



Sewer User Charge Study

City of Madisonville, KY

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Introduction

The objectives of this “Sewer User Charge Study” are as follows:

- Review the existing wastewater conveyance and treatment system facilities.
- Review existing sewer user charge system and surcharges.
- Summarize existing wastewater flow data and water demand by sewer customers.
- Summarize existing operation, maintenance, and replacement (OM&R) costs, and revenues from sewer billings.
- Summarize existing debt service schedules related to the sewer system.
- Present a five-year capital improvements plan for the wastewater conveyance and treatment systems.
- Project required revenue for the next five fiscal years.
- Proposed new sewer user charge system.
- Discuss implementation of the new sewer user charge system.

Madisonville is the county seat of Hopkins County in west-central Kentucky. At the time of the 2010 Census, the City’s population was 19,591 and the population of Hopkins County was 46,920. Population projections for the year 2015, and for future years from 2020 through 2040, were obtained from the Kentucky State Data Center at the University of Louisville. Population projections developed by the University of Louisville Urban Studies Institute (USI), and published in the Projections of Populations and Households (2016). The population projections are presented in Table 1.

Table 1
Population Projections
Madisonville, Kentucky

Year	Population ¹	
	City of Madisonville	Hopkins County
2010	19,591	46,920
2015	19,300	46,222
2020	19,025	45,565
2025	18,648	44,661
2030	18,185	43,549
2035	17,661	42,293
2040	17,075	40,890

Notes: ¹ Census data used for 2010 populations for both City of Madisonville and Hopkins County. Projections for 2015-2040 for both City of Madisonville and Hopkins County from Kentucky State Data Center, University of Louisville.

Existing Facilities

The wastewater collection system for Madisonville includes approximately 844,800 linear feet (LF) of gravity sewer ranging in size from 6-inch to 42-inch. Approximately 95 percent of gravity sewer lines in the City are 8-inch in size. The collection system also includes 50 wastewater pump stations, ranging in capacity from 50 gallons per minute (GPM) to 9.0 million gallons per day (MGD), and approximately 316,800 LF of force mains ranging in size from 2-inch to 18-inch.

The West Side Wastewater Treatment Plant (WWTP) serves the entire City. The WWTP was constructed in 1995 and has a permitted capacity (KPDES Permit No. KY0098043) of 6.0 MGD. The existing WWTP processes include screening, extended aeration with oxidation ditches, clarification, ultraviolet (UV) disinfection, and post aeration. Sludge is thickened and dewatered by belt filter press, and hauled to a landfarm for composting and final disposal.

Existing User Charge System

Madisonville's current user charges have been in effect since July 2008 when the previous user charge study was performed. The rates are based on monthly water consumption, and are summarized in Table 2.

Table 2
Existing Sewer Rates
Madisonville, Kentucky

Customer Classification	Rate
Wholesale Customers ¹ - Earlington - Hanson	\$0.81/1,000 gal \$1.04/1,000 gal
Madisonville Sewer Area (minimum bill based on 2,000 gallons/month)	\$7.75/1,000 gal

Note: ¹ Rates are adjusted annually per agreement between Madisonville, Earlington, and Hanson.

The wholesale sewer rates were established at \$1.95 per thousand gallons in July 1995. By agreement, between the cities of Madisonville, Earlington, and Hanson, the rates have since been adjusted annually based on an allocation of the wastewater treatment and collection system costs. The result is the rates have decreased over the past 23 years to their current levels.

Surcharges have been established for the additional treatment cost associated with concentrations of certain pollutants that exceed the maximum allowable limit. Current surcharges are summarized in Table 3.

Table 3
Existing Sewer Surcharges
Madisonville, Kentucky

Parameter ¹	Maximum Allowable Limit	Current Surcharge (cost/pound)
BOD ₅	250 mg/L	\$0.29
TSS	300 mg/L	\$0.18
NH ₃ -N	25 mg/L	\$0.89

Note: ¹ BOD₅ – Five-day Biochemical Oxygen Demand

TSS – Total Suspended Solids

NH₃-N – Ammonia Nitrogen

Surcharge fees on industrial customers currently amount to approximately \$35,000 annually. Surcharge fees should be evaluated periodically to ensure they are adequate to cover the additional treatment costs associated with pollutant removal. Such an evaluation is beyond the scope of this rate study.

