

Jefferson County Water and Sewer District

Jefferson County, Ohio



2017 ANNUAL REPORT

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Jefferson County Water and Sewer Rates Billing Guide

Basic Water Bill = \$33.79 (3,000 gallons)

Basic Sewer Bill = \$44.75 (3,000 gallons)

Basic Water & Sewer = \$78.54 (3,000 gallons)

* Overage \$7.50 for Water per 1,000 gallons

* Overage \$7.50 for Sewer per 1,000 gallons

| Water Rates | | | |
|-------------|-----------|-------------|---------|
| Meter Size | Min. Bill | Allowance | Overage |
| 3/4" | \$33.79 | 3,000 Gal. | \$7.50 |
| 1" | \$56.77 | 5,000 Gal. | \$7.50 |
| 2" | \$142.59 | 12,000 Gal. | \$7.50 |
| 4" | \$287.22 | 24,000 Gal. | \$7.50 |
| 6" | \$577.13 | 48,000 Gal. | \$7.50 |

| Sewer Rates | | | |
|---------------|-----------|-------------|---------|
| Meter Size | Min. Bill | Allowance | Overage |
| 3/4" | \$44.75 | 3,000 Gal. | \$7.50 |
| 1" | \$59.75 | 4,500 Gal. | \$7.50 |
| 2" | \$110.75 | 9,600 Gal. | \$7.50 |
| 4" | \$476.75 | 46,200 Gal. | \$7.50 |
| 6" | \$707.75 | 69,300 Gal. | \$7.50 |
| Georges Run | \$21.75 | 9,000 Gal. | \$7.50 |
| Century Hills | \$41.75 | 9,000 Gal. | \$7.50 |



Water and Sewer System O&M Highlights For 2017

Water System

- Repaired 74 broken Water Lines
- Installed 32 water taps for new customers
- Installed 3000 feet of 6" waterline and 4 new fire hydrants on Star Hill in Bergholz
- Installed a new Water Booster Station in Mingo Junction and connected the District's waterlines from Sunshine Park to the line County Road 28
- Began purchasing water for customers in Area J from Mingo Junction
- Began a project to GIS Map the entire County Water System
- Changed all interior and exterior lighting at the Service Center to energy efficient LED
- Replaced 6 old Fire Hydrants with new ones in Smithfield and Irondale areas
- Installed 500' of new water line and a fire hydrant for the County Garage in Irondale
- The District's Water Department collected 4390 samples to test the chlorine residual of the water system. None of the tests showed an insufficient chlorine residual
- 50 Lead and Copper analyses were completed. None of the samples produced a non-compliant result with EPA Standards.
- 27 TTHM and HAA5 tests were conducted. TTHM is Trihalomethane and HAA5 is Haloacetic Acid.
- The District has 1 regulatory violation for TTHM in Area J. The District has since changed its source water in this area from Steubenville to Mingo Junction
- 252 Total Coli form tests were done with no positive results
- 20 Boil Order samples were collected with no positive results
- Water revenue was up over \$400,000 in 2017 from 2016. This is due to several factors but mainly due to sale of water to the Oil and Gas Industry
- The District reduced the amount of delinquent water bills owed by customers 9.6 %

Sewer System

- Completed a project to acquire a new Telemetry System for the County water and sewer systems. With a large upfront cost (most of which was paid through a USDA Grant) the District now has a modern state of the art system that the old system sites will be converted over to over the next few years.
- Took over the Operation and Bill collection of the Village of Smithfield Sewer System
- Upgraded all 9 Smithfield Pump Stations to include 1 new pump and new electrical panels
- Signed an agreement with the Village of Mingo Junction. The agreement allows Mingo Water to be shut off to County Sewer customers in the Georges Run area for delinquent sewer bills.
- Made Pump and Site upgrades to the Murphy Lift Station
- Began a project to GIS map the County sewer system
- Treated 213,700,000 gallons of sewage at the 7 District Plants
- Pressed and disposed of 26.4 tons of stabilized sludge
- Purchased 21 acres of land for the new Village of Amsterdam Sewer Plant
- The District now has (7) EPA Licensed Wastewater Operators
- Reduced the amount of delinquent sewer bills owed by customers 15 %



