



Contract Year 4

ANNUAL REPORT

Monmouth, Illinois
Department of Public
Works



Year Ending April 30, 2017

Report Date: June 2, 2017



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Section 1

EXECUTIVE SUMMARY

Woodard & Curran has concluded the fourth year with the City of Monmouth, IL and is honored to be the City's partner in the operation and maintenance of the City's Public Works Department. The year had many challenges and successful moments captured in this report. A summary of all the activity and statistical data for the past twelve months related to effluent quality, potable water information, chemical usage/cost, maintenance and repair, performance to budget, billing/collection data, Public Works staff, and capital planning is provided later in the report.

Safety is always a number one priority for Woodard & Curran. For the year 2016-17, all safety training and plan initiatives were completed. Unfortunately, we experienced one lost time accident related to an employee injuring his finger while working on a brush hog mower. A thorough investigation was completed followed by training and action items to minimize the potential for future accidents of this nature.

Woodard & Curran's Environmental Compliance and Operations monitored and processed nearly 1.5 billion gallons of wastewater, meeting discharge limitations and remaining 100% compliant at the Waste Water Treatment Facility for 2016 except for the effluent limit on zinc which was exceeded in November 2016, January 2017, and March 2017. The Water Treatment system produced 930 million gallons of high quality water, meeting the IEPA's water quality requirements without losses of service or water quality complaints. The annual consumer confidence report was submitted on May 30, 2017 and all annual IEPA reports did not identify any deficiencies.

The Public Works department had a good year financially. By closely managing the budget line items, implementing best operational practices, obtaining competitive quotes for purchasing, a little cooperation from Mother Nature, the annual Public Works operation budget came in \$23,319 under budget for the year. A more thorough breakdown of the expenses is provided later in section 5 of the report.

The Public Works staff continues to place a high priority on maintenance & repair, facility aesthetics, and cleanliness. We continue to be mindful and utilize best Management practices in the oversight of the annual maintenance and repair expenditures. The annual M&R expense was \$468,511, which included approximately \$100,000 in capital repair costs paid through the contract.

The Public Works organization structure continues to be revisited to ensure it is operating effectively and efficiently. Roger Blackman, Bill Hart, Mike Mackey attended various EPA training sessions required to maintain their certifications and licenses.

Woodard & Curran continued to assist the City in Capital Planning. Section 8 of this report details the projects that are in various stages of design and completion.

Woodard & Curran continued to provide technical assistance and support for governmental relations outreach and economic development. Specifically, a Woodard & Curran consultant provided regular advisory services to the mayor and administrator regarding governmental relations strategies, funding opportunities and outreach.

As the City and Woodard & Curran move forward and focus on the safe and compliant optimization of the Public Works operation there will be more challenges. Through effective planning, training, and execution we will continue to provide a safe, compliant, and cost effective service to the residents of Monmouth. Thank you for the opportunity to serve the City of Monmouth.

Section 2

HEALTH & SAFETY

Woodard & Curran takes pride in making safety the number one priority for all of our contract operations. Ensuring each employee goes home healthy each day increases productivity, saves money, and promotes a safe work environment for all.

Unfortunately, we did have one safety incident this past year that resulted in a lost time accident. The employee was changing cutting blades on one of the brush hog mowers used for right of way mowing and cut his finger when the socket wrench slid off the bolt and cut the end of his finger. Surgery was required to repair the finger and the employee returned to work within a few days.

Staff is required to hold monthly safety meetings of which 6 are documented training sessions and 6 that are more a “tailgate” session to review procedures, upcoming projects hazards identification, experiences, near misses, etc. These tailgate sessions are important as they engage each employee and give ample opportunity to get their perspective on all of those mentioned topics.

The following safety topics were covered by all Woodard and Curran employees.

- Preventing Back Injury
- Pandemic Influenza
- Hearing Conservation
- Stopping Unsafe Acts Safely
- Use of the Health & Safety Manual and Basic Safety Expectations
- Industrial Ergonomics
- Confined Space Entry Training
- Fire Extinguisher Safety
- Guarding Floor and Wall Openings and Holes
- Personal Protective Equipment (PPE)
- Lockout/Tagout
- Traffic Control Through Work Zones





Section 3

WASTEWATER TREATMENT

The Consolidated WWTP treated and discharged 1.48 billion gallons of wastewater during the past contract year. Of that total, 1.106 billion gallons of wastewater came from the City users and 374 million gallons from the Farmland pre-treatment plant. There were 49 recorded combined sewer overflow events covering that same period. An additional 29 million gallons of excess flow was treated and discharge through the excess flow system. There was no dramatic increase or decrease in flows and loadings from the previous year.

