

CITY OF WOOSTER
DIVISION OF ENGINEERING
2017 Annual Report



Burbank Road Reconstruction
G.E. Baker Construction

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Summary & Narrative – Section 1



**Northview Waterline
Dirt Dawg Excavating**

Division of Engineering 2017 Annual Report Executive Summary

The 2017 Annual Report for the Division of Engineering is contained in the following pages. The intent of this report is to summarize roles and responsibilities of the Division of Engineering, as well as describe the major projects and activities accomplished by the Division of Engineering for the year ending December 31, 2017. Hopefully, this report will provide information that can be used for City organizational, development and infrastructure planning for the coming years.

The Division of Engineering has attempted to meet the City's mission in the most cost-effective way possible. Most infrastructure projects are designed, managed, and inspected in-house by Engineering Division staff, keeping average fees for professional services at 4.05% for 2017. The industry average for design and professional engineering costs is 8% to 11% of the estimated construction costs. The value of engineering services provided by the Engineering Division for projects was over \$1,255,000 in 2017.

The Engineering Division managed over 30 infrastructure projects in 2017. The total dollar value of construction projects completed or under construction in 2017 was over \$16,600,000. Approximately 60% of the contracts finalized in 2017 came in at or under the contractors' bid price. The division diligently tracks and records quantities, materials stored and other aspects of construction management to ensure the city does not incur unjustified overages.

The Engineering Division is responsible for managing the replacement and improvement of the City's infrastructure. Including construction and development in 2017, the City now has over 400 miles of piping in its utility system and over 130 miles of roadway in its transportation system; 70% of the utility infrastructure is greater than 20 years old.

The Engineering Division also reviews and issues permits for all utility and site work construction activity in the City, as well as enforcing the City's Site Development Regulations and Storm Water Management Regulations. 185 permits were issued in 2017 compared to 197 in 2016.

The Engineering Division is also the City's representative for the Ohio Utilities Protection Service and is responsible for locating and marking all city-owned utilities whenever requested by contractors and proposed development. These requests have consistently numbered over 2000 each year since 1991. In 2017 our staff processed 2,767 OUPS requests. Per state law, not only are we responsible for physically marking the locations, we also are responsible for responding to requests electronically. The Engineering Division along with PPM traffic use WEBTMS software to note whether the locations have been marked, no conflict or a design ticket.

The Engineering Division is also responsible for all mapping, parcel data, addressing, utility information, and traffic control data that is contained in the City's Geographic Information System, or GIS. This information is updated and used on a daily basis for project planning, design, and maintenance of the City's infrastructure.

Division of Engineering Mission Statement and Objectives

Mission: Our mission in the City of Wooster, Division of Engineering is to plan, advise, administer, oversee implementation of and document all public works improvements and subdivision development with the aim of providing these services cost effectively and timely while protecting the public health, safety, and welfare.

2018 Objectives: To continue to manage the City's infrastructure construction and documentation in a way that will provide adequate service to residents, sustain development, and allow for intelligent infrastructure planning. The Division of Engineering attempts to balance the infrastructure needs of the city with the financial resources available. At the same time, current and future development and its associated demands are considered when attempting to develop a strategic plan for infrastructure improvements. The Division strives to provide design engineering services and construction monitoring to keep the outside engineering costs below the 8.5% industry average. We accomplished this goal in 2017 with a 4.05% average.

Personnel:

<i>Name</i>	<i>Title</i>	<i>Years Experience</i>
Roger Kobilarcsik	City Engineer, Licensed Professional Engineer	28
John Rice	Staff Engineer, Licensed Professional Engineer	11
Amy Hamilton	Administrative Assistant/Contract Specialist	1
Lance Cole	Project Manager	25
Spencer Gray	Engineering Technician/Drafter	33
Andy Gregory	Engineering Technician/GIS Technician	11
Dave Case	Inspector II, Assoc. Degree Civil Eng. Technology	24
Matt Hill	Inspector II, ODOT Right-of-Way Certification	33
Tim Leach	Inspector II, Assoc. Degree Civil Eng.	8

Operations:

O&M costs have remained steady over the past several years. The Division is on a regular schedule for replacing and/or upgrading computer equipment. The cost is spread out over two years; 2015 saw the replacement of 5 employees' computers, and in 2016 we purchased 2 computers. The three Surface Pro 3 Tablets purchased in late 2015 are now in the field and being used by inspectors to access the GIS system and inspection software.

Capital:

The current system of infrastructure project prioritization is primarily reactive. Capital improvement projects are currently implemented as portions of the system fail, in response to regulatory mandates, in an effort to avoid lawsuits, or are complaint driven. Funds are limited and the result is that the most needed projects are not always addressed.

Wooster's Infrastructure Strategic Plan indicates the following funding needs:

- ▶ 89 projects planned for construction from 2018-2022
- ▶ \$23,254,000 in Roadway
- ▶ \$6,995,000 in Water
- ▶ \$5,455,000 in Sewer
- ▶ \$3,130,000 in Storm

The most pressing needs within the next two years are as follows:

1. Water Distribution and Storage – Replacing existing mains and maintenance of water tanks
 - a. Funding Needs in 2018 = \$1,825,000
 - b. Funding Needs in 2019 = \$1,275,000
2. Sewer Collection – Lift Station upgrades
 - a. Funding Needs in 2018 = \$1,595,000
 - b. Funding Needs in 2019 = \$2,025,000
3. Roadways – Traffic signals, streetscape, road reconstruction
 - a. Funding Needs in 2018 = \$4,721,000
 - b. Funding Needs in 2019 = \$5,676,000
4. Storm Sewer – Culvert and storm sewer replacements
 - a. Funding Needs in 2018 = \$585,000
 - b. Funding Needs in 2019 = \$455,000

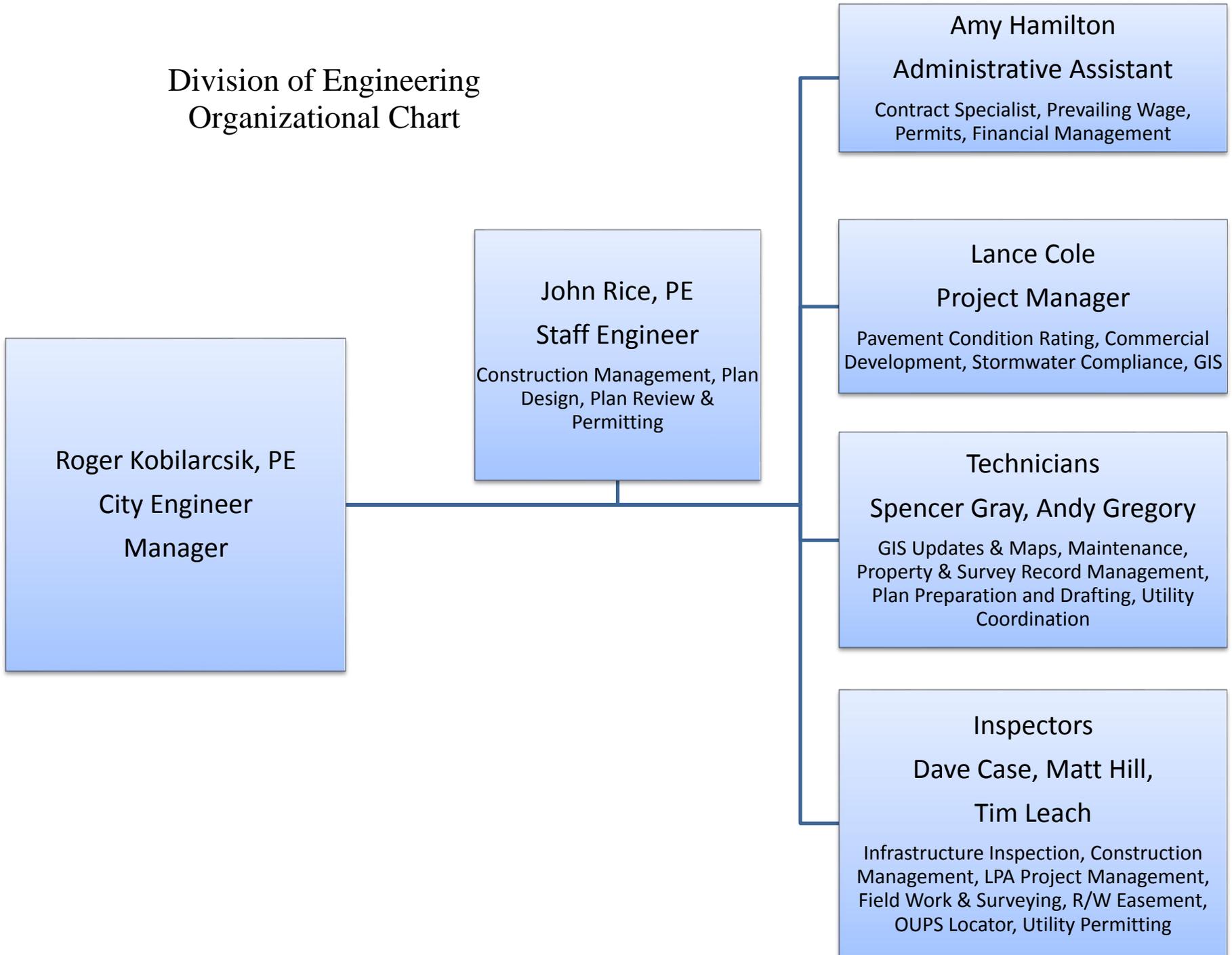
The Engineering Division aggressively seeks outside funding sources in an effort to offset the high costs of infrastructure improvements. The City was awarded \$1,358,000 in grant money in 2017 from various sources such as ODOT, OPWC, CDBG, and NatureWorks. These funds have been applied to water system projects, traffic signals, roadway (including reconstruction and resurfacing), and recreation projects.