District Fire Hydrant Maintenance Procedures

The Water and Sewer District executes a comprehensive fire hydrant maintenance program to protect these valuable assets of the District and also maximize each hydrant's ability to furnish water during times of need, especially during emergencies. This program will insure that hydrants are inspected (flushed) twice a year, spring and fall. These inspections will involve:

- Check chains – make sure they allow nozzle cap to turn freely
- Check all caps – make sure they all can be removed
- Check paint – remove all loose paint and repaint if necessary
- Lubricate the hydrant
- Test the hydrant and valves



As part of this program, all hydrants will be flushed two times per year, typically in the spring and fall. The District is also proceeding with a program to paint all hydrants to make sure they are visible from the road in times of need. Fully functional fire hydrants are crucial for the safety of our customers and their property. This program is designed to make sure every fire hydrant is functioning to the fullest extent possible and will do so in times of emergency.



Capital Improvement Projects

The Jefferson County Water and Sewer District spent much planning effort in 2016 developing a Capital Improvement Program to assure that the District's water and sewer infrastructure remain in top operational and maintenance status. This effort was described in last year's Annual Report. As the District assessed the condition of its infrastructure and assets in 2016, it placed a priority on beginning two projects in 2017 that will improve its sewer infrastructure and protect valuable sewer assets. These projects were improvements to the Reeds Mills Sewage Pumping Station and construction of a new utility garage at the Barbers Hollow Wastewater Treatment Plant. Engineering design work on both of these projects was initiated in late 2017 and will be completed in the next couple of months.

The improvements to the Reeds Mills Sewage Pumping Station will involve the replacement of older sewage pumps and electric control panels with new state of the art pumps and variable frequency drive control technology. Additionally, stand-by electric power in the form of an emergency generator will be added to the station. This pump station serves the residents of Belevedere, Crestview, and eventually Bloomingdale.



The new garage designed for the Barbers Hollow Wastewater Treatment Plant will be similar to the garage built a few years ago at the District's Service Center for the Water Department. All Sewer Department vehicles, including a new Vac-Truck will be housed in the new three-bay garage where they can be protected from the elements and adequately maintained by the Department's staff.





Smithfield Sewer Project Sewer System Improvements

During 2017 and the first quarter of 2018, the Jefferson County Water and Sewer District (JCWSD) concluded negotiations with the Village of Smithfield, Ohio EPA, and USDA and assumed ownership and official operation of the Village sewer system, including the sewage treatment plant. The District also had the National Pollutant Discharge Elimination System (NPDES) Permit transferred into its name from the Village's name as a last step in this complicated transfer process.

Now, the District will officially begin engineering work on designing improvements to the existing sewage treatment plant and continuing its efforts to improve the sewage pump stations. After this work is underway, a program to pump out septic tanks and evaluate/repair sewer lines will be developed. This work is intended to bring the system into compliance with OEPA regulatory requirements and NPDES effluent limits. It is estimated that the cost for this effort will be approximately \$4.4 million.





Amsterdam Sewer Project Sanitary Sewer System Amsterdam, Springfield Township and Loudon Township (Carroll County)

Design work on the new sewer system for the Village of Amsterdam was completed in January of 2018. An application for a Permit to Install (PTI) from the OEPA was applied for near the end of January. Additionally, design documents were submitted to several funding agencies and the County Soil and Water Conservation District for review and comments.

In summary, the project will include the construction of about 63,000 feet of sanitary sewer lines, three sewage pump stations, and a 50,000 gallon per day sewage treatment plant. The plant will be located on property purchased by the County adjacent to the Village's Rogers Park. The estimated cost of the project is around \$9.7 million dollars, and approximately 70% of this amount will be paid for by grants from various agencies. This project will serve over 400 new customers.