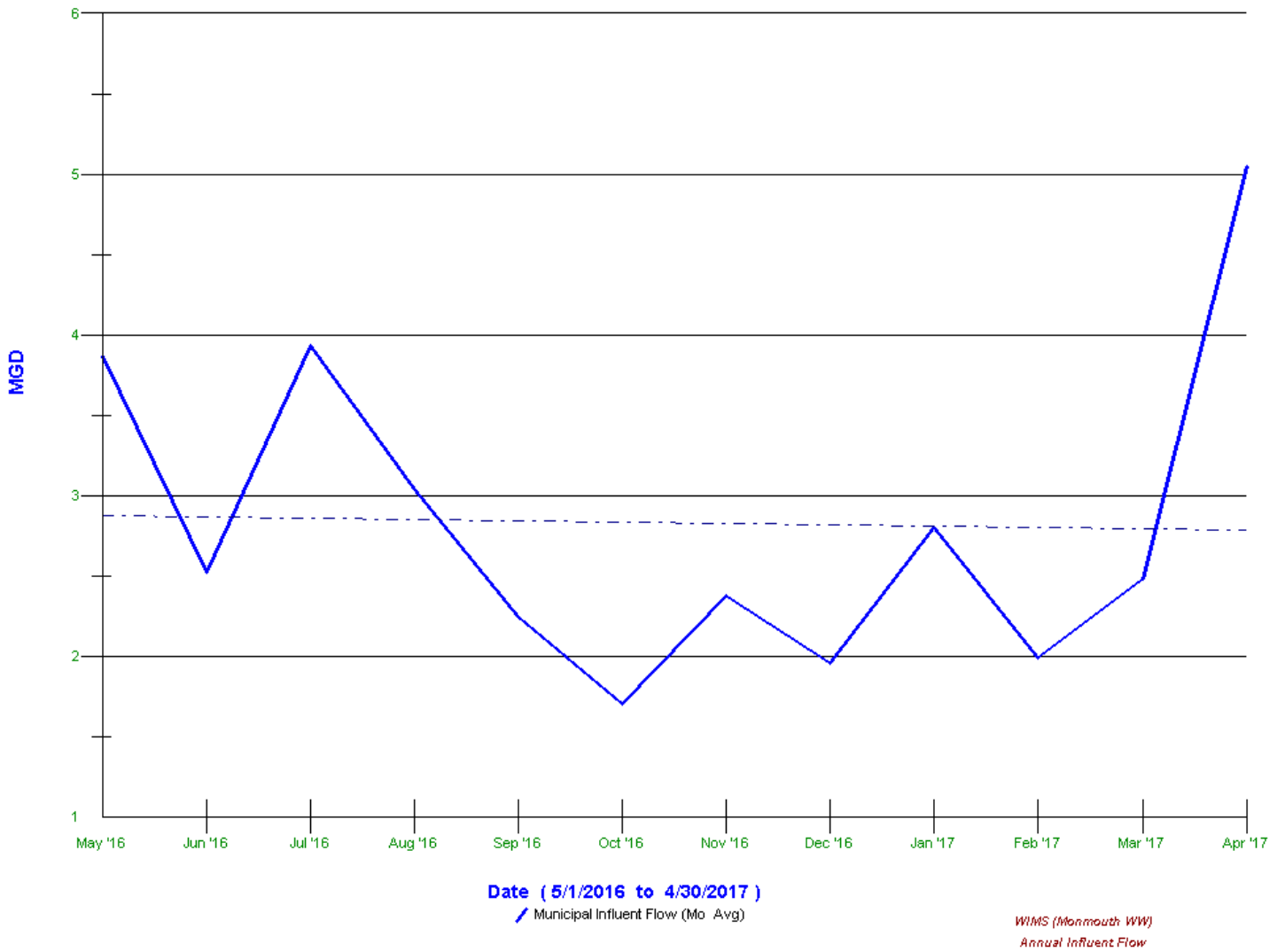
All regulatory reporting and effluent quality permit limits were met for the year.