Existing Flow and Water Demand Data

A three-year summary of effluent flow data from the WWTP is presented in Table 4. The average flow increased approximately 12.7% from an average of 4.862 MGD in 2016 to 5.478 MGD in 2018. It is important to note that the average daily flow exceeded plant capacity (6.0 MGD) five out of the twelve months in 2018. The Kentucky Division of Water (KDOW) requires that municipalities begin planning an expansion of their treatment facilities when the average daily flow over a twelve month period reaches 90 percent of the permitted capacity (5.4 MGD). The maximum daily flow measured at the WWTP in 2018 was 18.027 MGD.

Table 4
West Side WWTP Flow Data^{1, 2}
 Madisonville, Kentucky

Month	Wastewater Effluent Flow (MDG) ³					
	2016		2017		2018	
	Avg. Daily	Max. Daily	Avg. Daily	Max. Daily	Avg. Daily	Max. Daily
January	5.305	8.867	7.213	16.363	6.832	16.700
February	7.020	15.896	4.505	11.253	9.702	17.730
March	6.566	15.930	5.540	10.720	7.404	16.460
April	4.456	9.235	6.341	15.360	7.518	16.300
May	5.663	16.500	4.876	10.300	4.623	14.650
June	3.177	4.830	4.907	14.360	4.486	11.690
July	6.341	15.965	3.478	5.890	2.920	3.784
August	4.211	10.581	2.705	3.710	2.931	3.983
September	3.617	9.164	3.558	11.420	3.770	14.481
October	2.899	4.060	5.027	13.510	3.270	7.543
November	3.038	6.255	4.697	13.870	5.639	18.027
December	6.050	15.427	4.428	17.610	6.640	17.980
Average	4.862		4.773		5.478	
Maximum Monthly	7.020		7.213		9.702	
Minimum Monthly	2.899		2.705		2.920	
Maximum Daily		16.500		17.610		18.027

Notes: ¹ Bold numbers for maximum daily flow indicate flows exceeding design peak flow of 15.0 MGD.

² Bold number for average daily flow indicate flows exceeding permitted flow of 6.0 MGD.

³ All data from West Side WWTP Monthly Operating Reports.

Water billed data from fiscal year 2018 is presented in Table 5. The data is taken from Madisonville's billing records. Water billings by sewer customers, including wholesale customers Earlington and Hanson, totaled 1.98 MGD in 2018. This is significantly less than the average flow to the WWTP (5.48 MGD) and the production from the water treatment plant (4.16 MGD) for calendar year 2018. Of the production from the water plant, approximately 0.56 MGD went to customers not on sewer (including wholesale customers Nebo, North Hopkins, and South Hopkins Water Districts). So the water production for sewer customers was approximately 3.60 MGD.

Table 5
Water Billed Summary (Sewer Customers)
Madisonville, Kentucky

Year	Water Billed (MGD) ¹				
	Residential	Commercial	Industrial	Wholesale ²	Total Sales
2018	0.89	0.58	0.22	0.29	1.98

Notes: ¹ All data provided by Madisonville. Billing records were received on May 9, 2019

² Includes Earlington and Hanson. Earlington's billing equals 0.196 MGD; Hanson's billing equals 0.096 MGD.

The water billed to Earlington and Hanson averaged 0.196 MGD, and 0.096 MGD respectively. The water use data indicates a high percentage of unaccounted-for water in the City (approximately 45 percent). A typical unaccounted-for water range for most water utilities is 10 to 20 percent. This means for every 20 gallons of finished water produced at the Water Treatment Plant, only 11 gallons are sold. The unaccounted-for water may be due to leaks in the system, inaccurate meters, unauthorized connections, or other factors. It is recommended that the City investigate the causes of the unaccounted-for water, including reviewing their meter replacement program. A ten-year cycle for replacing all meters is recommended. It is especially important that large meters be tested and replaced on a regular schedule. The City should also consider hiring a consultant to conduct a water loss analysis or audit. Decreasing the unaccounted-for water would improve the utility's financial performance.

Sewer Revenues and Expenses

A summary of sewer system expenses and revenues for fiscal year 2018 presented in Table 6.