The District will need to obtain approximately 100 private rights of ways for the project. Those property owners from whom a right of way will be needed will be contacted in late spring or early summer by the Water and Sewer District's Solicitor about the purchase of the right of way. Another town-hall type of meeting will be scheduled this summer to go over details of the project and the right of way acquisition process. Due to the timing of project funding and grant allocations, the project will not be advertised for bids until December of 2018 or January of 2019. Construction is expected to commence in the spring of 2019.





Smithfield Water Tank

The Smithfield Water Tank serves the Village of Smithfield, Piney Fork, and Dillonvale Ridge. Engineering design work for the tank was completed in 2017, with OEPA issuing a Permit to Install (PTI) for the new tank.

At present, the project is ready to be advertised for bids pending final completion of the CDBG grant process. The County is applying for CDBG funds to reduce the amount of debt it will incur to build the new water tank. The tank is being located on property procured by the County adjacent to the County's public works storage facility on Route 152. The tank to be constructed is a 200,000 gallon spheroid water storage tank that has been sized to meet the demands of not only current customers but also future service area expansions. The estimated cost of construction is \$1.54 million dollars. It is expected that the tank will be advertised for bids sometime in late spring or early summer of 2018 after the CDBG grant process is finalized.





Jefferson County Water and Sewer Rules and Regulations

The Water and Sewer District began working on the development of a comprehensive set of Rules and Regulations for its water and sewer systems back in 2016. The state of the art regulations include industry standard details for the Water and Sewer divisions. The document includes 807 sections with three Appendices equaling 140 pages. These regulations and standards govern all administrative and construction related activities of the District's water and sewer systems and set forth consistent standards to be followed by any party or parties doing business with the Water and Sewer District.

The standards were adopted by the Board of County Commissioners in 2017 and are available for viewing on the District's web site. This was a major administrative achievement for the District and puts it in the position of being at the forefront of water and sewer utilities in the State of Ohio.





Regulatory Legislation Enforcement

Ohio Senate Bill 2 requires that an Asset Management Plan (AMP) be implemented by all public water systems in Ohio by October 1, 2018. This bill issued general guidance for implementing an asset management plan with more specific rules being developed by the Ohio EPA. The Jefferson County Water and Sewer District is currently working on this comprehensive AMP with its consulting engineer Arcadis. This document will include the following information:

- Asset Inventory and Evaluation
- Operations and Maintenance Program
- Emergency Preparedness and Contingency Planning
- Infrastructure Rehabilitation and Replacement
- Capacity Projections and Capital Improvement Plan
- Long-Term Funding Strategy

Ohio EPA Asset Management Plan Requirements (Senate Bill 2)



This document will incorporate the District's existing methodologies for assessing the condition, criticality, useful life, and asset valuation of the District's assets and also set forth an operating and capital improvement budget to meet the system's needs in the future. You might note that some of the items described above under the section on capital improvement plan fit right into the items required by this Asset Management Plan. The Jefferson County Water and Sewer District was implementing the components of this mandated AMP as Senate Bill 2 was being developed and proposed and voted on in the Senate.

Maintaining a sound and functional water system will result in reliable and safe drinking water for the District's customers that meets or exceeds federal standards. This is the goal of the District as well as the State of Ohio and Ohio EPA.



Did You Know?

The discharge of storm water runoff, including roof drains, foundation drains, stairwell drains, area drains, or groundwater, including french drains, or sump pumps that pump ground water or storm water from a basement or basement foundation to a sewer line owned by the Jefferson County Water and Sewer District is strictly prohibited.

All Persons connected to, or connecting to, the public sanitary sewage system shall provide adequate means for excluding storm water runoff and groundwater from the connection to the sanitary sewer. French drains may not discharge or connect to the trench within which the building or lateral sewer is situated.



The provisions are outlined in the District's Rules and Regulations. Storm water runoff and ground water may be discharged to storm sewers or to natural water courses within JCWSD's service area.

