CITY OF FINDLAY

WATER POLLUTION

CONTROL CENTER

Introduction

The annual report of operations of the Water Pollution Control Center for the year ending December 31, 2017 is respectfully submitted herein. We wish to acknowledge the initiative and cooperation exhibited by those employees listed below in their outstanding operation and maintenance of the wastewater system throughout the year 2017.

The Water Pollution Control Center (WPCC) is comprised of three departments, Water Pollution Control, Sewer Maintenance, and Stormwater Maintenance. Each department operates under separate budgets and are all under the direction of Dave Beach, Superintendent of the Water Pollution Control Center (WPCC).

The Key Processes of Operations at the WPCC include:

- Provide Wastewater Treatment that Meets or Exceeds our National Pollutant Discharge Elimination System (NPDES) Permit
- Meet Regulatory Reporting Requirements Set Forth in NPDES
- Ensure Reliable and Valid Analytical Lab Data
- Operation and Maintenance of Wastewater Collection System
- Maintain Stormwater Collection System
- Operation and Maintenance of Sanitary & Storm Pumping Stations
- Condition and Dispose of Biosolids
- Floodwater Management

Water Pollution Control Employees:

- Raul Amesquita
- Joel Borer
- Seth Cole
- James Fox
- Dave Frantz
- Joshua Gearing
- Gary Hayden
- Matt Karl
- Savannah Kline
- Tom Moses
- Werner Roesch
- Seth Rosselit
- Mark Stears
- Todd Ward
- Jason Wolfarth

Sewer Maintenance Employees:

- Joe Arras
- Bob Courtney
- Parker Dukes
- Dan Gonzalez
- Dave Holman
- Chris Kolhoff
- Michael Stillberger
- Isaac Theis
- Brent Vaughan

Stormwater Employees:

- Dana Cramer
- George Elston

The WPCC employs many staff members that are licensed with the State of Ohio in wastewater treatment and collection. To keep their licensure they must participate in continuing education and continually meet the standards set forth by the Ohio EPA.

The following employees are licensed by the Ohio Environmental Protection Agency:

Waste Water Operator Licenses:

Dave Beach	Class 4	Seth Cole	Class 3
Jason Wolfarth	Class 4	Werner Roesch	Class 2
David Frantz	Class 3	Joel Borer	Class 1
Mark Stears	Class 3	Josh Gearing	Class 1
Raul Amesquita	Class 3	Seth Rosselit	Class 1

Waste Water Collection Licenses:

Robert Courtney	Class 2	Mike Stillberger	Class 1
Chris Kolhoff	Class 1		

In the year 2017, the City of Findlay WPCC completed its eighty-fourth year of operation by treating 3.829 billion gallons of sewage, 128 million gallons less than 2016.The average daily total for sewage treated was 10.50 million gallons per day which increased from 2016's daily average of 10.120 million gallons per day. Additional flow data can be found in the graphs included with this report.

The WPCC has an approved Ohio Environmental Protection Agency Sludge Management Plan and continues to meet all state and federal regulatory requirements for disposal in a landfill. The wastewater biosolids (sludge) generated at the WPCC is conditioned on four belt filter presses located in the Solids Processing Building. 2051.15 dry tons of biosolids were treated and disposed of at the Hancock County Landfill in 2017. This treatment resulted in an average of 12.90 dry tons per day of operation of the belt filter presses.

In an effort to preserve equipment and cut down on repairs, the City invested in a bar screen that went into operation on August 4, 2015 at the Water Pollution Control Center. In 2017, it removed 12,120 pounds or 33.21 pounds of debris per day from the raw wastewater entering the WPCC. The bar screen will allow for the continued removal of large objects such as rags, plastics, solids, and other debris from the waste stream preventing damage and clogging of downstream equipment, piping, and appurtenances. The WPCC previously used grinders to reduce debris to a passable size before entering the influent pump station but they were found to be inefficient at removing debris and in need of frequent mechanical repairs.

