

Village of Pinckney
Water & Sewer Rate Review

September 23, 2022

The WoodHill Group



Executive Summary

The Village of Pinckney's water and sewer system has been operating at a deficit for the past three years. Recent major improvements to the village's wastewater treatment plant and sewer system have been financed by debt that is now due. Projected capital improvement plans will require significant investments that cannot be paid for through the current rate structure. The Village will likely not be able to reach full cost recovery all at once as the increase would be dramatic on its customers.

The Village has three distinct cash flow needs:

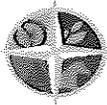
- Annual operational expenses
- Existing debt service
- Creating a recurring source of funding for capital improvement projects

WoodHill recommends prioritizing the rate adjustments, customer billing practices and accounting changes as follows:

1. Calculate the Base/Ready To Serve charges based on a consistent application of a Meter Equivalent Unit (MEU) factor based on equivalent meter size.
2. Eliminate number of bedroom schema for flat rate sewer customers. Apply standard MEU factor of 1 for single family residential home, 2.5 for multi-family (formerly SEWER10). Use this factor as a multiplier for calculating charges.
3. Based on the established MEU factors, add a separate debt service charge equal to the customer's portion of the actual debt service obligations for upgrades to the wastewater treatment plant and other sewer improvements.
4. Each year transfer funds equal to a proportion of the system depreciation expense to the Capital Fund.
5. Based on the established MEU factors, utilize the same rate methodology for both the water and sewer systems which includes a combination of:
 - a. A fixed charge for each customer, based on the determined rate multiplied by their MEU factor, to recover a portion of the operational expenses.
 - b. A commodity charge to recover a portion of the operational expenses.
6. Redesign the billing program setup so the various billing components are tracked separately on the financial statements and billing registers.
7. Identify residential "second meters" as irrigation or sprinkler meters, and track that usage separate from the primary residential water usage for analysis purposes.

The Village is in the planning stages for multiple upcoming capital improvement projects. Current reserves can cover near term improvements, but water and sewer funds are not sufficient to pay for all planned improvements. While reserves will cover some costs, the available funds will be depleted quickly and projects will be delayed, cancelled, or require some other financing method to complete.

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VILLAGE OF
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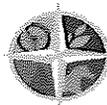
Utility Bill
SMITH, JOHN
12345 MAIN ST
PINCKNEY, MI 48169

Model 030A
MEU 1

EXAMPLE BILL

30% Depreciation Recapture (030A)
Depreciation Recaptured \$135,000
Residential customer 12,500 Gallons

Code Desc	MEU	Usage	Model		Current		Change	
			Rate	Charge	Rates	Charge	Quarterly	Monthly
PB				\$0.00				
WA Wtr Usage		12,500	\$4.24	\$53.00	\$3.70	\$46.25	\$6.75	\$2.25
WB Wtr Base	1		\$31.80	\$31.80	\$25.40	\$25.40	\$6.40	\$2.13
SW Swr Usage		12,500	\$7.14	\$89.25	\$7.48	\$93.50	-\$4.25	-\$1.42
SB Swr Base	1		\$50.43	\$50.43	\$32.75	\$32.75	\$17.68	\$5.89
SD Swr Debt	1		\$38.72	\$38.72	\$0.00	\$0.00	\$38.72	\$12.91
TOTALS				\$263.20		\$197.90	\$65.30	\$21.77



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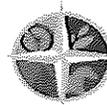
Utility Bill
SMITH, JOHN
12345 MAIN ST
PINCKNEY, MI 48169

Model 050A
MEU 1

EXAMPLE BILL

50% Depreciation Recapture (050A)
Depreciation Recaptured \$225,000
Residential customer 12,500 Gallons

Code Desc	MEU	Usage	Model		Current		Change	
			Rate	Charge	Rates	Charge	Quarterly	Monthly
PB				\$0.00				
WA Wtr Usage		12,500	\$4.69	\$58.63	\$3.70	\$46.25	\$12.38	\$4.13
WB Wtr Base	1		\$35.14	\$35.14	\$25.40	\$25.40	\$9.74	\$3.25
SW Swr Usage		12,500	\$7.88	\$90.50	\$7.48	\$93.50	\$5.00	\$1.67
SB Swr Base	1		\$55.67	\$55.67	\$32.75	\$32.75	\$22.92	\$7.64
SD Swr Debt	1		\$38.72	\$38.72	\$0.00	\$0.00	\$38.72	\$12.91
TOTALS				\$286.66		\$197.90	\$88.76	\$29.59