The District reserves the right to enter upon all properties and into all structures receiving sewer service for the purpose of inspecting, observing, measuring, sampling, and testing to ascertain whether or not storm water runoff or groundwater is being discharged to sanitary sewers.

Exclusion of these flows from the sewer system helps keep operating costs down and enables the District to hold rates as low as possible.



And.....

Non-residential customers that connect or are connected to the District's sewer system and whose businesses are comprised of food preparation or operation of eating establishments that generate Fats, Oils, and Greases (FOG) or generate kitchen wastes that must be disposed of, are required to install and maintain grease traps and/or grease interceptors to prevent FOG from entering the sewer system. All existing customers that renovate an existing building or facility to create a nonresidential customer account classification that prepares foods and/or is an eating establishment must install and maintain grease traps and/or interceptors to prevent FOGs from entering the sewer system. To operate correctly, it is essential that the grease trap be regularly maintained to minimize the amount of FOG that goes into the public sewer system. The volume of flow proposed to be discharged will determine whether a grease trap, a grease interceptor, or both

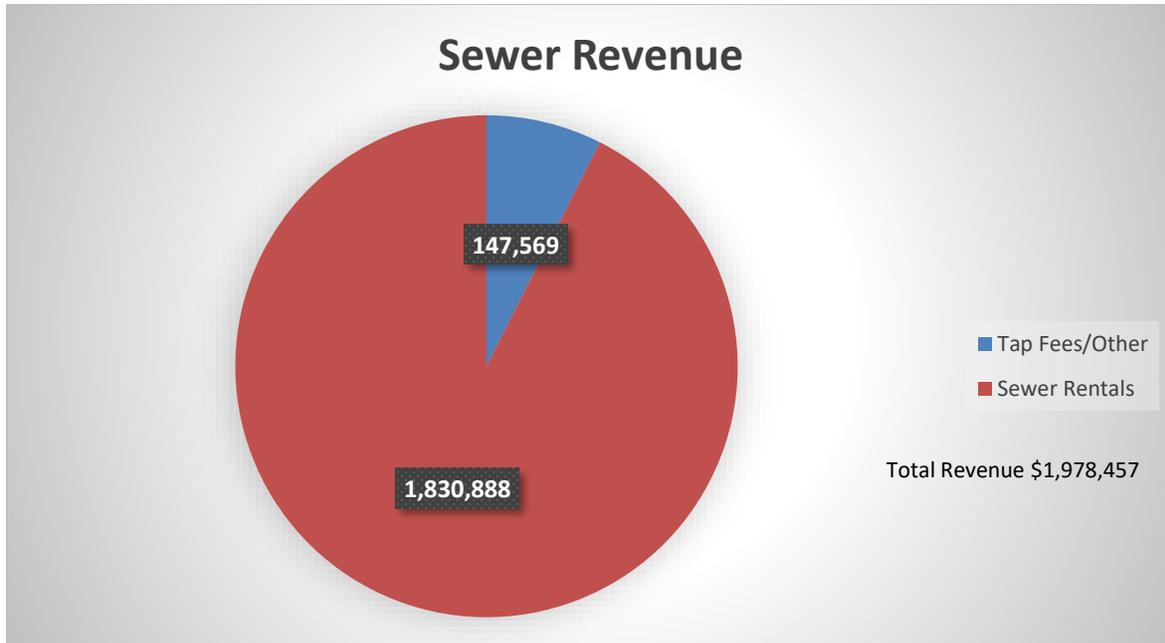


devices are required.