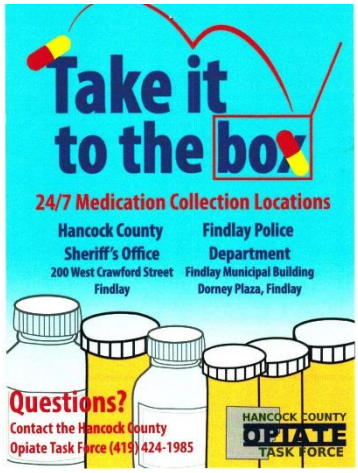
Plant maintenance made several improvements throughout 2017. They upgraded the telemetry controls at Lima Ave. and Lowes pump stations, installed new pumps at Van Buren pump station and replaced #1 sludge pump VFD at the solids process building.

The City of Findlay has continued work on the Long Term Control Plan for Combined Sewer Overflows. The LTCP, which was submitted to the OEPA in 1998, listed eight recommended improvements to the City's system. Since submitting the plan, the City has completed all eight of these improvements. To evaluate whether the improvements were successful in achieving the goal stated in the LTCP, the City is required by their current NPDES permit to submit the following documents:

1. Long-Term Control Plan Post-Construction Compliance Monitoring Plan. The purpose of this report was to develop a plan for monitoring CSO location activity for a 24-month period, in order to adequately characterize any remaining overflow volumes and occurrences following completion of the recommended improvements listed in the LTCP. This report was submitted to the OEPA in November 2013 and approved on January 15, 2015. Findings from this report will be used to develop the Long-Term Control Plan Completion Evaluation Report.

2. Long-Term Control Plan Completion Evaluation Report. This report is to evaluate if the projects completed by the City met the goals of the LTCP submitted in 1998. This is accomplished in part by using the findings from the Long Term Control Plan Post-Construction Compliance Monitoring Plan and evaluating the hydraulic performance of the City's sewerage system.

The City of Findlay WPCC continues to partner with Marathon Petroleum Corporation on a ground-mounted 975.88 kilowatt (kW) solar energy facility composed of four sub array systems. The project was constructed as a research and development project to better understand the potential advantages and disadvantages of solar energy. The electrical power it generates is donated to the Water Pollution Control Center. Over 6,000 solar panels were used to complete the project including tracking and fixed solar panels from both SHARP and KYOCERA brands. The facility went on line on November 5, 2012 and in its five years of operation it has generated 4,160,238 kilowatt hours (kWh) of electrical power with an estimated retail value of $353,817. The solar panels generated 715,970 kWh this year, which is about 1/7th of the total kWh used by the plant in 2017.



The WPC once again partnered with the Hancock County Board of Alcohol, Drug Addiction, and Mental Health Services, The University of Findlay, the Findlay Police Department, and Rader Environment Services to hold semi-annual drive-up collections of prescription drugs. In addition to these events, there are also permanent collection boxes at the Hancock County Sheriff's Office and the City of Findlay Police Department, which were installed in 2011 to allow the citizens of Findlay and Hancock County an alternative to disposing of their unwanted prescription drugs by flushing them down their toilets. Officer Rhoads and Akers of the Findlay Police Department destroyed 815 pounds of medical collection drugs on May 11, 2017. We are pleased with the success of these efforts and will continue to promote proper disposal of these common contaminants.

The WPCC staff continues to conduct tours for school age children, citizen groups, and University of Findlay students who are interested in wastewater management. These tours provide a general overview of the treatment process and focus on pollution prevention as well as ways that we can keep our storm water system cleaner. In 2017, the University of Findlay Senior Forum, students from Liberty Benton schools, and members of Hancock County Leadership group toured the plant and listened to a brief presentation.

Laboratory testing, to assure compliance with the NPDES permit limits, is performed at the WPCC and several outside laboratories. Two full-time laboratory technicians are required to monitor the specified parameters. The WPCC is pleased to report that our laboratory, once again, received an acceptable rating on all parameters that were tested as part of the annual DMR-QA (Discharge Monitoring Report & Quality Assurance) study. This study involves purchasing samples with unknown values and running the tests through our lab. The results are then sent back to the company for evaluation and the evaluation is then forwarded to the USEPA.

There were two violations of the WPCC NPDES permit during 2017. We exceeded the weekly concentration limit for E.coli bacteria during the second week of July and the monthly concentration limit for E.coli for the month of August.