The weather station at the plant reported 39" of rain and 14" of snow from May 1, 2016 through April 30, 2017. The Consolidated Plant continues to produce excellent effluent quality. The table below outlines the water quality vs. NPDES permit limits.

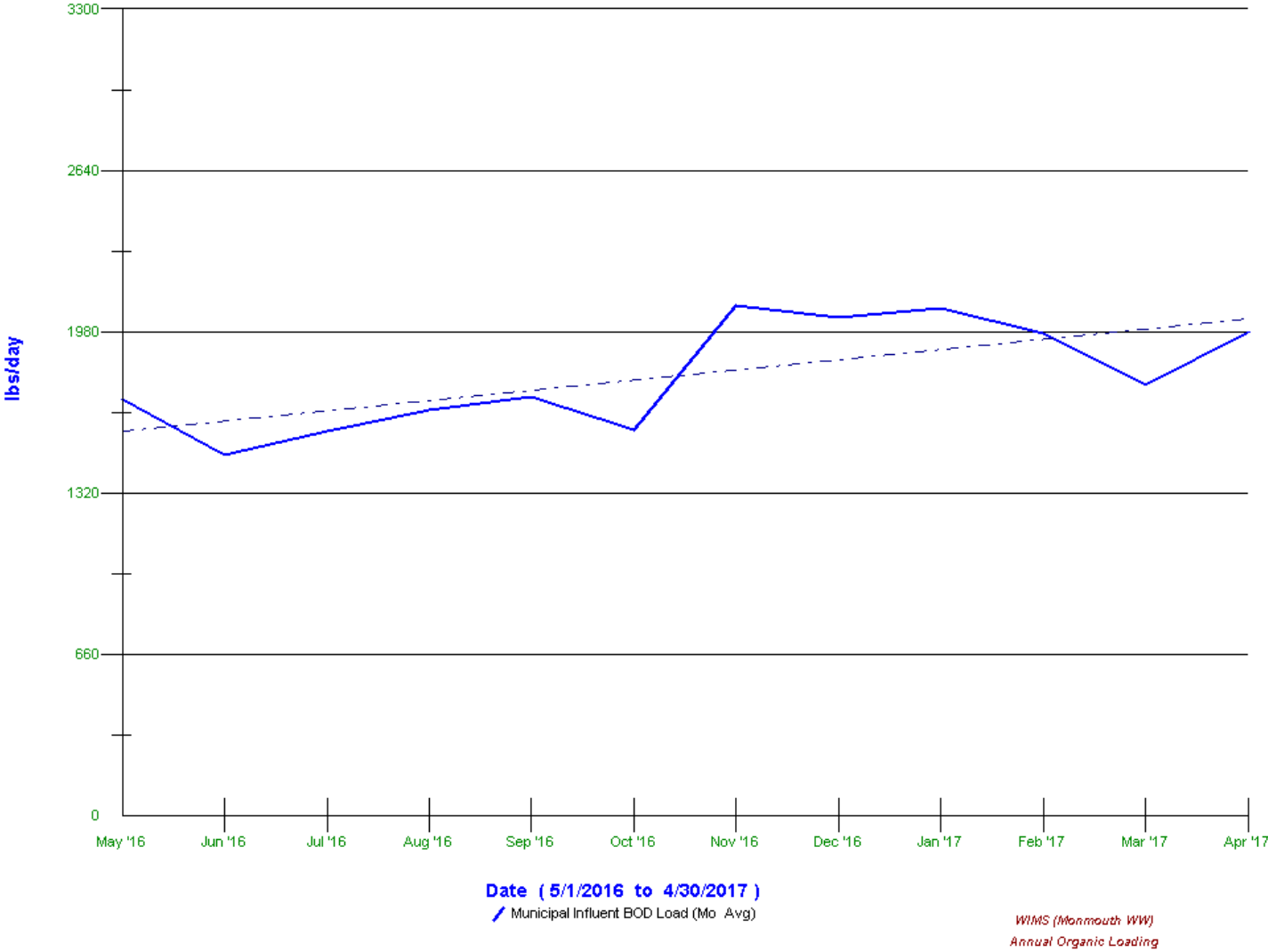
The trend graphs show the past 12 months' flows and loadings to the treatment plant.