Table 6
Summary of Sewer Expenses and Revenues¹
Madisonville, Kentucky

FY 2018	
OM&R ² Expense	
Collection	\$1,970,975
Treatment	\$1,312,098
Depreciation	\$1,451,918
Other ³	\$390,467
Total OM&R Expense	\$5,125,458
Long Term Debt Service	\$509,458
Total Required Revenue	\$5,125,458
Actual Revenue	\$5,144,724
Difference	\$10,734

Notes: ¹All figures were taken from Madisonville's Comprehensive Annual Financial Reports.

² OM&R – Operations, Maintenance, and Replacement

³ Includes other expenses and power purchased. Split equally between the water and sewer funds.

Existing debt service requirements related to the sewer system are summarized in Table 7. This information was taken from the City's Comprehensive Annual Financial reports for FY 2017 and FY 2018.

Table 7
Debt Service Requirements – Sewer System
Madisonville, Kentucky

Total Principal and Interest Requirements ¹			
Fiscal Year	Series 2008	Kentucky Infrastructure Authority	Total Requirement
2018	\$395,850	\$113,608	\$509,458
2019		\$113,440	\$113,400
2020		\$113,268	\$113,268
2021		\$113,094	\$113,094
2022		\$112,916	\$112,916
2023		\$112,735	\$112,735
2024		\$112,549	\$112,549
2025		\$112,360	\$112,360
2026		\$112,167	\$112,167
2027		\$111,971	\$111,971
2028		\$111,770	\$111,770
2029		\$111,565	\$111,565
2030		\$111,356	\$111,356
2031		\$111,143	\$111,143
2032		\$55,490	\$55,490
	\$395,850	\$1,629,432	\$2,025,282

Note: ¹ From Madisonville's Comprehensive Annual Financial Reports, for FY 2017 and FY 2018.

Capital Improvements Plan - WWTP

The City has developed five-year Capital Improvement Plans (CIP) for both the Wastewater Collection Department and the WWTP.

As previously noted, KDOW requires that municipalities begin planning for an expansion of their treatment facilities when the average daily flow over a 12-month period reaches 90 percent of the permitted capacity of the WWTP. For the West Side WWTP, this flow is 5.4 MGD.

To be cost-effective, improvements at the WWTP should optimize use of the existing facilities and increase the permitted capacity beyond 6.0 MGD. Based on the capacity

of the existing process units and piping, the optimum plant expansion would increase the average daily flow capacity to 8.0 MGD and the peak capacity to 24.0 MGD.

The major improvement necessary for this plant expansion is adding a third 110-foot clarifier. This project is anticipated to be 3 – 4 years out and cost approximately \$1,300,000. The cost of the planning and engineering, and construction of the plant expansion is included in the five-year Capital Improvements Plan presented in this report.

From the flow data received, the WWTP is already reaching an average daily flow of over 5.4 MGD. At this point, planning must begin for an expansion of the plant. If the City grows at a faster rate than project, or major new industries locate in Madisonville, the WWTP expansion could be required sooner than expected. Regardless of the level of growth, most equipment is over 20 years old. Major capital expenditures at the WWTP will be needed in the next five to 10-year time frame. These expenditures will necessitate another rate review, and potentially another rate adjustment.

Capital Improvements Plan – Collection System

The five-year CIP for the wastewater collection system includes cured-in-place pipe (CIPP) rehabilitation, pump station upgrades, and the following projects:

- Brown Road Interceptor
- Noel Avenue Interceptor
- Hospital Lift Station Elimination
- Railroad Street Lift Station Elimination
- Bell Drive Interceptor CIPP

A portion of the Brown Road Interceptor project was included in the FY 2019 budget. Due to easement issues, the project has been delayed, but should start summer of 2019. The money from FY 19 budget (\$500,000) is assumed to be carried over to cover the cost. The remaining project cost will be factored as a FY 2020 capital improvement project.

The City is currently developing a 201C facilities plan for the entire collection and conveyance system, including the pump station. Additional capital projects will be reviewed as part of the 201C facilities plan. It is anticipated that these projects will be planned for implementation after 2024.

A summary of a modified five-year CIP is presented in Table 8. The cost estimates for future years include inflation at a rate of five percent annually. A summary of large (total cost exceeding \$500,000) capital projects included in the five-year plan is presented in Table 9. It is assumed that projects with a budget over \$500,000 will require the City to borrow funds.