VILLAGE OF
PINCKNEY

Utility Bill
SMITH, JOHN
12345 MAIN ST
PINCKNEY, MI 48169

Model 100A
MEU 1

EXAMPLE BILL

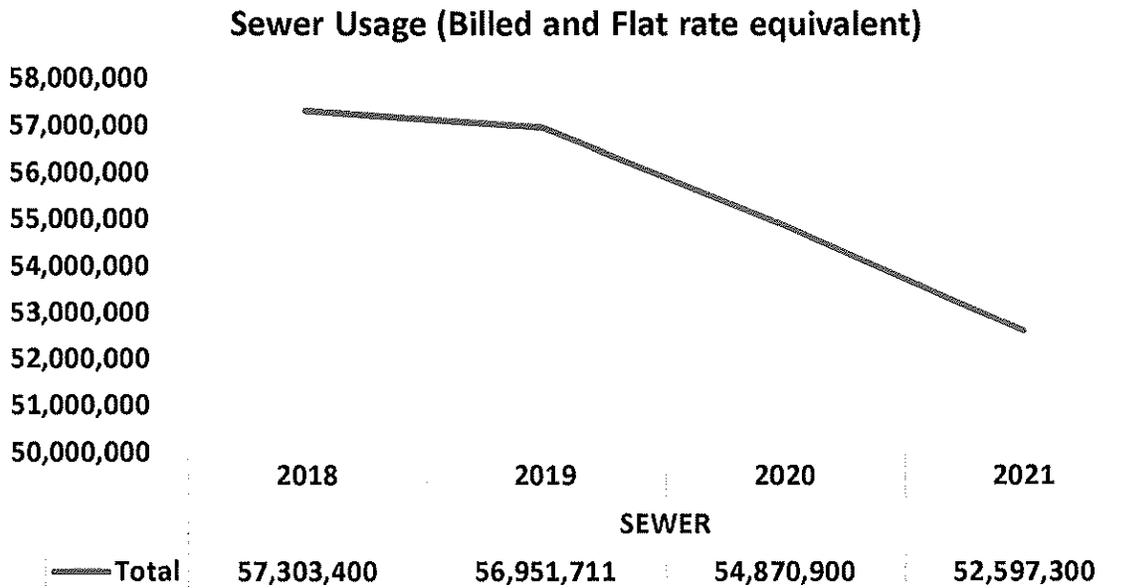
100% Depreciation Recapture (100A)
Depreciation Recaptured \$450,000
Residential customer 12,500 Gallons

Code Desc	MEU	Usage	Model		Current		Change	
			Rate	Charge	Rates	Charge	Quarterly	Monthly
PB				\$0.00				
WA Wtr Usage		12,500	\$5.80	\$72.50	\$3.70	\$46.25	\$26.25	\$8.75
WB Wtr Base	1		\$43.49	\$43.49	\$25.40	\$25.40	\$18.09	\$6.03
SW Swr Usage		12,500	\$9.74	\$121.75	\$7.48	\$93.50	\$28.25	\$9.42
SB Swr Base	1		\$68.76	\$68.76	\$32.75	\$32.75	\$36.01	\$12.00
SD Swr Debt	1		\$38.72	\$38.72	\$0.00	\$0.00	\$38.72	\$12.91
TOTALS				\$345.22		\$197.90	\$147.32	\$49.11

Village of Pinckney
Water & Sewer Rate Review

Sewer Usage

A review of the last four (4) years of sewer usage was also conducted. An equivalent usage amount was derived for the flat rate sewer customers, resulting in a “equivalent gallons” sold metric. The review concluded that the Village has also seen less sewer usage, on average, during that four (4) year period. As the chart shows below, sewer usage/sales are down 8% over the period of 2018 to 2021. We would expect sewer usage to follow a pattern similar to water usage since sewer usage is based on water usage. i.e. water in, generally, equals sewer out.