The chart below details the actual dollars received from the various sources in 2017.

2017 Funding Received

PROJECT	BID PRICE	FINAL PROJECT COST	Funding Source	Funding Received
Burbank Road	\$1,727,435.00	\$1,824,374.00	OPWC	\$461,008.78
North Street Signals	\$505,300.00	\$471,640.00	CDBG	\$365,500.00
ODOT Paving FY17	\$630,294.00	\$558,308.00	ODOT	\$442,693.94
Pickleball	N/A	\$60,808.00	NatureWorks	\$26,421.00
Basketball	\$86,832.00	\$88,495.00	NatureWorks	\$62,385.00
				<u>\$1,358,008.72</u>
			Total Grant	\$1,358,008.72
			Total Loan	\$0.00

Division of Engineering Organizational Chart



Stormwater Management

The Division of Engineering is responsible for the City's Stormwater Management Plan and Municipal Separate Storm Sewer System (MS4) as mandated by the Ohio EPA. The program entails managing a minimum of six control measures.

- 1) **PUBLIC EDUCATION AND OUTREACH:** The City has formed and maintained a cooperative agreement with Wayne County Soil and Water Division (Wayne SWDC) to educate students and the general public in environmental conservation through programs such as Freddie the Fish, Groundwater Wonders, and Enviroscope. Kelly Riley, Education Specialist with the Wayne SWDC, taught more than 61 sessions last year through public school programs reaching more than 1,525 students and 1,612 adults. The programs provided 128 hours of education to the public. Riley also provided information and support through programs offered at the Wayne County Fair and the Ohio Agriculture Research and Development Center (OARDC) addressing such topics as conservation, pond maintenance, point source and non-point source pollution and Best Management Practices (BMPs).

The City has also continued several outreach programs to educate residents within the City. These programs included informational letters to residents that maintain septic systems within the City limits called HSTS, and educational flyers on an annual basis to residents who receive public water, storm and/or sanitary services. The City also maintains a public website that provides information to users about the City's stormwater system, how and where to dispose of materials that could impact public waterways and users can submit stormwater complaints via the web interface directly to the City Engineer and others involved.

- 2) **PUBLIC INVOLVEMENT AND PARTICIPATION:** The College of Wooster, OARDC and various service organizations partner with the City's Park Department in park clean-up activities, tree planting, and trail projects. Links are provided on our website for local information on recycling and connecting users to the Tri-County Waste Management Division. The City is actively looking for methods to increase public involvement and participation.
- 3) **ILLICIT DISCHARGE DETECTION AND EDUCATION:** The Engineering Division is responsible to locate, map and update the City's stormwater system onto the GIS. The Engineering Division is in the process of completing a comprehensive review of the existing data and making significant modifications to how data is stored to meet new Ohio EPA permit requirements. Comprehensive inventories of all public and private outfalls (discharge points of the stormwater system), culverts, HSTS and permanent Best Management Practices (BMP) are being completed to facilitate the management of these assets and compliance with Ohio EPA permits guidelines.

The City has formed a cooperative with the Wayne County Environmental Health Department to ensure compliance with Ohio EPA requirements pertaining to Home Septic Treatment Systems (HSTS) within the City. The Health Department performs regular inspections of the fifty-seven (57) identified systems within the City and ensures the owners are on a regular maintenance program. Non-complaint systems must connect to the

City sanitary network when available, initiate repairs when feasible or upgrade to a non-discharging system meeting current EPA requirements.

The City is maintaining numerous programs to aid in the detection, prevention, and monitoring of the stormwater system in terms of illicit discharge. These programs include; smoke testing of areas that have been identified as possible contributors of illicit discharge, regular inspection of more than 500 outfalls for signs of contamination, environmental stress, overall structural condition and proper function, video inspection of storm and sanitary systems to evaluate possible infiltration, along with damage and tree root infestation. The Engineering Division performs annual dry weather screenings to identify other areas possible requiring further investigation. A new flow monitoring program is being implemented by the City to establish baseline flow of natural and manmade drainage areas within the City. This monitoring can also be utilized in illicit discharge detection.

- 4) **CONSTRUCTION SITE RUN-OFF CONTROL:** This year seventeen (17) new National Pollution Discharge Elimination System NPDES permits were issued by the Ohio EPA for projects greater than one acre within the City of Wooster MS4. The Engineering Division is responsible for reviewing the plans for these permits, monitoring construction activities for new and previously issued permits and ensuring compliance with Ohio EPA regulations. The City project manager inspects and monitors an average of twenty (20) sites per month for compliance to their approved Storm Water Pollution Prevention Plan (SWP3), proper installation and maintenance of BMPs and issues notices of noncompliance and violation notices as needed to meet EPA regulations.

The Engineering Division is continuing the process of incorporating NPDES permit data into the City GIS system to assist in tracking the progress of active NPDES permits and provide historical data for previously issued permits. This effort is being undertaken to meet new requirements of the most recent issuance of the City's MS4 permit and Ohio EPA requirements.

- 5) **POST CONSTRUCTION STORMWATER MANAGEMENT:** The City has completed an inventory of known post-construction stormwater management controls totaling 194 units to date throughout the City. Ninety (90) percent of the units are located on private residential and commercial developments. cursory site visits have been performed by the City of all private units to evaluate the general condition of the stormwater controls and maintenance status. Approximately thirty (30) percent of the private units were found to be in need of extensive maintenance and/or repair, forty (40) percent are in need of general maintenance. Public units are inspected and maintained by the City on an annual basis.

The maintenance and inspection by the owner of post-construction stormwater management controls has been a requirement of the Ohio EPA general stormwater permit since 1992. In December 2016, the City was mandated by the Ohio EPA to enforce this requirement as units were not being maintained and resulting in substantial downstream impacts. During 2017 the City worked with the Ohio EPA to develop a program comprised of annual inspection reporting requirements by the owner to the City and professional engineering inspection requirements every five (5) years for which the engineer shall issue an engineering

certification and corrective requirements on behalf of the owner. This program will be implemented during 2018 and the first owner/professional inspection reports will need to be submitted to the City by May 31st of 2019.

- 6) **POLLUTION PREVENTION/GOOD HOUSEKEEPING:** In 2013 the City implemented a Stormwater Pollution Prevention Plan for the Wooster Service Center as part of the City's MS4 permit. The plan addresses service center activities, methods to minimize exposure, good housekeeping, spill prevention and response, management of surface water runoff, waste and garbage management and dust generation control. The plan is jointly managed by PPM and Engineering to implement training, inspections, documentation and meet compliance requirements. The Stormwater Pollution Prevention Plan for the Wooster Service Center is due for renewal in 2019. Several new quantifiable programs will be implemented to control salt application during the winter season and management of roadway sweeping waste to minimize environmental impacts.