Table 8
Five-Year Wastewater Capital Improvements Plan¹
Madisonville, Kentucky

Fiscal Year	Department	Project/Item	Budget Cost
2020	Collection	Brown Road Interceptor	\$420,000 ²
2021	Collection	Noel Avenue Interceptor	\$8,268,750
2022	Collection	Hospital Lift Station Elimination	\$289,500
2022	Treatment	Engineering/Planning WWTP Expansion	\$200,000
2023	Collection	Railroad Street Lift Station Elimination	\$243,100
2024	Treatment	WWTP Expansion	\$1,276,300
2024	Collection	Bell Drive Interceptor CIPP	\$382,900

Notes: ¹Budget Costs include inflation rate of five percent annually.

² The total cost of the Brown Road interceptor is approximately \$900,000. \$500,000 was included in FY19 budget and carried over. The amount shown for FY20 is the amount required to complete the project with 5% inflation.

Table 9
Planned Capital Improvements – Large Projects¹
Madisonville, Kentucky

Fiscal Year	Department	Project/Item	Estimated Project Cost ²	Committed Funds
2019/2020	Collection	Brown Road Interceptor	\$920,000	\$500,000
2021	Collection	Noel Avenue Interceptor	\$8,268,750	0
2024	Treatment	WWTP Expansion	\$1,276,300	0

Notes: ¹From Table 8; projects with budget cost exceeding \$500,000

² Budget costs include inflation rate of five percent annually.

Required Revenue

Revenue requirements for future years will include operation, maintenance, and replacement (OM&R) costs, capital improvement costs, existing long-term debt service requirements, and future long-term debt service requirements.

An annual inflation rate of five percent was used for all OM&R and capital costs in future years. As previously stated, it was assumed that capital projects with a budget over \$500,000 will require the City to borrow funds. Annual debt service were based on a 20-year term, an interest rate of six percent, and debt service coverage factor of 25 percent of the required payment. For the Noel Avenue Interceptor project, it was assumed that a KIA low interest loan would be approved. The terms of this loan is 2.75% for 30 years. The estimated required revenue for the next five fiscal years (FY20 through FY24) is summarized in Table 10. The required revenue peaks at over \$7.0 million in FY24.

Table 10
Annual Revenue Required¹
Madisonville, Kentucky

Fiscal Year	Annual OM&R ^{2,3}	Depreciation ⁴	Capital Projects ⁵	Existing Long-Term Debt ⁶	Future Long-Term Debt ⁷	Debt Service Coverage ⁸	Total Required Revenue
2020	\$3,718 ⁹	\$1,371	\$420	\$113	0	0	\$5,622
2021	\$3,904	\$1,371	0	\$113	\$405 ¹⁰	\$101	\$5,894
2022	\$4,099	\$1,371	\$490	\$113	\$405	\$101	\$6,579
2023	\$4,304	\$1,371	\$243	\$113	\$405	\$101	\$6,537
2024	\$4,519	\$1,371	\$383	\$113	\$515 ¹¹	\$129	\$7,030

Notes: ¹ All costs in thousands of dollars.

² OM&R – Operations, Maintenance, and Replacement Costs.

³ Costs assumed to increase 5 percent per year for inflation.

⁴ Depreciation from FY 2019 budget. Assumed constant for future years.

⁵ Includes all projects in 5-year plan with budget of \$500,000 or less.

⁶ From Table 7.

⁷ Based on 6 percent interest over a 20 year term. Capital Recovery Factor (CRF) = 0.0872. Noel Avenue calculated at 2.75% over a 30 year term.

⁸ Amount is 25 percent of future long-term debt.

⁹ From FY 2019 Budget plus 5 percent inflation.

¹⁰ Debt service from \$8,268,750 project (Noel Avenue Interceptor)

¹¹ Includes debt service for \$1,276,300 (WWTP Expansion)

Wholesale Rate Calculations

When the sewer rates were established in 1995, the wholesale rate was determined by dividing the total projected required revenue (allocated to the wholesale customers) by the annual volume of wastewater received at the WTTP. The rate has been adjusted annually based on the actual allocated cost of treatment and collection, and the actual total volume of wastewater treated that year.

The FY 2020 calculated rates for Earlington and Hanson on this basis are presented in Table 11. Components of the allocated required revenue include the debt service on the KIA loan, the OM&R costs of waste water treatment, and a prorated share of the OM&R costs of wastewater collection. The allocated costs are then divided by the total annual wastewater flow to determine the wholesale rate per thousand gallons. See appendix B for detailed calculations.