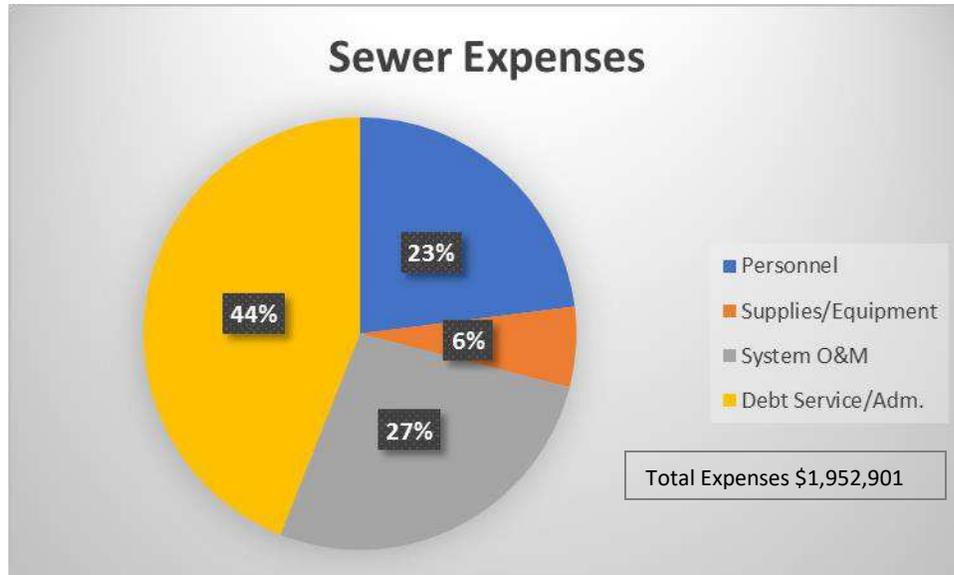
Failure to utilize grease traps adds thousands of dollars in operating costs to the District's sewer budget annually because of the impact FOG has on operations at the treatment plants and extra effort it takes to maintain the sewer lines and clear blockages due to FOG.



Sewer System 2017 Financial Summary



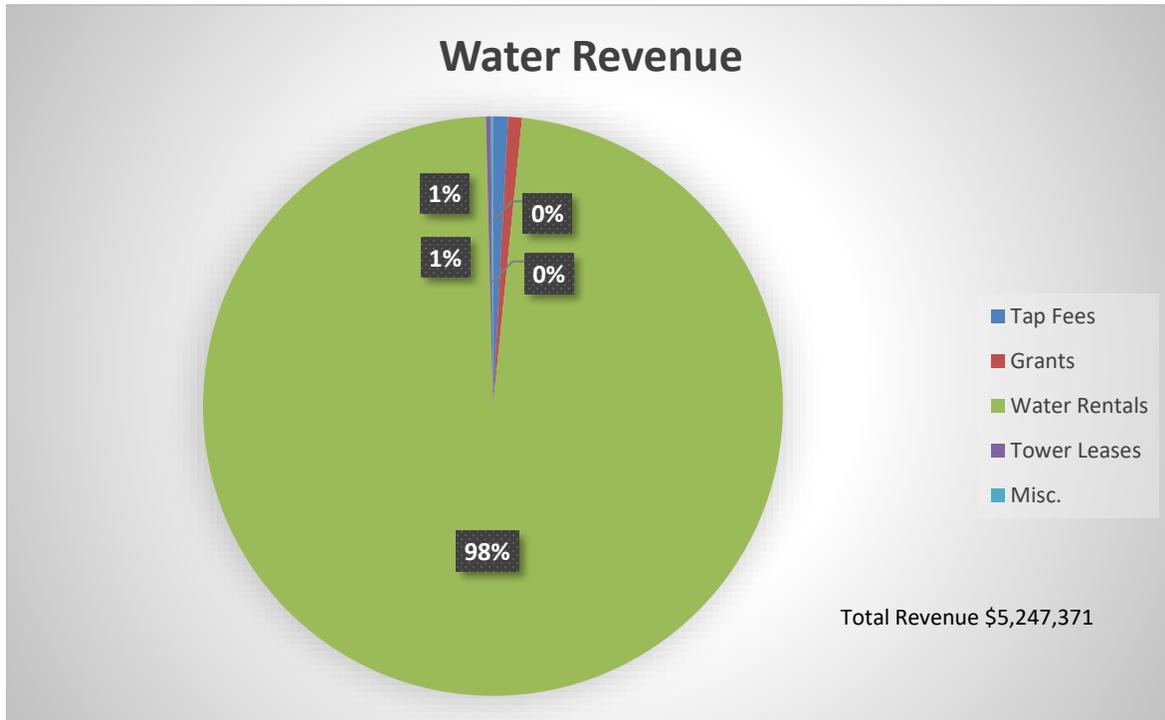
As evident from the chart shown above, virtually all of the District’s sewer system revenue for year 2017 was derived from sewer rentals, or in other words, the monthly sewer bills that customers pay. Why is this the case? This situation exists because of very little growth and development within the areas served by the County’s sewer system. With the Amsterdam project, over 400 new customers will be added to the sewer system. As the District expands its system into areas of the County not currently served by sewers, it is anticipated that growth and development will occur as vacant lots or undeveloped parcels of land in these areas are developed. This will result in more tap fee revenue.