During 2018/19 the City will continue to implement modifications to the stormwater management plan to meet current and forthcoming Ohio EPA requirements. These are outlined below:

- 1) February 2018 – Finalize the identification of post-construction stormwater management controls and determine ownership. Initial letters will be sent to the owners informing them of their obligations and reporting requirements.
- 2) March 2018 – New aerial imagery flight scheduled and data shall be utilized to update Estimated Storm Unit (ESU) calculations during the summer.
- 3) April 2018 – Ohio EPA to finalize the new Ohio General Stormwater Permit. The City will be required to implement the new requirements effective immediately upon issuance. The City has been informing contractors, developers and design firms of the forthcoming changes since the fall of 2017. The proposed major modifications to the permit include:
 - a. All new construction sites larger than one acre or part of a larger common development larger than one acre shall implement stormwater detention and water quality.
 - b. Redevelopment areas shall be required to reduce impervious area by 20%, provide 20% of the water quality volume by green infrastructure or provide 40% water quality volume for the site.
 - c. Only stormwater controls approved by the Ohio EPA shall be utilized. Although a method of having alternative methods approved by the Ohio EPA has been included
 - d. The calculation method to determine the site water quality volume is being revised to better represent real-world conditions.
 - e. Phased construction projects shall be required to meet current EPA stormwater requirement for each subsequent phase of construction. Additional detention or water quality volumes may be required within each phase of construction to meet these requirements.
- 4) May 2018 – Second notice to be sent to Owners of post-construction stormwater management controls informing them of their obligations and first required reporting to be completed by May 2019.

- 5) June to August 2018 – begin evaluation of estimated stormwater unit (ESU) calculations from new imagery for the determinate of the current City average ESU and billable ESUs for commercial sites.
- 6) July 2018 – Annual Ohio EPA audit and site visits.
- 7) December 2018 – To be in compliance with Ohio EPA requirements the City must have the following programs in place before December 31, 2018.
 - a. Submit a revised stormwater management plan addressing the new general permit requirements to be issued in April.
 - b. Finalize the post-construction stormwater management control inventory and inspection program.
 - c. Maintain an active and historical Ohio EPA general stormwater permit records and inspection data available in a physical or digital form.
 - d. Finalize implementation of the Home Septic Treatment Systems (HSTS) inventory within the City and ensure the units are on a scheduled maintenance program.
- 8) January 2019 – Notice sent to owners of post-construction stormwater management controls requesting 2018 maintenance and inspection records be submitted by May 31, 2019.
- 9) June 2019 – Owners who fail to provide the required post-construction stormwater management control inspections, maintenance and documentation shall be issued a Notice of Violation by the City and given 30 days to correct the issue. Failure to respond shall result in:
 - a. Loss of any stormwater ESU credits/discounts for one year for commercial establishments receiving these discounts.
 - b. The City shall retain a qualified individual to perform regular or professional inspections required and charge the owner(s) for these services via utility billing and/or tax assessment.
 - c. Provide the owner 30 days to complete any needed repairs prior to the City retaining a contractor to complete the work and bill/assess the owner(s).

2017 PROJECT NARRATIVE

The Engineering Division managed more than 30 various projects in 2017. Roadway and new building construction accounted for the majority of the \$16,000,000 in infrastructure improvements. The staff of nine designed, inspected and administered three waterline projects, six sanitary project, nine roadway projects, five storm sewer projects and seven miscellaneous projects.

The following pages give a brief synopsis of our 2017 infrastructure projects.



Safety Services Center
J.G. Johnson Construction

2017 Projects Completed or Under Construction

ROADWAY – SIDEWALK PROJECTS - (10 projects - \$4,660,443 Estimated Construction Costs)		
<p>2017 Paving</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Bid Date: October 2016 • Estimate: \$490,000 • Contractor: Kokosing • Bid Price: \$479,533 • Additional SCMR funds used to extend project • Final Cost: \$658,793 • Completed August 2017 	<p>2017 Paving – ODOT</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: ODOT & Local • Bid Date: December 2016 • Estimate: \$685,000 • Contractor: Kokosing • Bid Price: \$630,294 • Final Cost: \$558,308 • Completed August 2017 	<p>3426 Friendsville Rd Driveway Improvements</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Estimate: \$45,000 • Contractor: Stout Excavating • Quoted Price: \$44,681 • Final Cost: \$40,800 • Completed: October 2017
<p>Burbank Road Reconstruction - Waterline</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: OPWC & Local • Bid Date: July 2016 • Estimate: \$390,000 • Contractor: Fioritto • Bid Price: \$325,032 • Final Cost: \$406,855 • Completed: January 2017 	<p>Burbank Road Reconstruction - Roadway</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: OPWC & Local • Bid Date: April 2017 • Estimate: \$1,885,000 • Contractor: G.E. Baker • Bid Price: \$1,402,403 • Final Cost: \$1,417,519 • Completed: December 2017 	<p>Curb Ramp Replacement</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Estimate: \$30,778 • Contractor: T.R. Snyder • Quoted Cost: \$22,653 • Final Cost: \$10,314 • Completed: October 2017
<p>Freedlander Road Rehabilitation</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Estimate: \$42,665 • Contractor: TR Snyder/Melway Paving • Quoted Cost: \$59,350 • Final Cost: \$36,577 • Completed: November 2017 	<p>Liberty Street Signals</p> <ul style="list-style-type: none"> • Designed: Poggemeyer • Funding: CDBG & Local • Bid Date: September 2017 • Estimate: \$730,000 • Contractor: Perram Electric • Bid Price: \$756,176.50 • Under Construction 	<p>North Street Traffic Signals</p> <ul style="list-style-type: none"> • Designed: Poggemeyer • Funding: CDBG & Local • Bid Date: August 2016 • Estimate: \$600,000 • Contractor: Perram Electric • Bid Price: \$505,300 • Final Cost: \$471,640 • Completed July 2017

2017 Projects Completed or Under Construction

ROADWAY – SIDEWALK PROJECTS -

Timken/Madison Intersection

- Designed: Engineering
- Funding: Local
- Estimate: \$18,500
- Contractor: TR Snyder
- Quoted Cost: \$18,000
- Final Cost: \$17,826
- Completed: November 2017



2017 Projects Completed or Under Construction

WATER PROJECTS

(3 projects - \$747,340 Estimated Construction Costs)

Catalina & Skylark Waterlines

- Designed: Engineering
- Funding: Local
- Bid Date: February 2017
- Estimate: \$460,000
- Contractor: Dirt Dawg
- Quoted Cost: \$351,747
- Final Cost: \$347,296
- Completed: June 2017

Northview Drive Waterline

- Designed: Engineering
- Funding: Local
- Bid Date: February 2017
- Estimate: \$150,000
- Contractor: Dirt Dawg
- Quoted Cost: \$154,933
- Final Cost: \$145,177
- Completed: June 2017

North Well Field Check Valve Replacement

- Designed: Engineering
- Funding: Local
- Bid Date: April 2017
- Estimate: \$200,000
- Contractor: Dirt Dawg/Spring Electrical
- Quoted Cost: \$254,242
- Final Cost: \$254,867
- Completed: November 2017



2017 Projects Completed or Under Construction

SANITARY PROJECTS

(6 projects - \$1,299,500 in Estimated Construction Costs)

<p>Brookside Drive Sanitary Sewer Lining</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Bid Date: September 2017 • Estimate: \$140,000 • Contractor: Insituform • Bid Price: \$82,348 • Final Cost: \$89,494 • Completed: December 2017 	<p>E. Henry & Minerva Sanitary Sewer Replacement</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Estimate: \$22,000 • Contractor: Dirt Dawg • Quoted Cost: \$11,230 • Under construction 	<p>E. University Sanitary</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Estimate: \$95,000 • Contractor: Dirt Dawg • Quoted Cost: \$44,344 • Under construction
<p>Manhole Replacements</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Estimate: \$25,000 • Contractor: Wenger Excavating • Quoted Cost: \$22,722 • Under construction 	<p>Nupp Drive Lift Station</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Bid Date: August 2017 • Estimate: \$350,000 • Contractor: Simonson Construction • Bid Price: \$320,245 • Under construction 	<p>S. Spink St. & Gasche St. Sewer Separation</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: OPWC & Local • Bid Date: June 2017 • Estimate: \$667,500 • Contractor: Stout Excavating • Bid Price: \$579,547 • Under construction