The Water Pollution Control Center also has an approved Ohio Environmental Protection Agency Industrial Pretreatment Program to regulate the disposal of industrial wastewater into the sanitary wastewater collection system. The Water Pollution Control Center is the legal authority responsible for the management, testing, and record keeping of the program. Audits of the program and inspections are performed annually by the Northwest District Office of the Ohio EPA and tri-annually by the State Office of the Ohio EPA. Inspection reports from all EPA agencies have been above average and the City of Findlay is meeting all federal requirements at this time. The WPCC works closely with local industries in the pretreatment of their individual discharges and has developed an excellent cooperative spirit to ensure compliance with the pretreatment program. At present, all industrial dischargers are in compliance with current regulations and their continued cooperation is anticipated.

In looking ahead to next year, we continue to focus on meeting our key processes while working towards the 2018 objectives of:

- Continued compliance on the Combined Sewer Overflow Long Term Control Plan
- Continue the Annual Sewer and Manhole Lining Program
- UV System Upgrade
- Clarifier 1 & 2 Rehab
- Midland Ave, Garfield Ave, and George St. sewer separation
- East Front Street CSO Removal
- Flap Gate Project

2017

ANNUAL SUMMARY OF OPERATIONS

MONTH	FLOW (MILLION GALLONS)		
	TOTAL	*AVG/DAY*	*PEAK*
JANUARY	349.792	11.284	28.308
FEBRUARY	317.120	11.326	23.888
MARCH	304.833	9.833	19.965
APRIL	356.885	11.896	30.127
MAY	478.097	15.422	33.144
JUNE	255.083	8.503	16.417
JULY	526.941	16.998	33.195
AUGUST	210.151	6.779	10.139
SEPTEMBER	227.460	7.582	14.710
OCTOBER	188.102	6.068	11.359
NOVEMBER	402.218	13.407	32.549
DECEMBER	212.726	6.862	12.323
2017 TOTAL	**3,829.408**		
2017 AVERAGE	**319.117**	**10.497**	**22.177**
2016 TOTAL	3,701.812		
2016 AVERAGE	308.484	10.120	20.770
2015 TOTAL	4,213.375		
2015 AVERAGE	351.115	11.528	24.907

2017

ANNUAL SUMMARY OF OPERATIONS

MONTH	SUSPENDED SOLIDS MG/L		5-DAY CBOD MG/L		AMMONIA MG/L	
	RAW	*FINAL*	*RAW*	*FINAL*	*RAW*	*FINAL*
JANUARY	103	1.55	89	2.50	12.9	0.030
FEBRUARY	126	2.35	94	2.10	11.5	0.020
MARCH	133	3.10	105	2.30	13.1	0.040
APRIL	124	1.70	92	2.10	11.1	0.030
MAY	109	3.30	71	1.91	7.8	0.030
JUNE	153	2.86	112	2.91	13.8	0.030
JULY	88	2.76	65	2.86	7.8	0.020
AUGUST	152	2.40	125	2.10	15.7	0.030
SEPTEMBER	130	2.86	119	1.95	16.2	0.040
OCTOBER	153	2.36	124	1.36	17.9	0.040
NOVEMBER	114	3.00	86	1.73	10.4	0.080
DECEMBER	137	3.62	128	2.00	16.1	0.040
NPDES LIMIT (SUMMER)	5/01-10/31	14	N/A	10	N/A	0.91
NPDES LIMIT (WINTER)	11/01-4/30	18	N/A	13	N/A	4.2
2017 AVERAGE	**127**	**2.66**	**101**	**2.15**	**12.9**	**0.036**
2016 AVERAGE	138	3.08	104	2.17	14.6	0.039
2015 AVERAGE	129	2.57	114	1.73	14.2	0.016

2017

ANNUAL SUMMARY OF OPERATIONS

MONTH	TOTAL PHOSPHORUS MG/L		COD MG/L	E. COLI #/100ML
	RAW	*FINAL*	*FINAL*	*FINAL*
JANUARY	2.6	0.54	6	
FEBRUARY	2.9	0.67	10	
MARCH	3.1	0.66	15	
APRIL	2.9	0.66	8	
MAY	2.1	0.59	8	78
JUNE	3.4	0.87	17	37
JULY	2.0	0.55	14	142
AUGUST	3.6	0.90	12	199
SEPTEMBER	3.6	0.95	7	18
OCTOBER	4.2	0.75	6	7
NOVEMBER	2.6	0.56	6	
DECEMBER	3.5	0.76	14	
NPDES LIMIT	***N/A***	***1***	***N/A***	***126/100ML***
2017 AVERAGE	3.04	0.71	10.25	80.17
2016 AVERAGE	3.54	0.72	12.17	38.33
2015 AVERAGE	3.24	0.68	14.42	69.67