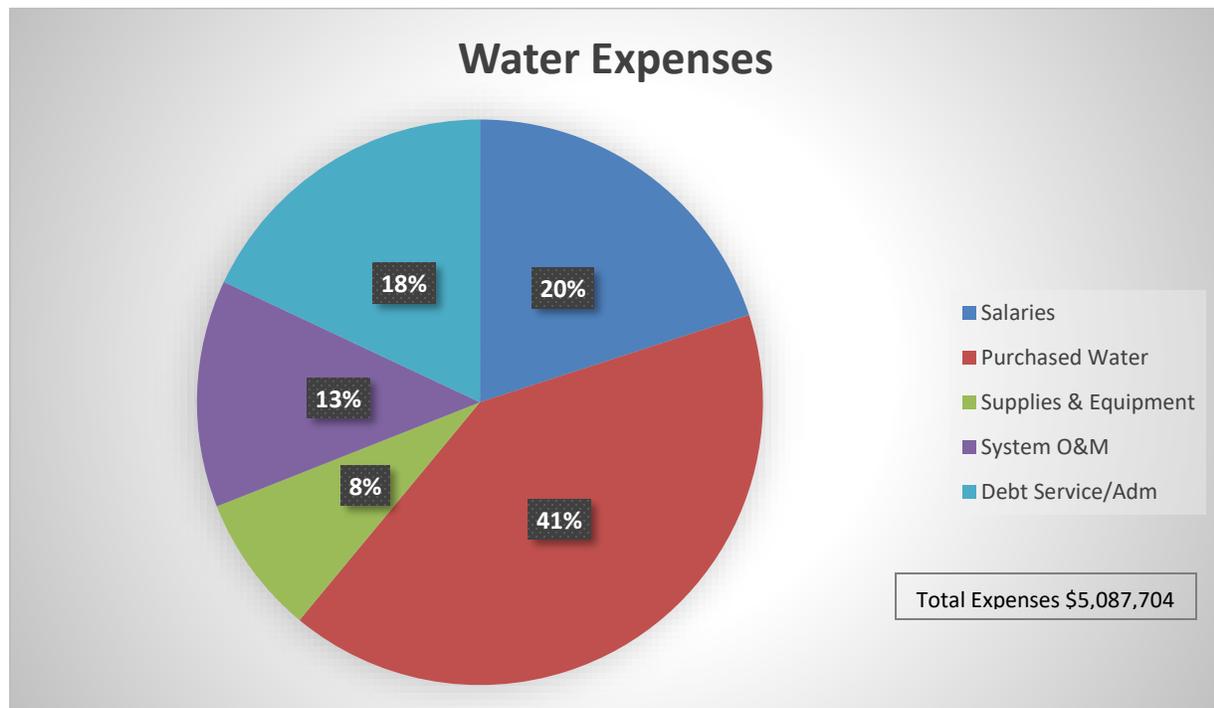
The total sewer system budget from 2017 totaled \$1,735,534 and is broken down in the chart above. As you can see, the majority of District’s budget was spent on debt service obligations incurred from past projects financed and completed. System operating and maintenance costs followed, as the District’s sewer system is spread out across the County and includes multiple treatment plants and pumping stations. It is worthy of note that unlike many sewer utilities, the cost of personnel, including benefits, is not the greatest budgetary expense incurred by the District.



