



Contract Year 5

ANNUAL REPORT

Monmouth, Illinois
Department of Public
Works



Year Ending April 30, 2018

Report Date: June 1, 2018



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Section 1

EXECUTIVE SUMMARY

Woodard & Curran has concluded the fifth 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 2017- 18, all safety training and plan initiatives were completed. Unfortunately, we experienced one lost time accident diagnosed as ulnar nerve palsy of the hand of an employee.

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 2017-2018 except for the effluent limit on zinc which was exceeded in November 2018, January 2018, and March 2018. The Water Treatment system produced 1 billion 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, 2018 and all annual IEPA reports did not identify any deficiencies. The required lead and copper sampling and testing was done, Monmouth is required to sample and analyze for lead and copper every 3 years. The results were quite good, lead level of 1.9 parts per billion vs the USEPA Action Limit of 15 parts per billion while copper level of 0.19 parts per million vs the USEPA Action Limit of 1.3 parts per million. These excellent results confirm that our chemistry and corrosion inhibitor blend/dosage levels are right where they need to be.

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 \$38,940 under budget for the year. A more thorough breakdown of the expenses is provided later in section 5 of the report.

This past year Woodard & Curran IT department and support staff instituted a new cloud-based GIS program for use in the mapping, inventory, and maintenance tracking of the City's sewer collection system and the water distribution system. The program is called Utility Cloud and will become a very useful tool as we expand it's usage to include water meters, service work orders, addressing, property boundaries, and a multitude of what is termed "assets". Currently there are over 14,000 assets in the program including man-holes, hydrants, water valves, storm drains, pipe segments, and customer accounts. As we continue to move data over from the old computerized maintenance system into Utility Cloud there will be opportunity to add more assets to the database. This program can be continuously updated to reflect any change in the systems such as a water main replacement or sewer pipe replacement/relocation. The employee is simply able to log in from a tablet, input the current information and update the database. An exciting and useful tool that is also very affordable, the City is paying \$85 per month for the "space".

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. The capital plan is reviewed and edited each year, a copy is available to you if you would like to see it.

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. An employee was loading barricades and had discomfort in the palm of his right hand, after medical examination it was determined the employee had ulnar nerve palsy in the hand which required surgery

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 the 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 1.35 billion gallons of wastewater during the past contract year. Of that total, 967 million gallons of wastewater came from the City users and 386 million gallons from the Smithfield pre-treatment plant. There were 27 recorded combined sewer overflow events covering that same period. An additional 27 million gallons of excess flow was treated and discharge through the excess flow system. There was approximately a 5% decrease in flows and loadings from the previous year as rainfall was down about 10 inches from last year.

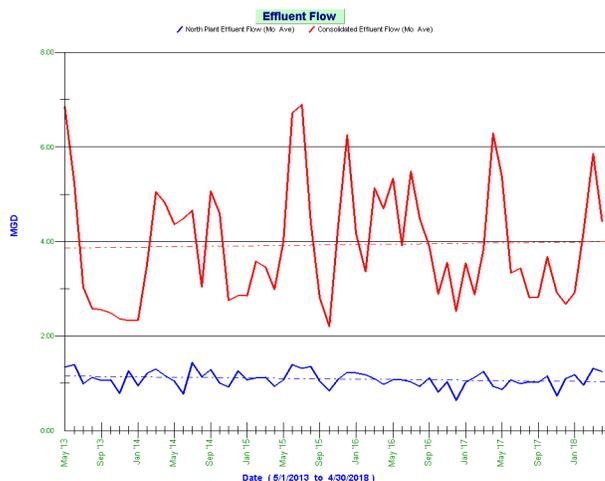
All regulatory reporting and effluent quality permit limits were met for the year.