Table 3-1: Water Quality vs. NPDES Permit Limits		
	Annual Average	Permit Limit
Daily Flow (MGD)	4.06	4.62
Ammonia N mg/l	0.3	1.5
CBOD5 mg/l	2	10
Chlorides mg/l	326	500
Suspended Solids mg/l	6.0	12
Total Phosphorus	0.9	1.0

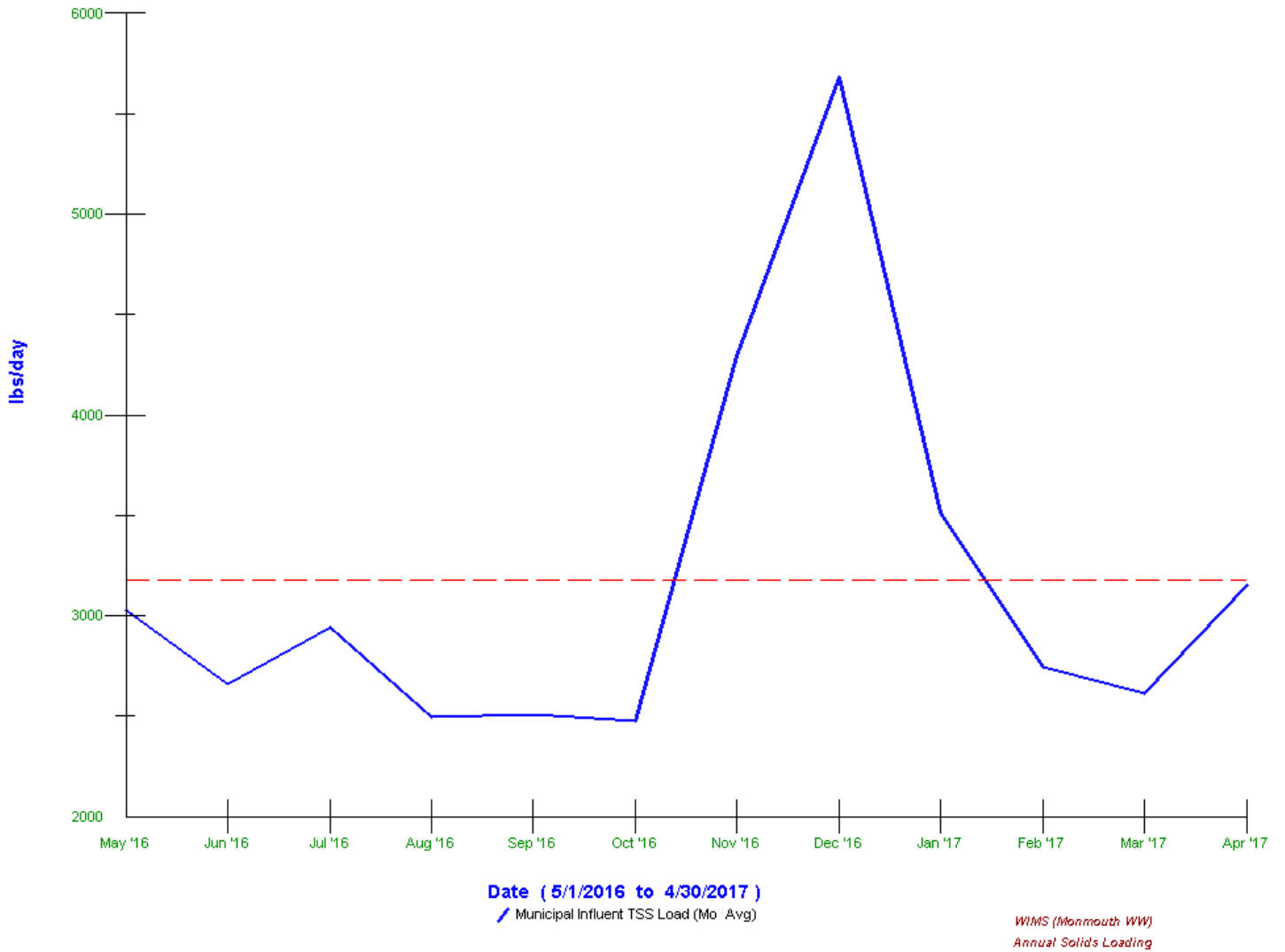
INFLUENT FLOW



ANNUAL ORGANIC LOADING



ANNUAL SOLIDS LOADING





Section 4

WATER TREATMENT

The water treatment plants produced 930 million gallons of finished water during the contract year, an increase of 1.5% compared to the previous 12 months.