Water System 2017 Financial Summary



In 2017, the vast majority of the District’s water revenue was derived from monthly water bills paid by the customers served. The District also realized water revenue from grants, tap fees, and lease fees by renting space on water tanks to cellular phone providers. As water lines are extended into areas not currently served by public water, tap fee revenues will increase and undeveloped lots and land will be developed, further adding to the customer base.



The majority of the District’s water related expenses in 2017 were in the area of purchased water. The District purchases its water from the City of Toronto, the Village of Mingo Junction, the Village of Brilliant, and the Village of Tiltonsville and distributes that water to the customers within the County. It also has the ability to purchase water from the City of Steubenville.

Personnel wages and benefits and debt service obligations each comprised roughly 20% of the District’s budget. Again, considering the area served by the Water and Sewer District’s water system, personnel costs are modest in comparison to other utilities of equal size.



Waterline Extensions

The Jefferson County Water and Sewer District recognizes the need for the residents of the County to have safe drinking water. The District's water system, while not serving every County resident, does provide safe and reliable drinking water for thousands of County residents. As such, the District is always evaluating the petitions or requests that are filed by residents desiring public water. While it would be ideal if the District could accommodate every request or petition submitted, it is both financially and physically impossible to honor every request that comes in.

The Management team of the Water and Sewer District devoted time and attention to evaluating the many requests and petitions that have been made to the office requesting public water over the past several years. These requests were revisited in 2017 and all requests or petitions were evaluated competitively based upon a variety of criteria including number of customers served, estimated construction cost, and environmental impacts. Accordingly, the District will begin planning for water line extensions over the next two-year period in the following areas:

- Township Road 266 in Springfield Township
- Trails End Road off Route 213
- County Road 56