2017

ANNUAL SUMMARY OF OPERATIONS

MONTH	DISSOLVED OXYGEN (PPM)		
	FINAL EFFLUENT	*BLANCHARD RIVER ABOVE*	*BLANCHARD RIVER BELOW*
JANUARY	9.4	14.4	13.5
FEBRUARY	9.3	13.6	12.4
MARCH	9.2	12.2	12.0
APRIL	8.5	11.4	11.0
MAY	8.1	8.6	8.5
JUNE	7.9	8.0	7.9
JULY	7.4	7.5	7.5
AUGUST	7.3	7.2	7.0
SEPTEMBER	7.5	7.3	7.4
OCTOBER	7.9	6.4	6.2
NOVEMBER	8.3	8.8	8.6
DECEMBER	9.1	12.4	11.5
NPDES PERMIT (SUMMER) 5/01-10/31	6.7		
NPDES PERMIT (WINTER) 11/01-4/30	5.3		
2017 AVERAGE	8.3	9.8	9.5
2016 AVERAGE	8.3	9.4	9.2
2015 AVERAGE	8.5	10.0	9.3

2017

SOLIDS PROCESSING

ANNUAL REPORT

MONTH	OPERATING HOURS				TOTAL OPERATING
	1	2	3	4	HOURS
JANUARY	138.50	132.25		125.00	395.75
FEBRUARY	131.50	125.50		117.00	374.00
MARCH	160.25	152.25		144.25	456.75
APRIL	130.50	124.00		116.25	370.75
MAY	28.25	159.00	123.75	144.50	455.50
JUNE		117.75	114.25	99.50	331.50
JULY		110.50	104.50	35.00	250.00
AUGUST		165.75	157.75	149.75	473.25
SEPTEMBER	20.75	124.75	118.75	93.50	357.75
OCTOBER	102.25	97.75	93.50		293.50
NOVEMBER	128.50	122.00	115.50		366.00
DECEMBER	127.00	121.00	42.00	68.25	358.25
TOTAL	967.50	1552.50	870.00	1093.00	4,483.00
AVERAGE	107.50	129.38	108.75	109.30	373.58

2017

SOLIDS PROCESSING

ANNUAL REPORT

MONTH	AVERAGE COST $/TON	POLYMER COST TOTAL,$	POLYMER USAGE GALLONS	AVERAGE SOLIDS CAPTURE, %
JANUARY	8.53	1,711.42	232.53	0.97
FEBRUARY	8.94	1,604.25	217.97	0.97
MARCH	9.58	1,842.13	250.29	0.96
APRIL	9.73	1,715.03	233.02	0.97
MAY	12.08	2,486.36	337.82	0.97
JUNE	11.70	1,721.94	233.96	0.98
JULY	11.33	1,494.01	202.99	0.99
AUGUST	11.42	2,695.97	366.30	0.99
SEPTEMBER	16.05	1,738.87	236.26	0.98
OCTOBER	11.37	1,378.16	187.29	0.98
NOVEMBER	11.23	1,795.40	243.94	0.98
DECEMBER	10.55	1,657.48	225.70	0.97
TOTAL		21,841.02	2,968.07	
AVERAGE	11.04			0.98