Chemical usage and associated cost was consistent with water production as both are linear with production. The finished water quality met all standards per the Clean Water Act for drinking water. The Consumer Confidence Report was mailed out on May 30, 2017

The table below outlines the chemical usage for ion exchange softening for the year.

Table 4-1: Monthly Chemical Usage for Ion Exchange Softening		
	Daily Average	Annual Total
Treated Water to System	2.55 MGD	930 MG
Poly Phosphate Usage - lbs	80	29,106 lbs.
Salt Usage - Tons	4.9	1,797 Tons
Chlorine Usage - lbs	101	36,965 lbs.

The graph on page 8 outlines water production over the past 12 months.

WATER DEMAND



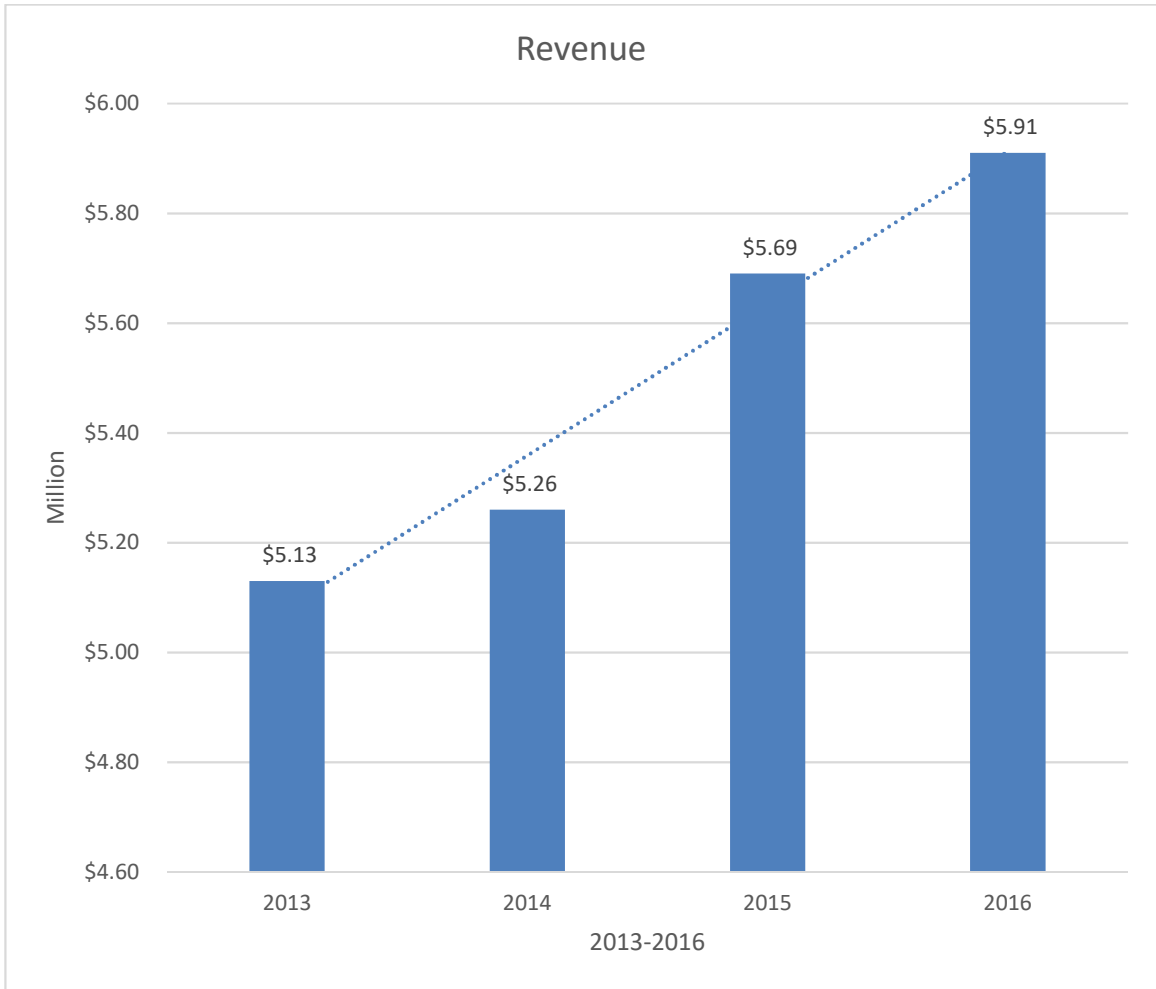


Section 5

CUSTOMER SERVICE/COLLECTION

The Customer Service Office collected \$5,908,291 of revenue for water, sewer, landfill, recycling, garbage, and Farmland services for the fiscal year compared to \$5,696,942 for FY 2016, an increase of 3.6%. The table below outlines the breakdown for each category per month.

Table 5-1: Fiscal Year Billing Totals	
Account	Annual Billed Amount
Water	\$1,965,876
Sewer	\$1,421,706
Landfill	254,430
Recycle	169,008
Garbage	407,330
Yard Waste	27,045
Penalty	27,730
Smithfield Water	686,935
Smithfield Sewer	726,641
Smithfield Capital Improvement	190,637
Smithfield Sewer Surcharge	30,953
Total Billed	5,908,291