Table 11
2020 Rate Calculation for Earlington and Hanson¹
 Madisonville, Kentucky

Item	Earlington	Hanson
WWTP O&M Costs		
WWTP Expenses	\$1,312,098	\$1,312,098
Unallocated Expenses (\$69,312 X 0.64)	\$44,360	\$44,360
Total Allocated WWTP Expense	\$1,356,458	\$1,356,458
Collection System (CS) O&M		
CS Expenses	\$1,970,975	\$1,970,975
Unallocated Expenses (69,312 x 0.36)	\$24,952	\$24,952
Total CS Expenses	\$1,995,927	\$1,995,927
Use Factor ²	0.0339	0.0179
Total Allocated CS Expenses	\$67,662	\$35,727
Depreciation Allowance ³	\$147,976	\$147,976
Total Allocated Costs	\$1,572,096	\$1,540,161
Annual WWTP Flow (Thousands of gallons – 07/1/17 – 06/30/18)	1,948,833	1,948,833
Wholesale Rate/1,000 gallons ⁴	\$0.81	\$0.79

Notes: ¹ From Sewer Contract Settlement Agreement rate computation by Berry Kington & Utley, PSC Certified Public Accountants (See appendix B)

² Earlington or Hanson flow divided by total WWTP flow.

³ One percent of WWTP contribution costs.

⁴ Allocated Costs divided by Annual WWTP flow.

This method of wholesale rate calculation relies on accurate metering of the wastewater flows from Earlington and Hanson. Metering of wastewater flows ensure that Earlington and Hanson pay for I/I that is generated in their collection systems.

A problem with this method of wholesale rate calculation is that as Madisonville grows, and the flow to the WWTP increases, rates for Earlington and Hanson will continue to decrease proportionally. This will occur at the same time the overall costs of operating and maintaining the sewer system are increasing. The rate reduction to Earlington and

Hanson, therefore, comes at the expense of the customers within the Madisonville service area.

Historically, the rates for Earlington and Hanson have decreased from \$1.95 per thousand gallons in 1995 to the proposed current levels of \$0.81 and \$0.79 for Earlington and Hanson, respectively.

To remedy this situation, and to provide Madisonville with a more consistent stream of revenue from their wholesale sewer customers, we propose that the wholesale rates be fixed instead of annually adjusted. **The fixed rates should not be less than the \$1.95 per thousand gallons established in 1995.** The annual rate calculation can continue to be made, and rates adjusted upward if necessary, but the rate should not be adjusted downward.

At the request of the City of Madisonville, an attempt to calculate the actual collection costs for Hanson and Earlington was completed. Utilizing actual costs provided by the collection department, such as lift station maintenance, odor control chemicals, and purchased power, the average collection cost per 1000 gallons for Hanson and Earlington was calculated to be \$1.21 and \$1.06 respectively. This in addition to the calculated treatment costs at the WWTP (\$0.67/1000 gallons), highlight the large benefit these communities are receiving with how the current rates are calculated. By utilizing actual collection costs from these two wholesale customers, Hanson's rate would be \$1.89/1000 gallons and Earlington's rate would be \$1.73/1000 gallons for FY 2020. Comparing this to what the projected rates per 1000 gallons, as traditionally calculated, for FY 2020, the City of Madisonville is losing approximately \$99,000 per year in revenue by subsidizing the rates to these two communities.

A spreadsheet showing the costs associated with Hanson and Earlington's collection system and how it was summarized is shown in Appendix B.

We once again reiterate that the rates should not have been adjusted downward less than the \$1.95 per thousand gallons. At a minimum, the rate should be calculated yearly utilizing actual costs as calculated in the spreadsheet shown in Appendix B. This methodology is more accurate by utilizing actual costs and not the current method of using a proportional flow to the WWTP.

Table 12 presents what the projected 2024 rates for each City would be assuming they would be calculated as they have been in the past. Once again, this calculation shows major loss of revenue when compared to a \$1.95/1000 gallons fixed rate.