Polymer cost/gal *$7.36*

2017

SOLIDS PROCESSING ANNUAL REPORT

MONTH	TOTAL SLUDGE DEWATER & SUPNT. GALLONS	DEWATERED SLUDGE GALLONS	SUPERNANT GALLONS	DEWATERED SLUDGE DRY TONS	AVG. SOLIDS FEED %	AVG. SOLIDS CAKE %
JANUARY	7,450,030	5,160,695	2,289,335	200.84	1.04	14.80
FEBRUARY	7,281,071	4,983,291	2,297,780	180.08	1.03	16.00
MARCH	8,397,789	6,029,265	2,368,524	192.82	0.94	15.30
APRIL	7,516,463	4,856,641	2,659,822	175.40	1.03	15.50
MAY	8,493,688	5,912,761	2,580,927	216.37	1.04	15.90
JUNE	6,991,064	4,349,271	2,641,793	148.69	0.95	17.60
JULY	5,491,855	3,294,185	2,197,670	134.24	1.24	19.40
AUGUST	9,027,572	6,218,475	2,809,097	239.52	1.09	18.10
SEPTEMBER	7,429,572	4,751,339	2,678,233	158.57	0.96	15.70
OCTOBER	6,605,844	3,937,446	2,668,398	122.94	0.98	14.90
NOVEMBER	8,166,488	5,128,825	3,037,663	121.68	1.02	16.10
DECEMBER	7,800,268	4,950,300	2,849,968	160.00	0.98	16.30
TOTAL	90,651,704	59,572,494	31,079,210	2,051.15		
AVERAGE	7,554,309	4,964,375	2,589,934	170.93	1.03	16.30

2016-2017

COMPARISON OF OPERATIONS

REMOVAL OF SUSPENDED SOLIDS	
2016	*2017*
RAW TO FINAL	*RAW TO FINAL*
97.74%	98.76%

REMOVAL OF 5-DAY C.B.O.D.	
(Carbonaceous Biochemical Oxygen Demand)	
2016	*2017*
RAW TO FINAL	*RAW TO FINAL*
97.86%	97.89%

REMOVAL OF AMMONIA	
2016	*2017*
RAW TO FINAL	*RAW TO FINAL*
99.91%	99.97%

REMOVAL OF TOTAL PHOSPHORUS	
2016	*2017*
RAW TO FINAL	*RAW TO FINAL*
79.31%	76.88%

COST OF OPERATION		
	2017	*2016*
PAYROLL & BENEFITS	$1,232,064	$1,137,006
UTILITIES (electric, water & sewage)	$517,165	$562,779
CHEMICALS	$52,645	$56,974
EQUIPMENT MAINTENANCE	$73,204	$74,242
MISCELLANEOUS	$142,521	$186,078
CAPITAL EQUIPMENT	$65,863	$323,137
OPERATING COST TRANSFER	$621,681	$639,063
TOTAL	$2,705,143	$2,979,278
COST PER MILLION GALLONS	$706	$805

Weather Data

On September 19, 1934 the Sewage Treatment Works became a National Weather Service station for the City of Findlay and that tradition continues today at the Water Pollution Control Center. Weather records are on file dating back to 1894 for temperature, precipitation amounts, wind direction, and sky conditions. River levels are also monitored and supplied to the news media when they pose a threat to the community.

The average temperature for the year 2017 was 53.7°F which was 3.30°F above the historical average of 50.4°F. The lowest temperature of the year was -4°F recorded on December 27th. There was a total of four (4) days at 0°or below this year. The highest temperature of the year was recorded only once when the mercury reached 94°F on June 13th. There were five (5) record highs set or tied throughout the year. The year 2017 recorded a total of five (5) days at or above 90°F but failed to reach 100°F even once. The historical record low temperature of minus 21° was recorded on January 13, 1912 and February 20, 1929. The highest temperature on record was 109° recorded on July 24, 1934.

New Record High Temperatures:

- ***January 11th 60° Old Record 58° (2013)***
- ***February 17th 62° Old Record 61° (1927)***
- ***February 18th 69° Old Record 63° (1911)***
- ***February 24th 74° Old Record 68° (1921***)
- ***March 1st 66° Old Record 65° (1997)***

Total precipitation for 2017 was 45.61 inches, which was 9.52 inches above the one hundred and twenty-three year average of 36.09 inches. July had the greatest amount of monthly precipitation at 8.65 inches and December had the least at 0.86 inches. No rainfall records were tied or broken in 2017. September 10th recorded the largest single day rainfall at 4.30 inches and was one of the six days of the year in which we received more than one inch of rain. The Blanchard River exceeded flood stage three times in 2017; on May 5th, July 13th and again on November 19th. On July 13th the river elevation reached 16.53 feet, which is the 5th highest on record. The WPCC recorded 189 days with precipitation, which accounts for more than 50% of the days in 2017. Out of those 189 days, 148 days or 78% had measurable amounts of precipitation of more than 0.01".