Section 6

YEAR END ANNUAL COST

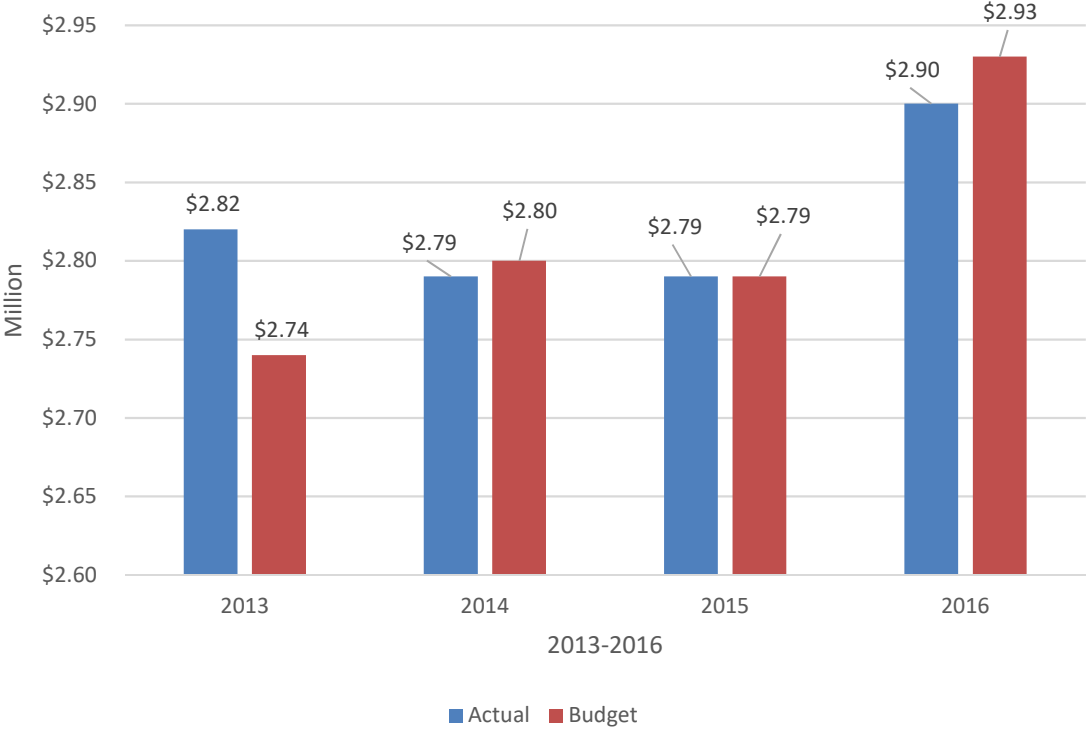
Performance to Budget

Table 6-1: Annual Cost			
Budget Category	YTD Actual	Annual Budget	Over (Under)
Labor (D.L. + FB)	\$1,374,565	\$1,492,633	(\$118,068)
Utilities	\$38,044	\$30,000	\$8,044
Chemicals Costs	\$276,180	\$272,000	\$4,180
Maintenance and Repair Costs	\$468,511	\$334,000	\$134,511
Sludge Disposal Costs	\$10,000	\$0	\$10,000
Lab Supplies & Equipment	\$40,368	\$40,500	(\$132)
Office Supplies	\$21,124	\$18,000	\$3,124
Miscellaneous Expenses	\$69,220	\$60,200	\$9,020
Other Operating Costs	\$104,156	\$149,927	(\$45,771)
Overhead (G&A of D.L.)	\$310,386	\$337,046	(\$26,660)
Fixed Fee for Contract Year 4	\$195,304	\$196,870	(\$1,566)
Total	\$2,907,857	\$2,931,176	(\$23,319)

As we concluded our fourth year of contract operations and review the budget, the department finished the year \$23,319 under budget. Another mild winter resulted in less overtime cost, also, there was one employee out on extended medical leave during the past 12 months. With the large variance in labor we utilized those funds to complete several capital repair items including:

- Replace defective transfer switch at North Water Plant - \$28,000
- Oxidation ditch rotor bearing and shaft replacement - \$38,500
- Repair sludge lagoon levy at North Wastewater Treatment Plant - \$15,000
- Replaced South Lift Station pump - \$7,000
- CCTV of central sewer interceptor - \$6,000
- Replaced the tower lighting with LED at the Consolidated WWTP - \$4,000

Cost Trend





Section 7

MAINTENANCE/REPAIR COST DETAIL

Maintenance and Repair Cost Breakdown

All scheduled preventative and preventative maintenance tasks were completed and all corrective maintenance repairs were tracked in the computerized maintenance management system. Below is a breakdown of expenses that were charged to the M&R fund per category.

Table 7-1: Maintenance & Repair Fund	
Budget Category	YTD