2017 Projects Completed or Under Construction

STORM SEWER PROJECTS

(5 projects - \$354,700 Estimated Construction Costs)

<p>Bowman Culvert Repair</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Estimate: \$21,500 • Contractor: T.R. Snyder • Quoted Price: \$18,610 • Final Cost: \$27,959 • Completed: October 2017 	<p>CSO Outlet</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Estimate: \$6,200 • Contractor: Stout Excavating • Quoted Price: \$6,700 • Final Cost: \$6,700 • Completed: May 2017 	<p>Dix Culvert Lining</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Bid Date: December 2016 • Estimate: \$200,000 • Contractor: GE Baker • Bid Price: \$105,720 • Final Cost: \$102,984 • Completed: May 2017
<p>Geyers Chapel Culvert Replacement</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Bid Date: July 2017 • Estimate: \$125,000 • Contractor: Bogner Construction • Bid Price: \$123,117 • Final Cost: \$120,518 • Completed: November 2017 	<p>Lagoon Culvert Repair</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Estimate: \$7,000 • Contractor: Stout Excavating • Quoted Price: \$6,200 • Final Cost: \$5,211 • Completed: September 2017 	



Geyers Chapel Culvert Replacement
Bogner Construction Company

2017 Projects Completed or Under Construction

MISCELLANEOUS PROJECTS (7 projects - \$9,304,770 Estimated Construction Costs)

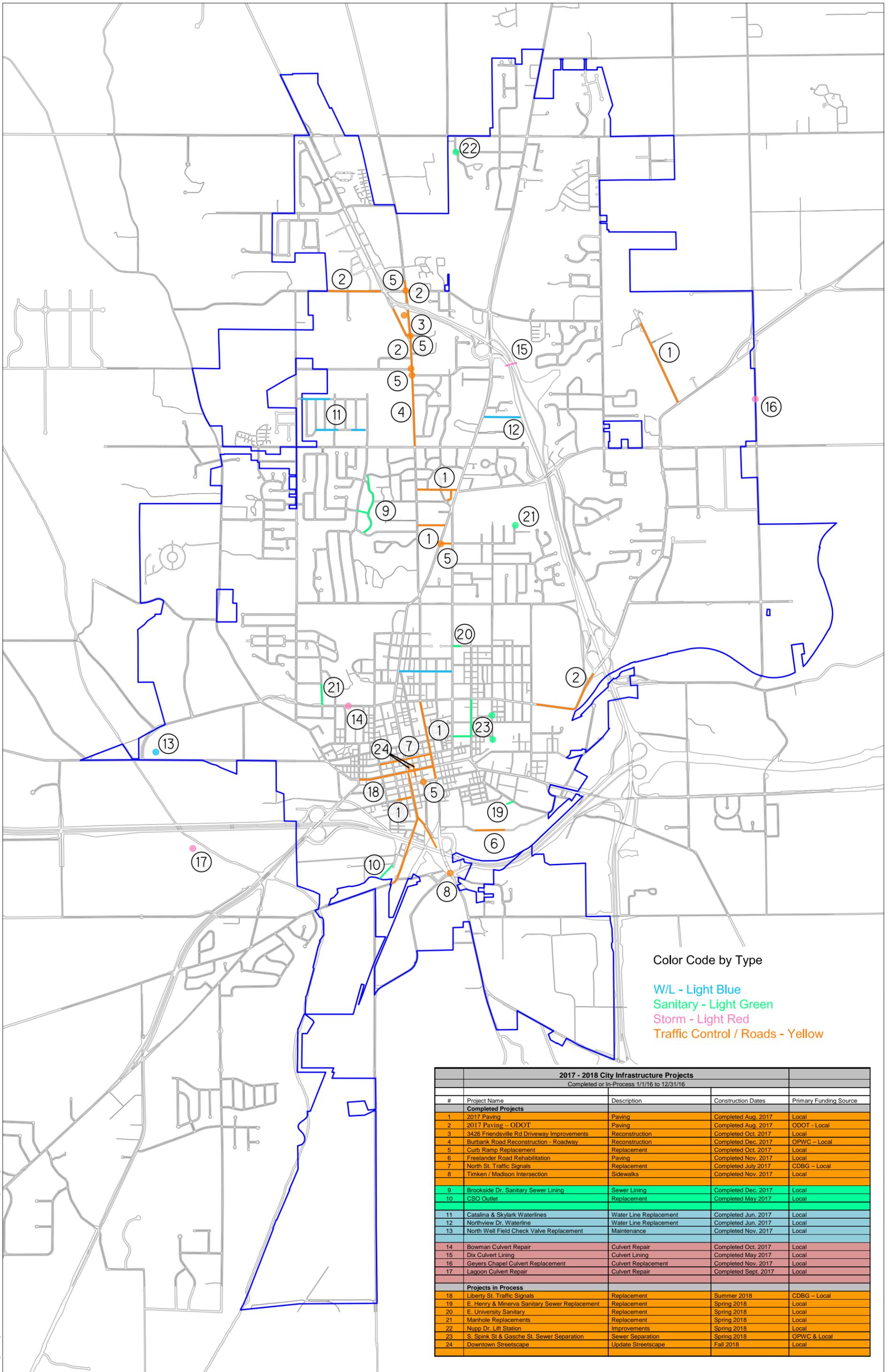
<p>Christmas Run Basketball Courts</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: ODNR & Local • Bid Date: August 2016 • Estimate: \$65,000 • Contractor: TR Snyder • Bid Price: \$86,832 • Final Cost: \$88,495 • Completion Date: April 2017 	<p>Christmas Run Pickleball Courts</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: ODNR & Local • Estimate: \$39,000 • Contractor: Various vendors • Final Cost: \$60,808 • Completion Date: October 2017 	<p>Downtown Streetscape</p> <ul style="list-style-type: none"> • Designed: OHM • Funding: Local • Bid Date: July 2017 • Estimate: \$1,695,000 • Contractor: Simonson • Bid Price: \$1,504,506 • Under Construction
<p>PNC Bank Parking Lot</p> <ul style="list-style-type: none"> • Designed: Engineering • Funding: Local • Estimate: \$18,000 • Contractor: TR Snyder • Quoted Price: \$15,806 • Final Cost: \$17,970 • Completion Date: 	<p>Safety Services Building</p> <ul style="list-style-type: none"> • Architect: Bowen & Associates • Funding: Local • Estimate: \$7,000,000 • Contractor: John G. Johnson • Bid Price: \$7,570,637 • Completion Date: August 2017 	<p>Utilities Building Addition</p> <ul style="list-style-type: none"> • Designed: BA Widder • Funding: Local • Bid Date: November 2016 • Estimate: \$425,000 • Contractor: CCI • Bid Price: \$465,885 • Final Cost: \$579,303 • Completion Date: August 2017
<p>Welcome Signs</p> <ul style="list-style-type: none"> • Designed: OHM • Funding: Local • Estimate: \$44,270 • Contractor: Bogner Construction • Quoted Price: \$34,250 • Under Construction 		

Christmas Run Park Basketball Courts

INFRASTRUCTURE PROJECTS SCHEDULED/PLANNED FOR 2018:

1. **SRTS –Sunset/Armstrong Sidewalk:** The Engineering Division is applying for ODOT funding to complete the sidewalks in the Melrose Elementary area. Plans will be developed if funding is awarded and construction is projected to begin in 2020.
2. **Downtown Streetscape:** Simonson Construction Services was awarded the contract for this project and construction is planned to begin in 2018. The estimate for construction is \$1,850,000. The project will construct new streetscape features in the NE Quadrant, the first two alleys east of the square, and the area around the Wayne County courthouse along Market and Liberty Streets.
3. **Wooster Bike Loop – Phase 1:** This is a 2.1-mile construction of a dedicated 10' wide multi-use path for non-motorized transportation from Bloomington to Highland Avenue. The project is partially funded by ODOT. Poggemeyer Group is in the process of developing the final plans and specifications. A public meeting was held in December 2016 to discuss the preliminary plans and obtain suggestions from the community. Acquisition of easements and rights-of-way were completed in 2017. Utility relocations and construction will begin in 2018.
4. **Northwestern Sidewalks:** This project is being designed by the Engineering Division and consists of installing sidewalks on the west side of Northwestern Avenue between Parkview Drive and Hamilton Avenue. This project completes sidewalk construction in this area.
5. **Culvert Replacements:** Roadway culvert replacements or rehabilitations are scheduled for locations on Melrose Drive and W. Wayne Avenue. These will be designed by the Engineering Division.
6. **Dix Expressway Repairs:** The Engineering Division is working with ODOT to identify portions of the roadway that need to be repaired and seeking financial assistance for those repairs.
7. **Oakley/Brookside Waterline and Pavement Resurfacing:** The City has applied for funding through OPWC for the replacement of the waterlines on these streets as well as the resurfacing of the pavement. The estimated cost of the project is \$1,066,000, of which \$426,600 is requested from OPWC.
8. **Nupp Drive Lift Station:** This project was designed by the Engineering Division with a contract awarded to Simonson Construction Services. The project is currently underway and expected to be complete in late spring.
9. **Lemar Storm Sewer:** This project is being designed by the Engineering Division. The estimated costs for construction is \$85,000.
10. **S. Spink Street Sewer Separation:** This is a continuation of the OEPA mandated separation of storm and sanitary sewers. The Engineering Division completed the design portion of the project and the contract was awarded to Stout Excavating. Work on this project began late in 2017 and should be complete in May 2018.