For rate setting purposes, we would recommend that the Village set its rates on the assumption that 5% less sewer usage will be sold in the coming year. The Village should continue using the 5% less figure until such a time that sewer usage stabilizes and reaches its new normal usage level. This will allow for variability of water usage and

Village of Pinckney
Water & Sewer Rate Review

Sewer Budget Analysis

Budgeted sewer related expenditures for 2022-23 have increased 29.5% over 2021-22 for a total increase of \$219,433, much of it due to additional debt service and depreciation expense. These expenses that will continue into the future and do not reflect one-time projects or capital outlays.

SEWER	Change from 2021	2022-23	2021-22	2020-21
		PRES APPROVED BUDGET	ACTIVITY THRU 06/30/22	ACTIVITY
Revenue				
Rate Revenue	(6,396)	518,277	520,714	524,673
Non Rate Revenue Recurring	8,014	23,000	21,783	14,986
Non Rate Revenue Non Recurring		0	47,373	110,554
	0.2%	1,618	541,277	650,213
Expenditures				
Recurring O&M Expenditures	96,042	466,965	364,341	370,923
Non-Recurring Expenditures		0	66,059	117,339
Depreciation	101,367	295,000	187,387	193,633
Debt Interest	22,024	79,880	73,538	57,856
Capital Outlay		12,501	879	3,123
	29.5%	219,433	854,346	742,874
Net				
Recurring	(94,424)	74,312.00	178,156.00	168,736.00
Non Recurring	-	-	(18,686.00)	(6,785.00)
Depreciation	(101,367)	(295,000.00)	(187,387.00)	(193,633.00)
Debt Interest	(22,024)	(79,880.00)	(73,538.00)	(57,856.00)
Cap Outlay	-	(12,501.00)	(879.00)	(3,123.00)
	-135.1%	(217,815)	(313,069.00)	(92,661.00)

Water and Sewer Debt Service

Recently the village has completed several significant projects that were funded by debt through the USDA. These payments are now due and must be paid for through the rate structure, rather than using reserves and capacity charges to make these payments.

It is not unusual for water and sewer systems to take on debt for improvements to their systems. But what we found that is unusual, is that the full debt service is not reflected in current village sewer rates. Without reflecting the full amount needed to service the debt in the Village's rate structure, at some point the sewer fund will not have enough cash on hand to pay its debt obligations. Continuing the use of use reserves for debt principal payments is unsustainable and will reduce available funds for future capital improvement projects.

Village of Pinckney
Water & Sewer Rate Review

pressure levels. Therefore, factoring is a method that helps identify this Capacity difference and share costs based on draw needs or Capacity requirements.

To address this Capacity issue the American Water Works Association (AWWA) has developed an “**Meter Equivalent Unit**” or “**MEU**” factoring method. This method estimates the Capacity for each different meter size and their related water or sewage draw or usage and compares that draw to that required or generated by a normal single-family residential user. This MEU method is universally accepted and used by many utility systems throughout the country.

AWWA’s Meter Equivalent Unit (MEU) Table

<i>Meter Capacity to MEU Conversion</i>	
<i>Meter Size (Inches)</i>	<i>AWWA</i>
<i>Meter Capacity Ratio</i>	
5/8 and 3/4	1.0
1	2.5
1-1/2	5.0
2	8.0
3	17.5
4	30.0
6	62.5

Village of Pinckney
Water & Sewer Rate Review

2. Usage Based (Commodity) Cost Recovery

As the name suggests, Usage Based or “Commodity” cost recovery is based on actual or usage by a customer, as measured through a metering device. A share of the total operational expenses is divided by the expected volume of water or sewer service to be sold. This calculation ($\% \text{ of total expenses} / \text{expected volume}$) = Commodity Rate per unit that is then applied to the customers actual usage.

3. Customer Based Cost Recovery for Debt Service and other related Fixed Costs

In a customer-based cost recovery scenario for debt service, the total amount of debt service expense is divided by the number of equivalent single-family homes (similar to #1). In the cast of debt service, the actual expected debt service from the debt schedule is used to calculate a rate per “MEU”. Each customer is then charged based on the per MEU rate X the number of MEUs, as defined by the American Water Works standards.

4. Customer Specific service direct cost fees

Customer specific service fees are charges that are specific to a single customer. These fees are include turn on/turn off fees, penalties, interest, connection and other fees that have are limited to a single customer’s service and often a customer’s request. An example of this would be a customer that requests their service be turned off for the winter because they will be wintering in Florida.