Grounds/Landscaping	\$18,910
Electrical	\$60,561
Street	\$114,615
Water Distribution	\$47,706
Sewer Collection	\$19,291
Instrumentation	\$2,996
Mechanical	\$139,800
Vehicle	\$50,813
Janitorial/Misc/Tools	\$9,657
HVAC Maintenance	\$3,715
Software License Maintenance	\$445
Snow Removal	\$0
Total Expenditures	\$468,511
Threshold	\$334,000
Over (Under)	\$134,511

Chemical Cost Breakdown

Water softening plants chemical costs are listed below.

Table 7-2: Water Softening Plant Chemicals	
Budget Category	YTD
Chlorine	\$25,663
Salt	\$208,695
Polyphosphate	\$41,823
Total	\$276,180
Threshold	\$272,000
Over (Under)	\$4,180



Section 8

STAFFING

The Public Works Department Staff and their respective departments are listed below:

Public Works Director Andy Jackson	
Street Department	
Roger Blackman,	Superintendent
Mike Ross	Foreman
Gary Ward,	Equipment Operator
Greg Sage	Equipment Operator
Brandon Caldwell	Maintenance
Mark Blackman	Maintenance
Joe McVey	Equipment Operator
Ken Hall	Maintenance
Jeff Carlson	Maintenance
Water Department	
Roger Blackman	Superintendent
Bob Gray	Maintenance
Bryan Epley	Service
Brian Glasgow	Meter Reader
Dave Marston	Operations/Maintenance
Wastewater Department	
Bill Hart	Superintendent
Doug Schaeffer	Maintenance
Mike Makey	Lab Technician/Operations
Ray Brodrick	Operations
Billing/Collection/Administration	
Laura Armstrong	Billing Clerk
Peg Ballard	Administration
Alicia Ward	Service Clerk

As a staff, the department is responsible for operations and maintenance of 2 water treatment plants, 2 wastewater treatment plants, 120 lane miles of streets and right of way, 75 miles of water mains/distribution, 50 miles of sanitary and combined sewer, 10 miles of storm sewer, 8 lift stations, grounds keeping of the cemetery/airport/Citizens Lake complex/city owned properties, 3,500 customers for water/sewer/landfill/recycling/garbage collection fees, and the approximately 9,950 residents that are served by the department.