The weather station at the plant reported 29.7" of rain and 29" of snow from May 1, 2018 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)	3.71	4.62
Ammonia N mg/l	0.2	1.5
CBOD5 mg/l	1	10
Chlorides mg/l	356	500
Suspended Solids mg/l	4	12
Total Phosphorus	0.8	1.0

The graph below outlines the past 5 years of gallons of wastewater treated and discharged.





Section 4

WATER TREATMENT

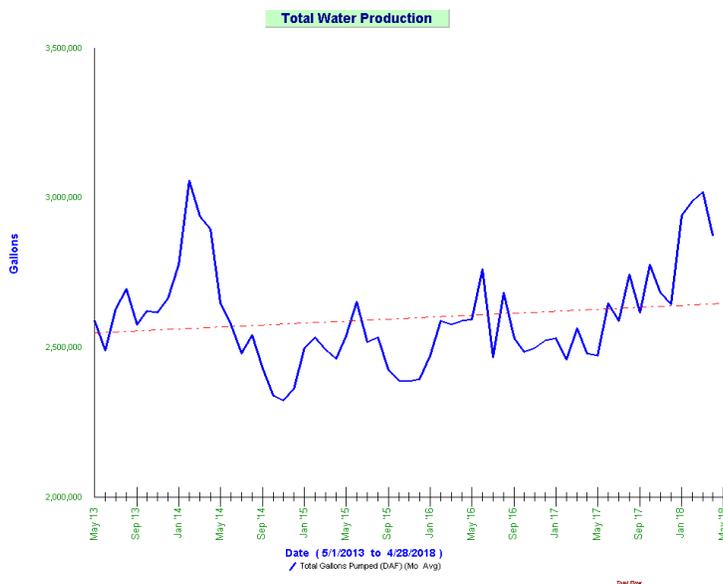
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Table 4-1: Monthly Chemical Use for Ion Exchange Softening		
	Daily Average	Annual Total
Treated Water to System	2.75 MGD	1 BG
Poly Phosphate Usage lbs	87	31,897 lbs
Salt Usage Tons	5.3	1,942 Tons
Chlorine Usage lbs	109	39,730 lbs

The graph below outlines water production over the past 5 years.