Table 12
2024 Rate Calculation for Earlington and Hanson¹

Traditionally Calculated
Madisonville, Kentucky

Item	Earlington	Hanson
FY 2024 Debt Service ¹	\$112,549	\$112,549
WWTP O&M Costs ²	\$2,001,693	\$2,001,639
Collection System O&M Costs ³	\$2,517,999	\$2,517,999
Use Factor	0.0339 ⁴	0.0179 ⁵
Collection System Allocated Costs ⁶	\$85,360	\$45,072
Depreciation Allowance ⁷	\$147,976	\$147,976
Total Allocated Costs	\$2,347,578	\$2,159,260
Annual WWTP Flow (thousands of gallons) ⁸	1,948,833	1,948,833
Wholesale Rate/1,000 gallons ⁹	\$1.20	\$1.11

Notes: ¹From Table 7

² WWTP O&M costs assumed to increase at 5 percent per year, starting with FY 2019 budgeted amount of \$1,568,379.

³ Collection system O&M costs assumed to increase 5 percent per year, starting with FY 2019 budgeted amount of \$1,972,918

⁴ Earlington use factor based on 2019 billings 65,980/1,948,833 = 0.0339

⁵ Hanson use factor based on 2019 billings 34,979/1,948,833 = 0.0179

⁶ Collection system allocated cost = O&M Cost x Use Factor

⁷ Depreciation Allowance = one percent of WWTP construction cost

⁸ Annual wastewater flow assumed to stay constant at 5.34 MGD.

⁹ Allocated costs divided by annual WWTP flow.

Madisonville Sewer Area Rate Calculations

Once the wholesale rates are estimated, the required rates for the Madisonville service area can be calculated. For the purpose of this report, we are going to assume that the rates for the wholesale customers will stay fixed at \$1.95/1000 gallon starting sometime in FY 2020. The required revenue in FY 2024 is estimated at \$7.030 million, as presented in Table 10. Based on current water usage, the estimated annual revenue for Earlington and Hanson at the fixed sewer rates would be approximately \$208,000. The remainder of the revenue, \$6.822 million, must be generated by users in the Madisonville service area.

The rate calculations for the Madisonville service area are presented in Table 13. The first column illustrated the rate required for the City Sewer Fund to “break even” in FY 2020, the second column calculates the required rate for FY 2024.

Table 13
Madisonville Service Area Rate Calculation
Madisonville, Kentucky

Item	FY 2020	FY 2024
OM&R	\$3,718,000 ¹	\$4,519,000 ¹
Depreciation	\$1,371,000 ¹	\$1,371,000 ¹
CIP	\$420,000 ¹	\$383,000
Existing Debt Service	\$113,000 ¹	\$113,000 ¹
Future Debt Service	---	\$644,000 ^{2,1}
Earlington/Hanson Adjustment	(\$94,446) ³	(\$208,000) ⁴
Total Required Revenue	\$5,527,554	\$6,822,000
Water Consumption (thousands of gallons)	618,497 ⁵	618,497 ⁵
Required Rate/1,000 gallons ⁶	\$8.94	\$11.03

Notes: ¹From Table 10

²Includes Debt Service Coverage (25 percent)

³Annual average billings for Earlington and Hanson, as provided by the City of Madisonville.

⁴Based on 0.196 MGD for Earlington and 0.096 MGD for Hanson at project rates.

⁵2018 Water Billings less flows for Earlington and Hanson = 1.98 MGD – 0.287 MGD = 1.693 MGD.

⁶Required Revenue divided by water consumption.

Table 14 presents the required rates, total percent increase, and annualized increase for 2008 (existing rate), 2020 (break even rate), and 2024 (projected rate). Please note that these rates make the assumption that a KIA loan will be granted for the Noel Avenue project and Hanson's and Earlington's rates will be fixed at \$1.95/1000 gallons.

Table 14
Proposed Sewer Rates
Madisonville, Kentucky

Year	Required Rate	Total % Increase	Annualized
2008/Existing	\$7.75	--	--
2020/(Break Even)	\$8.94	15%	1.2% / 12 Years
2024 (Projected)	\$11.03	23%	5.4% / 4 years

Implementation

Table 15 outlines a recommended implementation strategy that should, with the 2020 increase, allow the Sewer Fund to break even. The subsequent increases will keep pace with OM&R, capital improvements, and inflation.

Table 15
Proposed Rate Implementation
Madisonville, Kentucky

Year	Recommended Rate ¹
2020	\$9.00
2021	\$9.50
2022	\$10.00
2023	\$10.50
2024	\$11.00

Note: ¹ Per thousand gallons