11. **Liberty Street Traffic Signals:** The City obtained a Community Development Block Grant for replacement of traffic signals on West Liberty Street. Perram Electric started work on the project in December 2017 and should be done by the end of July 2018.
12. **SR 83 Resurfacing/ODOT Urban Paving Program:** ODOT plans to resurface SR 83 from the intersection with Milltown Road north to the city limits in 2018. The City's share of the cost is 20%, or approximately \$200,000, for this project.
13. **Concrete Street Repairs:** The following streets are scheduled to receive concrete repairs in 2018: Marilyn Drive, Mindy Lane, Country Club Drive, Normandy Drive, Patrick Place, Brooke Way, and Melanie Drive. Plans will be completed by the Engineering Division as well as construction inspection and administration of the project.
14. **Asphalt Street Repairs:** The following streets are scheduled to receive asphalt repairs in 2018: Skylark Avenue, Catalina Avenue, Monterey Street, Highland Park Road, Highland Avenue (Cleveland to Portage), and Graustark Path. Plans will be completed by the Engineering Division as well as construction, inspection, and administration of the project.
15. **Beaver Alley Sewer Separation:** This work is located in the alley behind Spoon Market and consists of new sanitary and storm sewers. The Engineering Division has completed the design work for the separation and the project will be bid out in early 2018.
16. **Madison Ave Signals:** Replacement of the traffic signal at SR 83 and Madison Avenue intersection. Burgess and Niple completed the design and the engineering estimate is \$145,000.
17. **W. Liberty Sanitary Sewer:** A new sanitary sewer is going to be installed to serve residents along West Liberty Street who previously were not connected to the municipal sewer. The Engineering Division will design, inspect, and administer the project.



Color Code by Type

- W/L - Light Blue
- Sanitary - Light Green
- Storm - Light Red
- Traffic Control / Roads - Yellow

2017 - 2018 City Infrastructure Projects				
Completed or In-Process 1/1/16 to 12/31/16				
#	Project Name	Description	Construction Dates	Primary Funding Source
Completed Projects				
1	2017 Paving	Paving	Completed Aug. 2017	Local
2	2017 Paving - ODOT	Paving	Completed Aug. 2017	ODOT - Local
3	3426 Friendsville Rd Driveway Improvements	Reconstruction	Completed Oct. 2017	Local
4	Burbank Road Reconstruction - Roadway	Reconstruction	Completed Dec. 2017	OPWC - Local
5	Curb Ramp Replacement	Replacement	Completed Oct. 2017	Local
6	Freelander Road Rehabilitation	Paving	Completed Nov. 2017	Local
7	North St. Traffic Signals	Replacement	Completed July 2017	CDBG - Local
8	Timken / Madison Intersection	Sidewalks	Completed Nov. 2017	Local
9	Brookside Dr. Sanitary Sewer Lining	Sewer Lining	Completed Dec. 2017	Local
10	CSO Outlet	Replacement	Completed May 2017	Local
11	Catalina & Skylark Waterlines	Water Line Replacement	Completed Jun. 2017	Local
12	Northview Dr. Waterline	Water Line Replacement	Completed Jun. 2017	Local
13	North Well Field Check Valve Replacement	Maintenance	Completed Nov. 2017	Local
14	Bowman Culvert Repair	Culvert Repair	Completed Oct. 2017	Local
15	Dix Culvert Lining	Culvert Lining	Completed May 2017	Local
16	Gevers Chapel Culvert Replacement	Culvert Replacement	Completed Nov. 2017	Local
17	Lagoon Culvert Repair	Culvert Repair	Completed Sept. 2017	Local
Projects in Process				
18	Liberty St. Traffic Signals	Replacement	Summer 2018	CDBG - Local
19	E. Henry & Minerva Sanitary Sewer Replacement	Replacement	Spring 2018	Local
20	E. University Sanitary	Replacement	Spring 2018	Local
21	Manhole Replacements	Replacement	Spring 2018	Local
22	Nupp Dr. Lift Station	Improvements	Spring 2018	Local
23	S. Sprink St & Gasche St. Sewer Separation	Sewer Separation	Spring 2018	OPWC & Local
24	Downtown Streetscape	Update Streetscape	Fall 2018	Local

Private Developments

1. Private Subdivisions/Commercial Property under Construction:

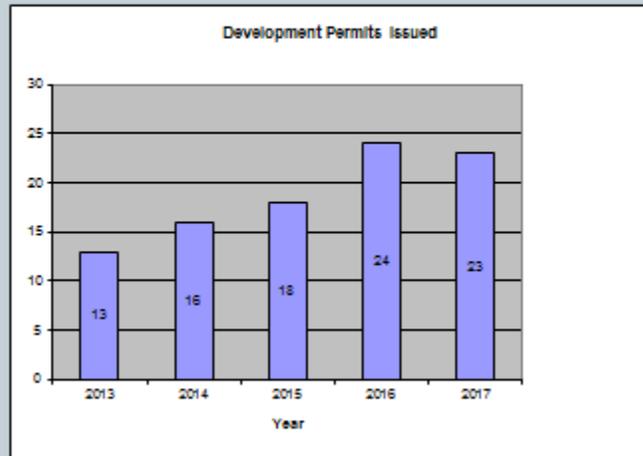
The Engineering Division saw just one fewer Development Permit issued in 2017 (23) as compared to 2016 (24). Several parking lot expansions as well as additions to existing facilities made up a majority of the work. The City issued 23 development permits in 2017..

LuK continued its expansion with a transfer switch and substation, while AEP is constructing a brand new substation along State Route 585 and service center on Long Road. Comfort Suites is building a new hotel in the south end of Wooster and the 48,000 square foot Aspen Racquet Club was also completed in 2017.

All private developments required oversight and permit approval from the City Engineering Division for compliance with the Wooster Site Development and Improvement Regulations. The Engineering Division reviews all plans and provided inspection of all these developments.