2017 Flow Daily Averages, Totals and Chlorine PPM Averages

| | | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Totals |
|--------|---------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|----------------|
| Area M | Usage in MG | Total | 55.84 | 53.04 | 57.56 | 54.49 | 61.46 | 57.71 | 75 | 72 | 78.77 | 64.47 | 55.72 | 60.83 | 746.89 |
| | | Daily Av. | 1.801 | 1.894 | 1.857 | 1.816 | 1.983 | 1.924 | 2.419 | 2.323 | 2.626 | 2.080 | 1.857 | 1.962 | |
| | | Min | 1.55 | 1.63 | 1.42 | 1.57 | 1.63 | 1.72 | 1.78 | 1.74 | 2.12 | 1.52 | 1.63 | 1.55 | |
| | | Max | 2.07 | 2.23 | 2.14 | 2.07 | 2.33 | 2.11 | 2.84 | 2.83 | 2.85 | 2.92 | 2.16 | 2.39 | |
| | Avg. Cl.* PPM | Free | 0.912 | 0.8821 | 0.884 | 0.783 | 0.836 | 0.727 | 0.471 | 0.619 | 0.847 | 0.681 | 0.833 | 0.903 | 0.782 |
| | | Total | 1.034 | 0.9928 | 1.01 | 0.913 | 0.971 | 0.837 | 0.589 | 0.725 | 0.977 | 0.803 | 0.97 | 1.019 | 0.903 |
| Area A | Usage in MG | Total | 15.077 | 13.335 | 15.116 | 14.632 | 15.408 | 15.155 | 14.934 | 14.885 | 14.064 | 14.656 | 14.799 | 15.71 | 177.771 |
| | | Daily Av. | 0.486 | 0.476 | 0.488 | 0.488 | 0.497 | 0.505 | 0.482 | 0.480 | 0.469 | 0.473 | 0.493 | 0.507 | |
| | | Min | 0.429 | 0.432 | 0.344 | 0.388 | 0.445 | 0.45 | 0.373 | 0.445 | 0.418 | 0.337 | 0.46 | 0.45 | |
| | | Max | 0.565 | 0.054 | 0.63 | 0.525 | 0.654 | 0.579 | 0.482 | 0.511 | 0.511 | 0.566 | 0.544 | 0.541 | |
| | Avg. Cl.* PPM | Free | 0.748 | 0.8786 | 0.694 | 0.743 | 0.681 | 0.643 | 0.49 | 0.571 | 0.607 | 0.523 | 0.553 | 0.629 | 0.647 |
| | | Total | 0.884 | 0.986 | 0.806 | 0.857 | 0.794 | 0.741 | 0.592 | 0.684 | 0.711 | 0.629 | 0.66 | 0.736 | 0.757 |
| Area J | Usage in MG | Total | 1.041 | 0.971 | 0.986 | 0.906 | 1.171 | 1.078 | 1.084 | 1.455 | 1.674 | 1.582 | 1.087 | 1.093 | 14.128 |
| | | Daily Av. | 0.034 | 0.035 | 0.032 | 0.030 | 0.038 | 0.036 | 0.035 | 0.047 | 0.056 | 0.051 | 0.036 | 0.035 | |
| | | Min | 0.008 | 0.018 | 0.008 | 0.008 | 0.021 | 0.008 | 0.023 | 0.022 | 0.038 | 0.031 | 0.019 | 0.017 | |
| | | Max | 0.059 | 0.054 | 0.049 | 0.041 | 0.071 | 0.073 | 0.048 | 0.076 | 0.078 | 0.073 | 0.067 | 0.071 | |
| | Avg. Cl.* PPM | Free | 1.907 | 1.671 | 1.484 | 1.556 | 0.416 | 0.413 | 0.445 | 0.439 | 0.557 | 0.513 | 0.513 | 0.481 | 0.866 |
| | | Total | 2.032 | 1.792 | 1.616 | 1.675 | 0.525 | 0.515 | 0.535 | 0.538 | 0.656 | 0.612 | 0.607 | 0.6 | 0.975 |
| Area O | Usage in MG | Total | 0.797 | 0.701 | 0.772 | 0.756 | 0.811 | 0.787 | 0.832 | 1.018 | 1.002 | 1.032 | 1.129 | 1.187 | 10.824 |
| | | Daily Av. | 0.026 | 0.025 | 0.025 | 0.025 | 0.026 | 0.026 | 0.027 | 0.033 | 0.033 | 0.033 | 0.038 | 0.038 | |
| | | Min | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 | 0.024 | 0.024 | 0.03 | 0.017 | 0.021 | 0.033 | 0.031 | |
| | | Max | 0.029 | 0.028 | 0.027 | 0.028 | 0.032 | 0.031 | 0.033 | 0.036 | 0.058 | 0.037 | 0.04 | 0.043 | |
| | Avg. Cl.* PPM | Free | 1.003 | 0.95 | 1.081 | 0.983 | 0.861 | 0.697 | 0.565 | 0.677 | 0.6 | 0.355 | 0.757 | 0.761 | 0.774 |
| | | Total | 1.135 | 1.06 | 1.194 | 1.123 | 0.987 | 0.803 | 0.668 | 0.811 | 0.698 | 0.453 | 0.87 | 0.874 | 0.890 |

Grand Total In MG

*Average chlorines for areas M and A, where there is typically more than one analysis performed, are based on the lowest daily value found.

949.613

Jefferson County Water & Sewer District Service Center



Located at 596 State Route 43 in Wintersville, OH 43953-0579

Proudly serving 7,752 water and 3,275 sewer customers
throughout Jefferson County.

Please visit our website at:

www.jcwatersewer.com