maintenance-culverts & pipe	\$12,000.00	70%	\$8,400.00	30%	22%	\$2,501.74	8%	\$998.26
501-5601-305 Maintenance - Sweeper	\$7,500.00	0%	\$0.00	100%	72%	\$5,420.28	28%	\$2,079.72
501-5601-306 Maintenance - Inlet/Repairs, Costings	\$20,000.00	0%	\$0.00	100%	72%	\$21,881.14	28%	\$8,311.86
Nine Springs Creek Stormwater Master Plan ²	\$80,000.00	0%	\$0.00	100%	72%	\$57,116.36	28%	\$22,183.64
Total Operating Expenses	\$236,200.00	14%	\$32,325.00	86%	62%	\$147,341.38	24%	\$56,531.62
Total Operating and Maintenance Expenses	\$504,214.00	13%	\$66,793.46	87%	63%	\$316,126	24%	\$121,295
<u>Capital Related Expenses</u>								
501-22236 Bond Principal Payments	\$50,000.00	0%	\$0.00	100%	72%	\$36,135.23	28%	\$13,864.77
501-22230 Payable to Utility District #1 (Advance)	\$59,262.12	0%	\$0.00	100%	72%	\$42,329.00	28%	\$16,933.12
501-5403-300 Depreciation	\$420,000.00	0%	\$0.00	100%	72%	\$303,385.89	28%	\$116,614.11
501-5430-300 Interest Due on Advancements	\$20,000.00	0%	\$0.00	100%	72%	\$21,581.14	28%	\$8,318.86
Total Capital Related Expenses	\$559,262.12	0%	\$0.00	100%	72%	\$404,181.25	28%	\$155,080.87
Subtotal Revenue Requirements	\$1,063,476.12	6%	\$66,793.46	94%	68%	\$720,307.04	26%	\$276,375.61
<u>Other Income</u>								
Grant Received for Nine Springs Master Plan	(\$40,000.00)	0%	\$0.00	100%	72%	(\$28,308.18)	28%	\$11,691.82
Total Revenue Requirements	\$1,023,476.12	7%	\$66,793.46	93%	68%	\$691,998.86	26%	\$288,014.43

RATE CALCULATIONS — FITCHBURG, WI

Table 5a - Calculation of User Rates by Service Area

Service Area	Costs	Units (ERU's or Billing Units)	Annual Rate per Unit
Rural Base	\$66,793	1,720.19	\$38.83
Urban Base	\$691,399	11,324.75	\$61.05
Urban Intensity	\$265,284	15,669.96	\$16.93

Table 5b - Summary of Proposed Stormwater User Rates

	Billing Frequency	City Wide Rate/ERU	Urban Service Area Base Rate/ERU	Urban Service Area Intensity Rate
Urban - Residential	Quarterly	\$9.71	\$5.56	\$4.23
Urban - Duplex (per unit)	Quarterly	\$9.71	\$5.56	\$4.23
Urban - Multi-Family	Quarterly	\$9.71	\$5.56	\$4.23
Urban - Non-Residential	Quarterly	\$9.71	\$5.56	\$4.23
Rural - Residential	Annually	\$38.83	\$0.00	\$0.00
Rural - Duplex (per unit)	Annually	\$38.83	\$0.00	\$0.00
Rural - Multi-Family	Quarterly	\$9.71	\$0.00	\$0.00
Rural - Non-Residential	Quarterly	\$9.71	\$0.00	\$0.00