City of Wooster Engineering Development Permits						2017
DEVELOP. #	PERMIT NO.	PROJECT NO.	NAME / DESCRIPTION	SITE IMP.S COST ESTIMATE	PLAN REVIEW FEE	DATE RECEIVED
1	2017001	#163067	Comfort Suites	\$7,000,000	\$ 1,328.06	01/05/17
2	2017002	#173071	Wakefield Insurance	\$ 3,000	\$ 150.00	01/24/17
3	2017003	#173018	Taco Bell	\$680,000	\$ 2,526.68	02/16/17
4	2017004	#163071	OSU Residence Hall	n/a	\$ 1,484.20	03/01/17
5	2017005	#163067	Comfort Suites	n/a	\$ 5,378.45	03/10/17
6	2017006	#173072	Project Cardinal (Daisy)	\$580,000	\$ 5,544.03	03/17/17
7	2017007	#173073	Montessori School		\$ 921.80	03/30/17
8	2017008	#173022	COW Stevenson Hall	\$4,700,000	\$ 2,733.88	05/04/17
15	81155	#173034	Summit Motorcars	\$ 50,000	\$ 1,114.20	06/01/17
9	2017009	#173074	Luk Storage Building	\$ 174,000.00	\$ 150.00	06/02/17
10	2017010	#173024	Baseball & Softball Fields - Wooster City Schools	\$ 87,850.00	\$ 150.00	06/12/17
12	2017012	#173075	GoJo Industries Campus Track Improvements	\$620,000	\$ 1,684.00	06/16/17
11	2017011	#173026	Goo Goo Car Wash	\$2,000,000	\$ 3,552.50	06/19/17
13	80331	#173027	Wayne Mutual Parking Lot	\$ 62,000.00	\$ 242.20	07/14/17
14	80484	#173028	Cornerstone Elem. NE Parking Expansion	\$ 35,000	\$ 668.35	08/02/17
22	82740	#173029	Aspen Racquet Club Tennis Court	\$ 150,000.00	\$ 10,237.27	08/02/17
18	81993	#173047	Akron Road Bellstores	\$ 1,000,000	\$ 1,761.70	10/12/17
16	81795	#173049	Village Network Gymnasium	\$ 250,000	\$ 1,430.55	10/25/17
17	81807	#173050	WCH Parking Lot Extension	\$150,000	\$ 150.00	10/25/17
19	82063	#173051	LuK Transfer Switch & Substation	\$ 3,000,000.00	\$ 1,788.53	10/25/17
20	81495	#173052	AEP Substation Service Center	\$ 7,000,000.00	\$ 17,549.60	10/25/17
21	82179	#173053	Western Reserve Parking Lot Expansion	\$ 20,000.00	\$ 829.88	10/25/17
23	83118	#173068	Shoppes at Burbank Outparcel	\$ 635,500.00	\$ 1,641.45	12/06/17
				\$28,197,350	\$ 63,017.33	

2013 – 2017 Development Permits



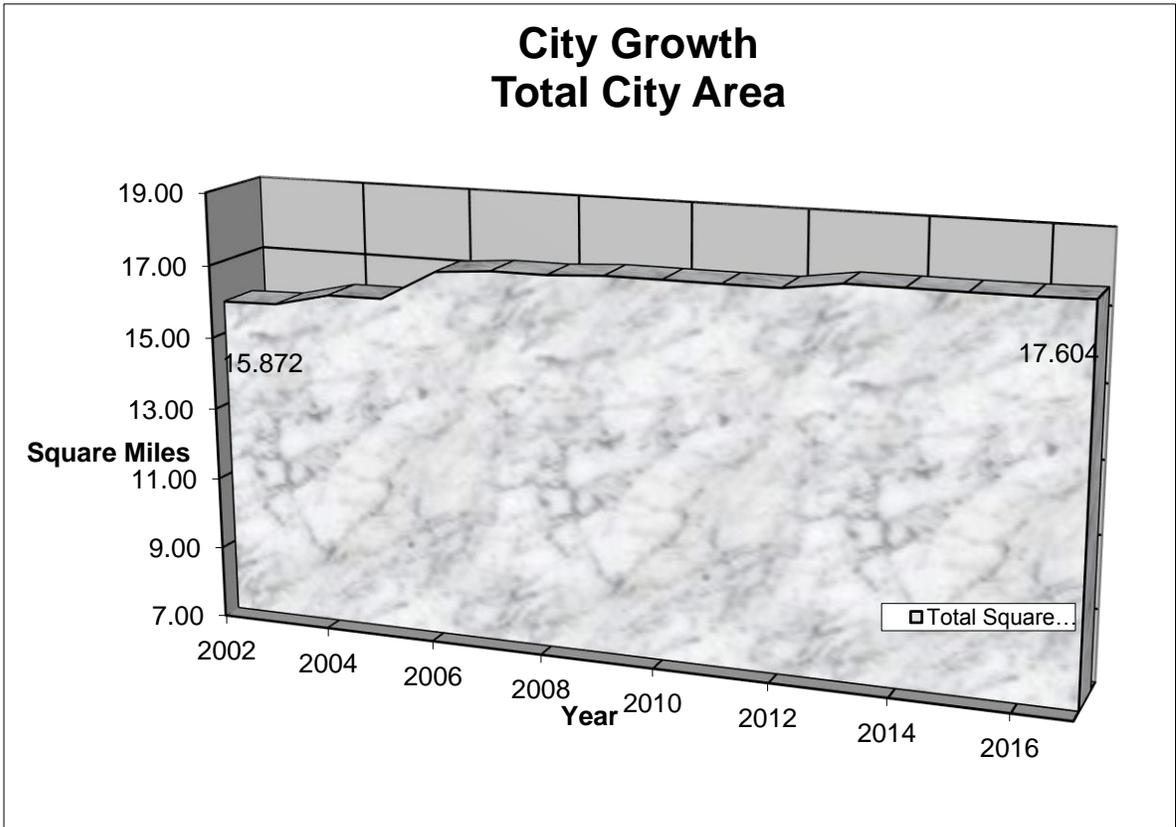
ENGINEERING FEES AND REVENUES :

The following chart details the revenues received the past few years by the Division of Engineering.

	2013	2014	2015	2016	2017
Single Inspection	\$21,338.26	\$10,478.20	\$19,800.00	\$9,650.00	\$7,450.00
Construction Inspection	\$50,476.60	\$114,642.28	\$58,105.03	\$97,105.93	\$21,826.81
Plan Review Fee	\$14,160.00	\$10,480.00	\$12,960.00	\$11,680.00	\$63,017.33
Plan Copies	\$4,634.54	\$4,213.25	\$5,489.15	\$3,713.10	\$3,140.13
Yard Pipe Permit	\$160.00	\$0.00	\$160.00	\$240.00	\$0.00
Sanitary Sewer Permit	\$480.00	\$480.00	\$960.00	\$480.00	\$320.00
San. Sewer Availability Charge	\$25,740.00	\$7,584.00	\$47,746.56	\$4,522.00	\$51,538.96
Water Availability	\$25,461.00	\$704.00	\$50,300.80	\$24,008.16	\$5,066.60
Water Service Permit	\$1,400.00	\$640.00	\$800.00	\$640.00	\$240.00
Development Permit Waiver	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TOTAL FEES COLLECTED	\$143,850.40	\$149,221.73	\$196,321.54	\$152,039.19	\$152,599.83

Division of Engineering
City of Wooster
2017 Annual Report

City Growth Statistics – Section 2



Year	City Population		City Area	City Streets
1990	22,427	(a)	12.822 Sq. Mi.	106.42 Miles
2000	24,811	(a)	15.767 Sq. Mi.	120.41 Miles
2010	26,119	(a)	17.334 Sq. Mi.	133.10 Miles
2011	26,397	(b)	17.334 Sq. Mi.	133.10 Miles
2012	26,677	(b)	17.336 Sq. Mi.	133.10 Miles
2013	26,961	(b)	17.557 Sq. Mi.	133.78 Miles
2014	27,247	(b)	17.557 Sq. Mi.	133.78 Miles
2015	27,537	(b)	17.557 Sq. Mi.	133.78 Miles
2016	27,830	(b)	17.567 Sq. Mi.	133.78 Miles
2017	27,023	(c)	17.604 Sq. Mi.	135.33 Miles

(a) Census

(b) Estimated from Housing Starts

(c) This figure comes from the Census Bureau and does not include a full count of undergraduate students at the College of Wooster and ATI.

2017 Annexations

No.	Description	Date	Area
1	W Highland Ave	4/4/2017	4.49 Acres
2	2114 Oak Hill Rd	6/6/2017	0.56 Acre
3	3755 Long Rd	12/19/2017	89.51 Acres