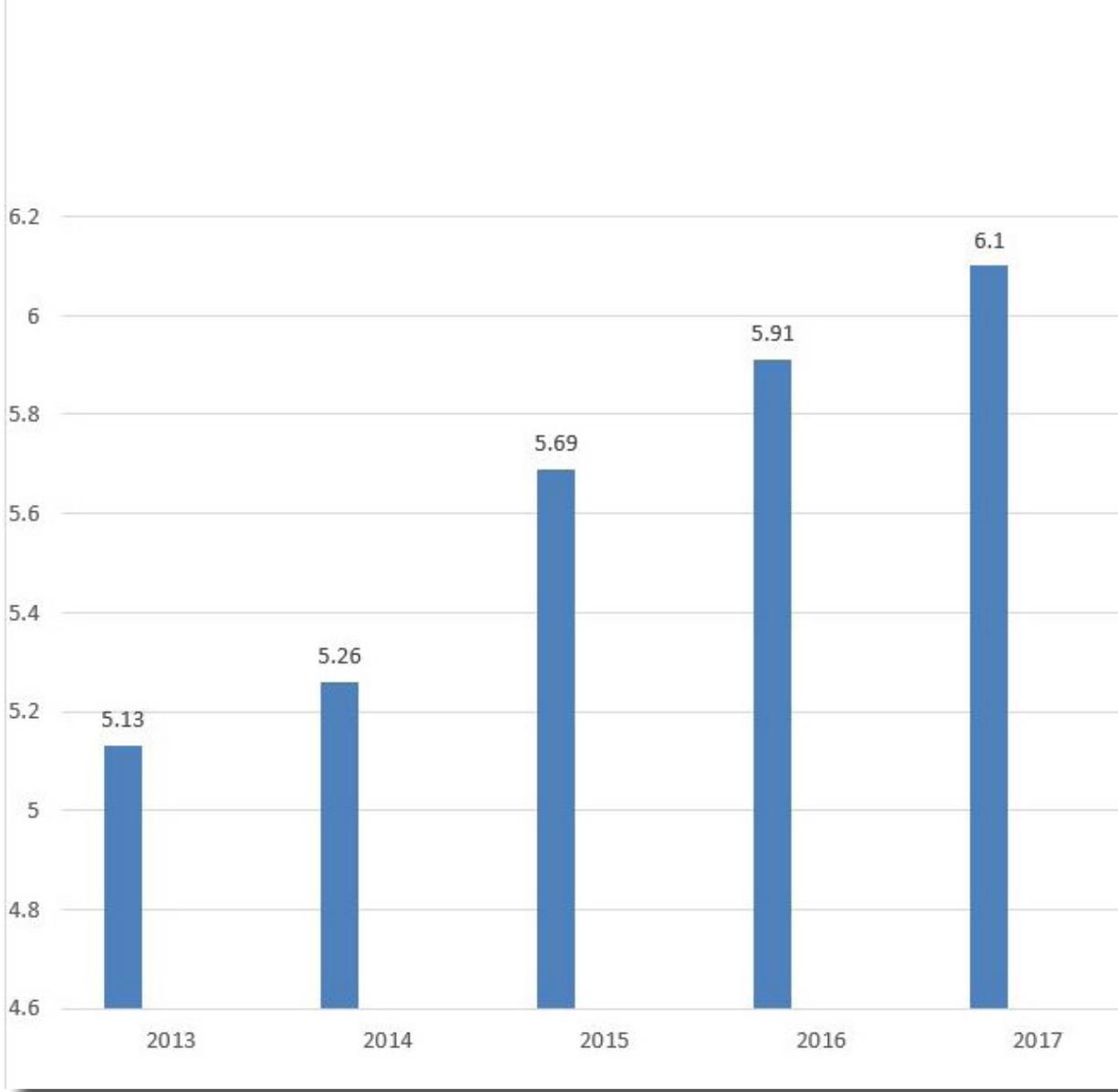
Section 5

CUSTOMER SERVICE/COLLECTION

The Customer Service Office collected \$6,103,417 of revenue for water, sewer, landfill, recycling, garbage, and Farmland services for the fiscal year compared to \$5,908,291 for FY 2017, an increase of 3.3%. The table below outlines the breakdown for each category per month.