The year 2017 recorded a total annual snowfall of 12.7 inches, which is 14 inches below the one hundred and twenty-three year average of 26.7 inches. The month of December was the snowiest month with 6.3 inches recorded. There were no snowfall records set in 2017.

2016-2017
TEMPERATURE AND PRECIPITATION DATA

MONTH	*AVERAGE TEMPERATURE* *(DEGREES)*				*PRECIPITATION* *(INCHES)*			
	2016		***2017***		***RAINFALL***		***ANNUAL SNOWFALL***	
	MAX	***MIN***	***MAX***	***MIN***	***2016***	***2017***	***2016***	***2017***
JANUARY	35.1	19.3	64	-1	1.34	3.63	1.6	1.7
FEBRUARY	40.8	24.3	74	12	2.21	1.84	2.2	2.4
MARCH	54	36.5	75	13	3.82	2.59	2.1	2.3
APRIL	59.1	37.3	85	30	3.69	3.20	0.8	T
MAY	70.7	50.2	87	34	2.79	6.39		
JUNE	81.9	61.1	94	49	3.54	5.76		
JULY	85	66.2	88	56	1.46	8.65		
AUGUST	85.5	66.9	88	47	3.88	2.42		
SEPTEMBER	79.3	59.2	90	43	4.29	2.06		
OCTOBER	67.6	48	85	33	2.48	2.27		
NOVEMBER	56	35.9	69	19	1.06	5.82	T	
DECEMBER	34.7	23	58	-4	1.53	6.30	5.9	6.3
TOTAL					**32.09**	**50.93**	**12.6**	**12.7**
AVERAGE	**62.5**	**44.0**	**79.8**	**27.6**				
YEARLY AVERAGE	**53.2**		**53.7**					
HISTORICAL AVERAGE	50.4				36.02		26.7	

2017 Annual Report
Sewer Maintenance Department

The Sewer Maintenance department maintains a sanitary sewer system that reaches far outside the City of Findlay corporation limits. The sanitary sewer system has over 17,229 customers and is estimated to consist of three hundred and fifteen (315) miles of sewers and several thousand manholes. They also maintain 15.1 miles of sanitary force mains from various pump stations located both within the City of Findlay corporation limits and in the outlying area. Located on these force mains are 35 air relief valves that require weekly maintenance and replacement as needed to ensure efficient pumping and proper flows from the lift stations to the plant.

A total of one hundred and forty five (145) reports of sewer problems were investigated in the year 2017. Only seven point six percent (7.6%) of the reports were due to a problem within the City's sewer system while the remaining ninety-two point four percent (92.4%) were determined to be in the homeowner's sewer. Seven point six percent (7.6%) of the 145 calls were received during nonscheduled work hours and required employees to be called in to work.

As part of a preventive maintenance program, all City sanitary sewers are cleaned every eight (8) years and those areas that historically have sewer problems are monitored and cleaned more often. In 2017, a total of 45 miles of sanitary sewer were cleaned by a high-pressure water sewer cleaner and vacuum truck called the sanitary vactor. This cleaning removed 595 cubic feet of debris from the City's sanitary system. The sanitary and storm vactors are often used to help other City departments with cleaning projects. The Water Treatment Plant, Water Pollution Control facility and even the City swimming pool have all utilized the vactor for the cleaning of tanks, basins, wet wells, or drains. In 2017, the vactor crews also assisted the Water Distribution department with hydro-excavation on several water main breaks.

Vactor

Additional preventative efforts included the application of grease treatment to 5,455 feet of sanitary sewer to decrease grease build up and treatment of 5,214 feet of sanitary sewer by private contractor to decrease the effect of tree root intrusion on the sewers. The root treatment process involves the spraying of foam on the roots within the sewer system which kills the roots without harming the tree. This helps to reduce sewer blockages within the lines and cuts down on the frequency that cleaning is required. A rat control maintenance program is also in place for the City sewers.

Throughout the year, four (4) sanitary sewer pipes and three (3) storm sewer pipes were repaired which had either collapsed or were damaged. The Sewer Maintenance Department also repaired manholes, constructed new manholes, adjusted castings to grade, and conducted dye tests.