City Area

Year	Increases (Acres)	Total Acres	Total Square Miles	% Increase
1965	0.000	4,966.400	7.760	0.000
1966	648.890	5,615.290	8.774	13.066
1967	0.000	5,615.290	8.774	0.000
1968	0.000	5,615.290	8.774	0.000
1969	331.550	5,946.840	9.292	5.904
1970	62.470	6,009.310	9.390	1.050
1971	0.000	6,009.310	9.390	0.000
1972	181.810	6,191.120	9.674	3.025
1973	54.380	6,245.500	9.759	0.878
1974	173.858	6,419.358	10.030	2.784
1975	4.000	6,423.358	10.036	0.062
1976	19.532	6,442.890	10.067	0.304
1977	25.032	6,467.922	10.106	0.389
1978	79.990	6,547.912	10.231	1.237
1979	56.819	6,604.731	10.320	0.868
1980	3.000	6,607.731	10.325	0.045
1981	135.195	6,742.926	10.536	2.046
1982	2.730	6,745.656	10.540	0.040
1983	47.046	6,792.702	10.614	0.697
1984	148.203	6,940.905	10.845	2.182
1985	0.000	6,940.905	10.845	0.000
1986	45.319	6,986.224	10.916	0.653
1987	0.000	6,986.224	10.916	0.000
1988	187.711	7,173.935	11.209	2.687
1989	1,031.835	8,205.770	12.822	14.383
1990	0.000	8,205.770	12.822	0.000
1991	541.763	8,747.533	13.668	6.602
1992	166.072	8,913.605	13.928	1.899
1993	160.949	9,074.554	14.179	1.806
1994	1.080	9,075.634	14.181	0.012
1995	0.000	9,075.634	14.181	0.000
1996	23.626	9,099.260	14.218	0.260
1997	123.047	9,222.307	14.410	1.352
1998	40.564	9,262.871	14.473	0.440
1999	610.865	9,873.736	15.428	6.595
2000	217.389	10,091.125	15.767	2.202
2001	2.781	10,093.906	15.772	0.028
2002	64.491	10,158.397	15.872	0.639
2003	24.120	10,182.517	15.910	0.237
2004	226.640	10,409.157	16.264	2.226
2005	11.090	10,420.247	16.282	0.107
2006	537.062	10,957.309	17.121	5.154
2007	78.780	11,036.089	17.244	0.719
2008	0.000	11,036.089	17.244	0.000
2009	57.450	11,093.539	17.334	0.521
2010	0.000	11,093.539	17.334	0.000
2011	0.000	11,093.539	17.334	0.000
2012	1.61	11,095.149	17.336	0.015
2013	141.202	11,236.351	17.557	1.273
2014	0	11,236.351	17.557	0.000
2015	0	11,236.351	17.557	0.000
2016	6.69	11,243.041	17.567	0.060
2017	94.56	11,266.75	17.604	0.842

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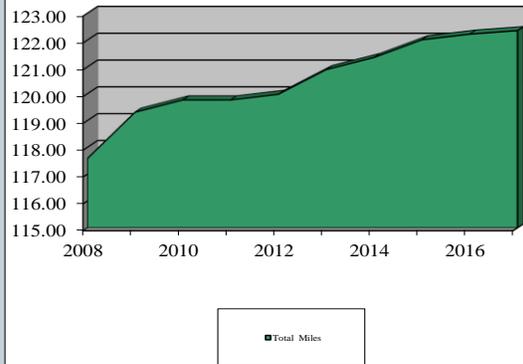
Utility Statistics – Section 3

Sanitary Sewer Mileage

Sanitary Sewer Mileage

Year	Increase in Miles	Total Miles	% Increase
		117.44	
2008	0.14	117.58	0.12%
2009	1.73	119.31	1.47%
2010	0.46	119.77	0.39%
2011	0.00	119.77	0.00%
2012	0.21	119.98	0.18%
2013	0.92	120.90	0.77%
2014	0.45	121.35	0.37%
2015	0.66	122.01	0.54%
2016	0.21	122.22	0.17%
2017	0.13	122.35	0.11%

Sanitary Sewer Total Mileage

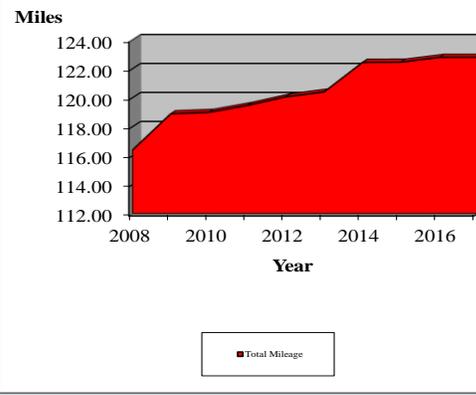


Storm Sewer Mileage

Storm Sewer Mileage

Year	Increase in Miles	Total Mileage	% Increase
		115.63	
2008	0.75	116.38	0.65%
2009	2.51	118.89	2.16%
2010	0.10	118.99	0.08%
2011	0.48	119.47	0.40%
2012	0.59	120.06	0.49%
2013	0.34	120.40	0.28%
2014	2.04	122.44	1.69%
2015	0.01	122.45	0.01%
2016	0.33	122.78	0.27%
2017	0.00	122.78	0.00%

Storm Sewer Total Miles



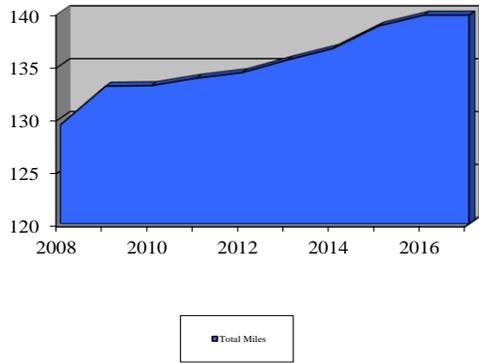
Waterline Mileage



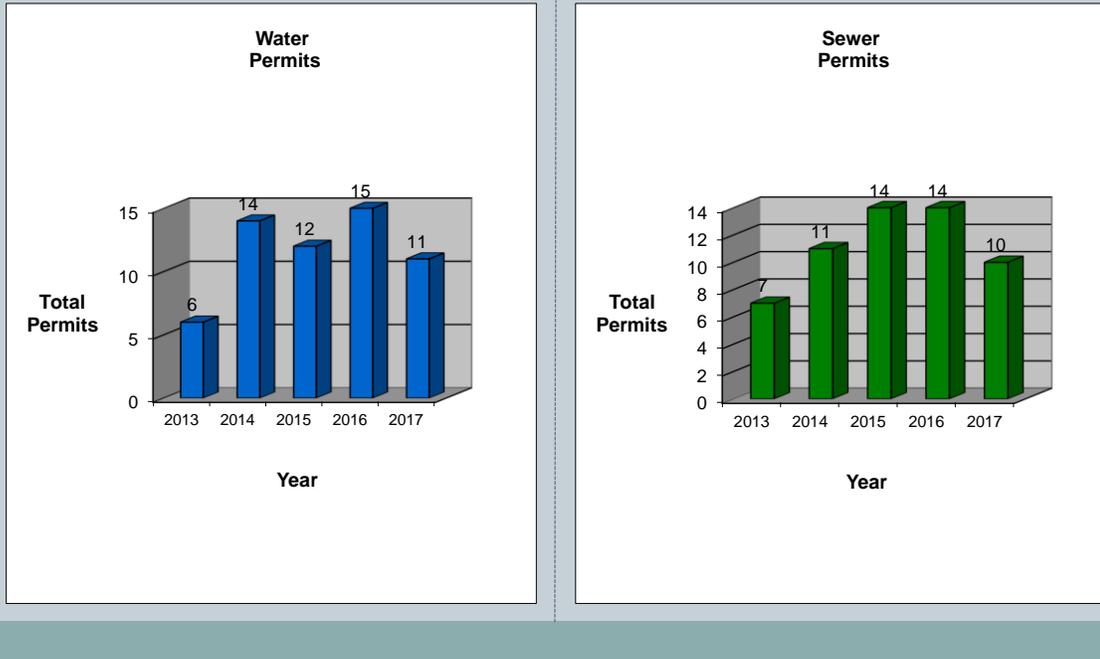
Waterline Mileage

Year	Increase in Miles	Total Miles	% Increase
		124.45	
2008	0.71	129.35	0.55%
2009	3.68	133.03	2.84%
2010	0.05	133.08	0.04%
2011	0.71	133.79	0.53%
2012	0.52	134.31	0.39%
2013	1.20	135.51	0.89%
2014	1.08	136.59	0.80%
2015	2.12	138.71	1.55%
2016	1.04	139.75	0.75%
2017	0.00	139.75	0.00%