PAYMENT TOTALS 2017-2018 FISCAL YEAR										
MONTH	WATER	SEWER	LANDFILL	RECYCLE	GARBAGE	YARD WASTE	SFIELD DEBT	SFIELD SURCHAR	OTHER	PENALTY
MAY '17	\$215,671.89	\$181,412.62	\$22,531.07	\$15,217.48	\$36,009.98	\$2,817.50	\$15,886.40	\$0.00	\$0.00	\$2,111.84
JUNE	\$229,035.75	\$185,314.05	\$21,675.38	\$14,587.52	\$34,276.33	\$2,676.41	\$15,886.40	\$0.00	\$0.00	\$2,415.97
JULY	\$226,645.63	\$177,343.57	\$20,382.92	\$13,761.42	\$33,176.67	\$2,586.98	\$15,886.40	\$0.00	\$0.00	\$2,521.86
AUGUST	\$239,768.02	\$184,406.12	\$21,489.03	\$14,114.30	\$33,102.77	\$2,609.82	\$15,886.40	\$0.00	\$0.00	\$2,301.30
SEPTEMBER	\$230,056.22	\$177,006.99	\$20,634.09	\$13,930.35	\$33,406.80	\$2,589.03	\$15,886.40	\$0.00	\$0.00	\$3,730.94
OCTOBER	\$245,396.03	\$191,069.72	\$21,617.65	\$14,594.06	\$35,101.23	\$2,719.71	\$15,886.40	\$963.64	\$0.00	\$3,074.76
NOVEMBER	\$255,413.40	\$191,805.94	\$20,807.47	\$14,057.33	\$33,625.95	\$2,599.28	\$15,886.40	\$485.63	\$0.00	\$2,973.09
DECEMBER	\$217,504.34	\$171,027.12	\$19,986.66	\$13,507.70	\$32,372.58	\$2,510.17	\$15,886.40	\$45.80	\$0.00	\$2,483.01
JANUARY	\$240,718.16	\$189,318.08	\$22,711.65	\$15,771.57	\$36,336.31	\$2,793.10	\$34,065.81	\$0.00	\$200.00	\$3,193.44
FEBRUARY	\$211,016.71	\$169,417.17	\$18,119.07	\$12,582.91	\$30,056.45	\$2,324.92	\$34,065.81	\$93.76	\$25.00	\$2,100.49
MARCH	\$227,565.20	\$184,690.50	\$22,206.29	\$15,420.68	\$35,267.38	\$2,743.25	\$34,065.81	\$69.21	\$219.73	\$2,339.10
APRIL '18	\$224,786.67	\$173,997.72	\$21,130.92	\$14,694.62	\$34,403.61	\$2,788.18	\$34,065.81	\$407.92	\$1,466.06	\$2,026.11
YEAR TO DATE	\$2,763,578.02	\$2,176,809.60	\$253,292.20	\$172,239.94	\$407,136.06	\$31,758.35	\$263,354.44	\$2,065.96	\$1,910.79	\$31,271.91
SMITHFIELD WATER	\$773,397.80									
SMITHFIELD SEWER	\$761,271.49									
TOTAL REVENUE	\$6,103,417.27									