Section 9

CAPITAL IMPROVEMENTS

In working through the variety of challenges within the Public Works Department with regards to capital improvements, the following items were completed during this contract year:

1. Well 10 construction began with drilling, casing, and lining of a 2,450' deep bore hole. The well was test pumped, water quality sample analyzed, and approved by IEPA. The project is projected to be completed and on line in July of this year.
2. Finished water capacity will be increased by installation of another softening vessel at the North Water Treatment Plant. This project accommodates the additional Well and provides the City an additional 500,000 gallons per day of water for future development.
3. Combined Sewer Overflow compliance is being addressed through a phased construction and post construction monitoring concept that allows the City to comply the Federal CSO policy contained in the Clean Water Act. Phase 1 construction is underway beginning with replacement of the existing storm water screw pumps and appurtenances with larger screw pumps that will be able to pump a flow rate of 55,500 gallons per minute. The current system pumps approximately 26,000 gallons per minute. Once Phase 1 is completed, the system will be monitored to determine the impact of the project and what will be required for Phase 2. The City received a 7-year compliance schedule from IEPA in the Long Term Control Plan.
4. North Wastewater Pre-Treatment Plant design is underway to accommodate the current and projected future needs of Smithfield Foods. A bio-gas use analysis is included in the design to determine the use/market value, if any, of the gas that is produced through anaerobic treatment. Design time is approximately 14 months.
5. SCADA system upgrades and replacement for the water and wastewater treatment plants were completed in 2016. Both systems are now secure and have remote access for operations.
6. Two significant road projects were completed in 2016 included 40 blocks of new asphalt, ADA compliant sidewalks, and drainage utilizing \$550,000 of motor fuel tax funds. North 6th Street was repaired in the Shopko area and 800' of new concrete pavement was installed from near the Parkins property north to the City limit line near Prairie Point development. The total project cost was funded by a combination of FAU (Federal) and Local funds (MFT).

To continue to plan for the needs of the City and economic development, the following projects are in various stages of discussion, planning, and design.

Projects currently in the discussion and planning stage include:

- Wastewater Permit Modifications - Once the City is issued the new NPDES permit, the following provisions will need addressed.
- Wastewater Disinfection – The City received notice from IEPA that IEPA is removing the disinfection exemption for the wastewater plant discharge. The City is working toward re obtaining the disinfection exemption. If this is not successful, plant modification for compliance must be complete by January of 2018.
- Capacity, Management, Operations and Maintenance (CMOM) Plan – plan must be submitted within 12 months.
- Phosphorous Discharge Optimization Plan – plan must be submitted within 18 months.
- Sewer system televising/repairs- This sewer condition assessment is recommended to identify areas of concern and for use in developing a long-term capital improvement plan. The central sewer interceptor that runs through downtown and terminates at North 6th Street and East Clinton was televised this year.
- Water main replacement – water main replacement and upgrade is needed based on the previously supplied water system hydraulic model. In partnering with the City, we are actively seeking funding for those low to moderate income areas utilizing a combination of DCEO and local funds for qualified projects.



Section 10

WOODARD & CURRAN SUPPORT STAFF

All the Woodard & Curran staff listed below has been directly involved in the support and ongoing management of the operations of the Public Works facilities.

Name	Title	Function
Marc Thomas	VP - Area Manager	Management Support
Steve Niro	SBU Leader	Management Support
Shannon Eyler	Health & Safety Director	Health & Safety
Kim Brierley	Project Administrator	Accounting
Lorraine Enright	P.E.	Water Modeling Specialist
Kelley Begin	P.E.	CAAPP Air permitting
Cara Jordan	Human Resources	HR Support
Joe Hurley	Vice President	SCADA Audit & Training
Alan Fabiano	IT Specialist	IT Support
Jackie Smith	Marketing Assistant	Project Support Specialist
Doug McKeown	Chief Executive Officer	Management Support
Joe Shea	Process Engineer	Engineering Support Water
Carl Wilcox	Process Engineer	Engineering Support Wastewater
Jeannie Dubois	MIS Specialist	Engineering Support
Brian Ravens	O&M Controller	Finance
Jennifer Anders	P.E.	Local Engineering Support
Wendy Foreman	Health & Safety	Health & Safety Support
Jason Kreil	P.E.	LTCP
Bobby Nichols	Ops Specialist	O&M Support
Ray Giguere	SCADA Specialist	SCADA Support