The Sewer Maintenance Department, along with the Water Distribution Department, is required to locate and mark sewers and related structures as part of the Ohio Utilities Protection Service. During 2017, there were seven thousand eight hundred and thirty five (7,835) requests for sewer locates. This is down from the previous year's high of thirteen thousand nine hundred and eighty eight (13,988).

As required by OSHA and the City of Findlay's confined space entry policy, all confined space entries must be documented. During 2017, only two (2) entries were required by maintenance personnel to the sewer system. The Sewer Maintenance Department uses an enclosed trailer to allow the confined space equipment to be readily available at the job site. This reduces entry time and provides a safer entry procedure with all equipment close at hand.

The camera truck features a pipe ranger transporter which is a heavier unit that allows for better maneuverability when solids are on the bottom of the pipe. The pipe ranger camera allows for inspection of up to 48" pipe, has an inclinometer that measures pipe grade, and an offers electric camera lift to avoid the lens going under water. The system also has a lateral launcher transporter, which is a separate camera that allows for inspection of the main line and up to 150 feet in the lateral lines. Both units have a much better picture quality than the previous cameras. All images are sent to the dual monitors in the control room where the operator can view both the mainline and lateral inspections at the same time. The updated software has the adaptability to write, print reports, and view maps.

In 2017, 48,044 feet of sewer were televised and assigned a rating based on their condition.

The televising program has allowed us to determine the sewers most in need of attention as we plan our sewer lining project. Sewer lining literally creates a “pipe” within the existing pipe and it restores the structural integrity of the original sewer line without digging it up. It is a cost effective alternative to sewer replacement that prevents root intrusion, stops infiltration and leaks into the sewer, increases flow rates, and is corrosion resistant to the hydrogen sulfide gas which is created within the sewer system. The sewer lining project for 2017 is going to carry over to 2018, it is expected that the program will continue in 2018-2019.

Before Lining

After Lining

In late 2016, construction of a cold storage building got underway for the Sewer Maintenance department and was 97% completed in 2017. The remaining outside concrete work will be completed in spring of 2018. This departmental project was funded through the capital improvement plan and will provide much needed storage space for equipment that was formerly stored outdoors. Much of the labor on this project has been performed by WPCC employees.

The Sewer Maintenance and the Water Pollution Control Departments play an integral role in keeping the residents of Findlay safe when the Blanchard River nears and exceeds flood stage. They worked tirelessly along with the authorities to barricade and close flooded streets as well as responding to an increased number of sewer concerns during flood events.

Installation of flap gates on all Combined Sewer Overflows has also continued to prevent surcharging of the sewer system during flood conditions. Additional flap gates are installed on storm sewers to help minimize street flooding during high water levels of the Blanchard River and its tributaries.

During 2017, approximately thirty-five percent (35%) of the Sewer Maintenance Unit man-hours were spent maintaining sanitary sewers, fourty percent (40%) on storm collection system and the remaining twenty-five percent (25%) on building and equipment maintenance, vacation, sick leave, confined space entry training and equipment use and various other safety training.

2017

SEWER MAINTENACE

ANNUAL REPORT OF OPERATIONS

MONTH	CLEANING									CATCH BASINS		CONFINED SPACE ENTRIES	MANHOLES ADJUSTED #	SEWER CALLS #	Issue with city sewer #	TELEVISED	
	BUCKET		VACTOR						JET								
	SANITARY FEET	STORM FEET	SANITARY FEET	DEBRIS REMOVED FT3	STORM FEET	DEBRIS REMOVED FT3	BASINS #	DEBRIS REMOVED FT3	FLUSHING FEET	REPAIRED #	PATCHED #					SANITARY FEET	STORM FEET
JANUARY	0	0	7,500	25	0	0	80	606	0	0	0	0	0	17	2	3,976	0
FEBRUARY	0	0	19,705	59	0	0	209	1,818	0	0	3	0	0	4	0	6,391	0
MARCH	0	0	19,785	22	0	0	374	3,030	300	0	8	0	4	11	1	6,920	0
APRIL	0	0	25,305	69	0	0	53	505	0	2	42	0	1	5	0	5,617	0
MAY	0	0	17,797	73	0	0	195	1,111	0	0	17	0	0	11	1	4,272	0
JUNE	0	0	19,130	28	0	0	277	1,717	0	2	6	1	1	7	0	1,391	0
JULY	0	0	14,550	19	0	0	81	606	0	0	2	0	5	37	3	820	0
AUGUST	0	0	38,245	88	838	0	478	4,040	0	4	32	0	11	9	0	2,227	0
SEPTEMBER	0	0	21,915	53	730	0	347	2,525	0	0	42	0	2	9	1	3,626	0
OCTOBER	0	0	5,391	5	0	0	0	0	0	0	33	0	1	11	0	8,647	200
NOVEMBER	0	0	27,220	138	110	0	211	1,717	0	1	30	0	0	15	2	2,769	0
DECEMBER	0	0	21,516	16	0	0	238	2,222	0	0	20	1	2	9	1	1,388	0
TOTAL	0	0	238,059	595	1,678	0	2,543	19,897	300	9	235	2	27	145	11	48,044	200
2016 TOTAL	0	0	221,952	533	1,282	10	2,788	26,563	0	0	139	3	48	72	5	41,154	4,655