Municipal Services Revenue





Section 6

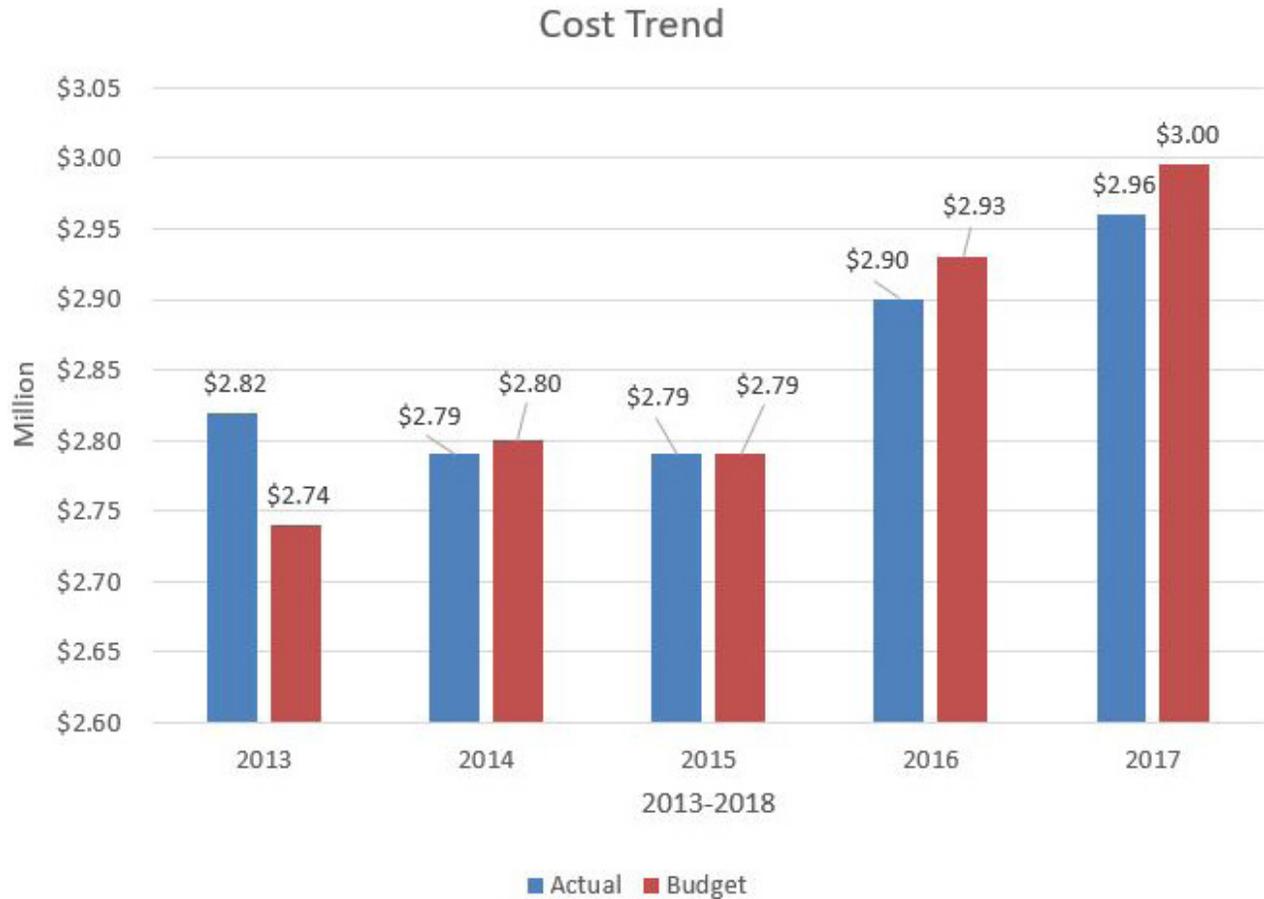
CUSTOMER SERVICE/COLLECTION

Table 6-1: Annual Cost			
Budget Category	YTD Actual	Annual Budget	Over (Under)
Labor (D.L. + FB)	\$1,454,009	\$1,501,976	(\$47,968)
Utilities	\$40,932	\$30,500	\$10,432
Chemical Costs	\$290,532	\$276,533	\$13,999
Maintenance and Repair Costs	\$367,770	\$339,567	\$28,203
Sludge Disposal Costs	\$2,200	\$24,830	(\$22,630)
Lab Supplies and Equipment	\$41,468	\$41,175	\$293
Office Supplies	\$18,286	\$18,300	(\$14)
Miscellaneous Expenses	\$67,458	\$146,408	(\$78,950)
Other Operating Costs	\$147,638	\$70,947	\$76,691
Overhead (G&A of D.L.)	\$328,325	\$339,156	(\$10,831)
Sub Total	\$2,758,617	\$2,789,392	(\$30,775)
Fixed Fee	\$198,620	\$200,836	(\$2,216)
Carryover from Year 4		\$5,949	(\$5,949)
Total Contract Year 5	\$2,957,237	\$2,996,177	(\$38,940)

As we concluded our fifth year of contract operations and review the budget, the department finished the year \$38,940 under budget. Labor and sludge costs were significantly under budget while utility, maintenance and repair, and chemical costs were slightly higher than budget.

Similarly, as in the past, we plan to use a portion of these funds for several capital projects that are upcoming including, (hopefully), the cost share to remove the rail crossing on North Main Street, new electrical service for the West Broadway traffic signal at ICS, and miscellaneous water main valve replacements, any remaining funds will be carried into the year 6 budget.

The trend below provides a summary of the last five years actual versus budgeted cost. The actual annual cost has averaged less than 1% increase over the five-year period. We continue to review operations costs associated with labor, chemicals, maintenance and repair to ensure we are operating the systems as efficiently as possible.





Section 7

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
Dalton Simpson, Maintenance
Joe McVey, Equipment Operator
Ken Hall, Maintenance
Jeff Carlson, Maintenance
Mark Blackman, Maintenance

Water Department
Roger Blackman, Superintendent
Bob Gray, Maintenance
Bryan Epley, Service
Brian Glasgow, Meter Reade
Dave Marston, Operations/
Maintenance

Billing | Collection | Administration
Laura Armstrong, Billing Clerk
Peg Ballard, Administration
Alicia Ward, Service Clerk

Wastewater Treatment | Lift Station
Bill Hart, Superintendent
Doug Schaeffer, Maintenance
Mike Mackey, Lab Technician/
Operations
Ray Brodrick, Operations

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 8

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 was completed and online in September of 2017. Construction included drilling, casing, and lining of a 2,450' deep bore hole, well house and pump installation, and installation of 2,100 feet of 10" raw water main to connect the well to the North Water Treatment Plant. The well was test pumped, water quality sample analyzed, and approved by IEPA. Finished water capacity was 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. The softener installation was completed in September of 2017. Total design and construction cost of the project was \$2,836,925 which came in under the cost estimate budget by \$42,655.
2. 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 included 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 vs the old system pump rate of approximately 26,000 gallons per minute. Total design and construction cost of Phase 1 was \$2,387,714 which came in \$370,000 under the cost estimate budget. Phase 2 design will need to begin in early summer to stay on the compliance schedule set forth by IEPA. The City received a 7-year compliance schedule from IEPA in the Long Term Control Plan.
3. North Wastewater Pre-Treatment Plant improvements began with the replacement of 6,500 feet of force main pipe from the Smithfield pump station on North 6th Street out to the pre-treatment plant. The project was substantially completed on April 30, 2018. Final punchlist and cleanup/restoration efforts are nearly completed at this time. Total construction cost for the forcemain project was \$478,880 which came in significantly under the cost estimate budget of \$674,000. A second project involving rehabilitation of the clarifier at the North Pre-Treatment Plant is underway and should be completed by September 2018. The project involves replacement of the center column and sludge removal mechanism, modifying the clarifier from a peripheral feed to a center feed system, new discharge piping and new electrical components to operate the mechanism. The clarifier project is currently tracking under budget and almost a full month ahead of schedule. Full design for the remaining plant upgrade is in discussion to accommodate the current and projected future needs of Smithfield Foods. A bio-gas use analysis was 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.
4. South Sunnyslane road and drainage project was completed in September of 2017. The project included removal of existing pavement, installation of 500 feet of storm sewer and appurtenances, new aggregate base, 1,100 feet of new 8" PCC pavement, surface drainage and ditch shaping. Total cost was \$450,000. The funding for this project came from a cooperative effort with Big River Resources, West Central Illinois FS, the Patee Foundation, and the City of Monmouth. The private sector paid for 90% of the project with the City share of 10%.

To continue to plan for the needs of the City and economic development, Jennifer Anders and Andy Jackson met with USDA representatives to initiate discussions of a downtown sewer interceptor replacement project. The existing sewer interceptor is over 100 years old and traverses under several downtown buildings. The conceptual project is a combination of replacement and rehabilitation of the existing sewer along with investigation into mitigating the effects of storm water runoff into the combined sewer in that area. The USDA offers a 40-year low interest loan for qualified projects with a 45% forgiveness if the MHI is below poverty. The consensus was to pursue this funding avenue and gather the needed information to determine the viability of this funding source.

Section 9

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.

Table 9-1: Support Staff		
Name	Title	Function
Marc Thomas	VP - Area Manager	Management Support
Jennifer Anders	P.E.	Local Engineering support
Bobby Nichols	Ops Specialist	O&M support
Kim Brierley	Project Administrator	Accounting
Joe Hurley	Vice President	SCADA Audit & Training
Alan Fabiano	IT Specialist	IT Support
Jackie Smith	Marketing Assistant	Project Support Specialist
Jeannie Dubois	IT Specialist	IT Support
Wendy Foreman	Health & Safety	Health & Safety Support
Tom Roche	O&M Controller	Finance
Steve Niro	Business Center Manager	Management Support
Doug McKeown	Chief Executive Officer	Management Support