SEWER MAINTENANCE
COST OF OPERATION

	2017	2016
PAYROLL & BENEFITS	$714,300	$690,320
UTILITIES (electric, water & sewage)	$14,994	$13,472
WATER & SEWER LINE MAINTENANCE	$13,455	$7,790
VEHICLE & EQUIPMENT MAINTENANC	$16,103	$22,848
FUEL	$20,177	$17,770
MISCELLANEOUS	$21,344	$30,444
CAPITAL EQUIPMENT	$32,284	$32,011
TOTAL	**$832,657**	**$814,655**

2017 Annual Report
Stormwater Maintenance Department

The Stormwater Maintenance Department works in a combined effort with Sewer Maintenance to maintain and repair the storm sewer system within the City of Findlay corporation limits. The collection system consists of approximately six thousand four hundred (6,400) catch basins connected by an unknown amount of sewer line and manholes. Throughout the year, two thousand five hundred and forty three (2,543) catch basins along with one thousand six hundred seventy eight (1,678) feet of storm sewer were cleaned. These efforts removed 19,897 cubic feet of debris from the stormwater collection system. A total of two hundred thirty five (235) were patched. .

In an effort to decrease stormwater pollution, the Public Works department with partial funding from the Stormwater Maintenance unit put in over 1,965 man hours on the street sweepers in 2017. This sweeping removed 754 cubic yards of debris from the streets and prevented this pollution from entering into the storm sewer system and then flowing into the receiving stream.

With Ordinance 2015-37 and 2015-38 concerning illicit discharge, illegal connection control, drainage, and erosion and sediment control in place, Mitchell Heacock, in the Engineering Department has been able to put the Storm Water Management Plan (MS4) into action.
The plan addresses the following six minimum controls which were set forth by the OEPA:

- Public Education and Outreach
- Public Participation and Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff Control
- Post Construction Storm Water Management
- Pollution Prevention and Good Housekeeping

Each of these controls have BMPs (Best Management Practices) or activities which have measurable goals. Each of these goals have an implementation schedule to track the progress of the activities that are being achieved.

All City departments submitted their of Municipal Operations Pollution Prevention/Good Housekeeping reports which require each city department to complete quarterly non-stormwater inspections during dry weather, semi-annual stormwater inspections during rain events, and an annual site inspection report each year that sums up all findings from the year and explains the actions taken to correct any problems. There were again no significant issues found from this reporting.

Continued outreach to the public through the distribution of fliers in the water and sewer bills helps to alert residents of the hazards of storm water pollution and how they can prevent it. Educational materials were also provided during field trips and tours given at the WPCC.

STORMWATER MAINTENANCE COST OF OPERATION		
	2017	**2016**
PAYROLL & BENEFITS	$149,220	$139,057
WATER LINE, SEWER LINE, & CATCH BASIN MAINTENANCE	$22,046	$23,831
VEHICLE & EQUIPMENT MAINTENANC	$5,404	$18,824
STREET SWEEPING	$31,700	$20,173
MISCELLANEOUS	$8,095	$7,685
CAPITAL EQUIPMENT	$0	$0
TOTAL	**$216,465**	**$209,570**