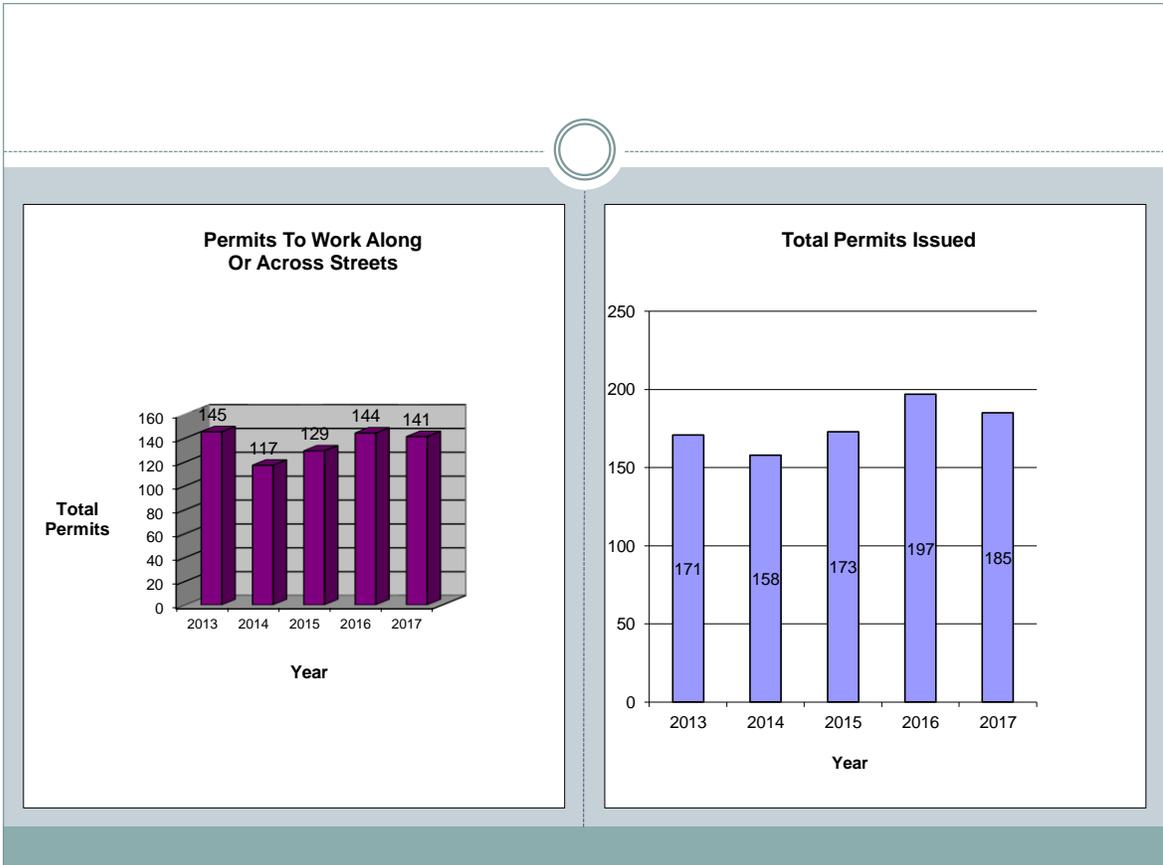
Waterline Total Mileage



2017 Permits



Water and Sewer Permits remain fairly level throughout the years. Permits are issued for these utilities for any new development or whenever the need for a replacement or repair becomes necessary to a homeowner or business. Our inspectors are on site to make sure the contractor follows the City's Standards and help the contractor with any questions or problems that might arise during the project.



Dominion East Ohio Gas continues to be the primary company obtaining Right-of-Way Permits. The company is in the process of improving their infrastructure throughout the city and replacing their main lines. Right-of-way permits are required any time there will be work along the City's streets and/or across the street. This ensures that the City can monitor restoration of the area after the contractor has completed the project.

2017 Water Main Leaks

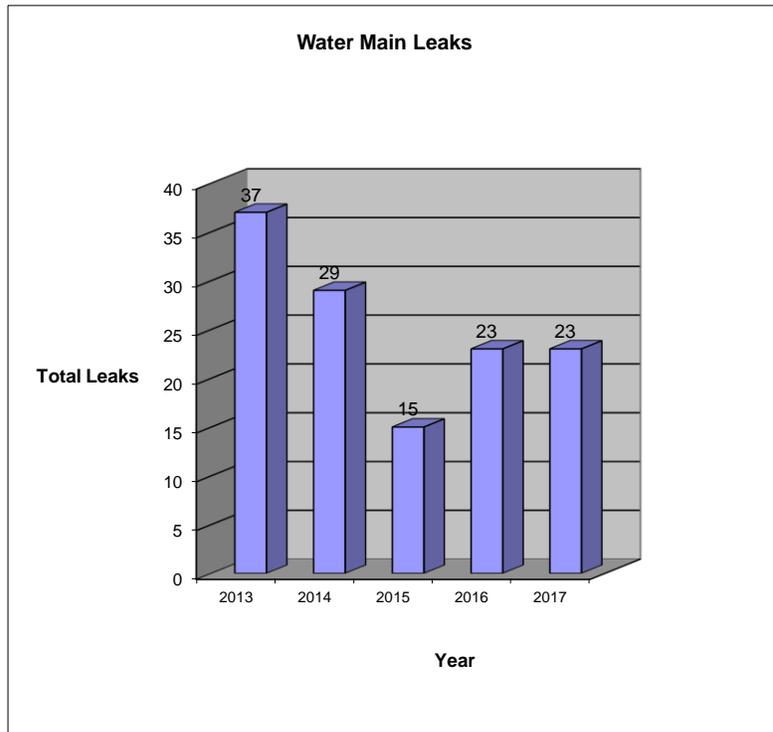
The City currently maintains over 138 miles of waterline.

Waterline replacements for 2017 include the areas of:

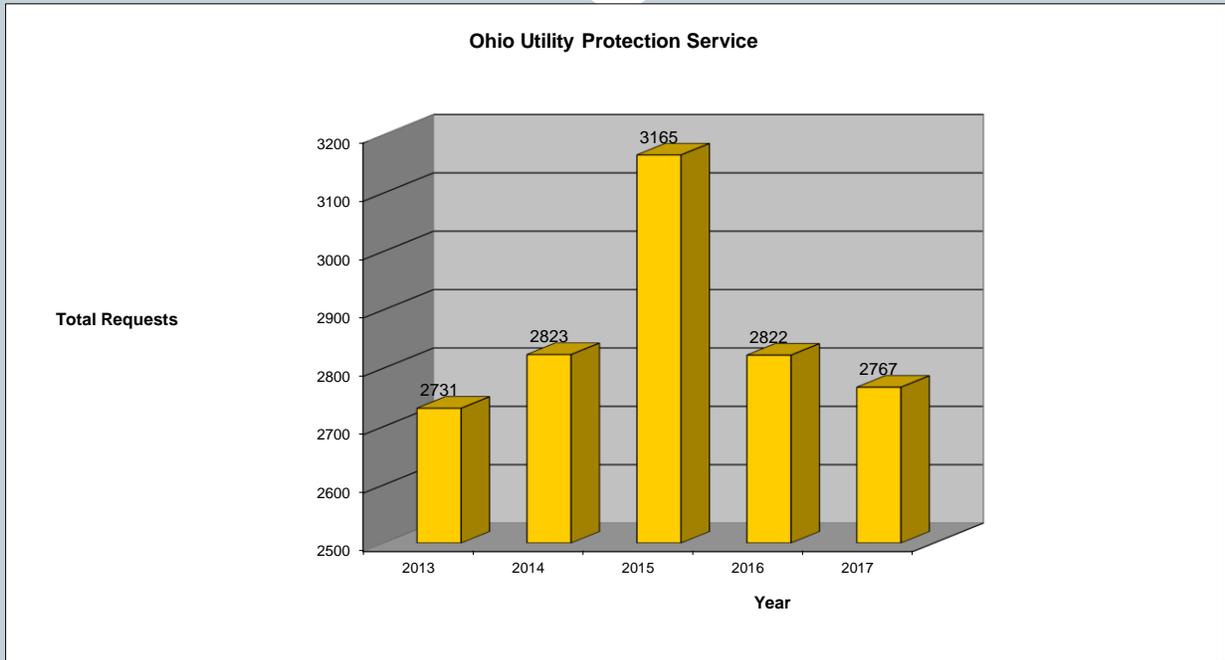
Northview Drive

Catalina Avenue

Skylark Avenue



2017 OUPS



OUPS location notices continue to increase as more and more contractors and residents call 811 to notify the Ohio Utilities Protection Agency of anticipated digging. Our inspector marks the requests within 48 hours of receiving the notice if any of the city’s utilities would be affected by the excavation. Our inspector is also responsible for emergency OUPS locations such as water line breaks or gas line ruptures. Each notification is also recorded in the WEBTMS software which tracks the notifications and the positive response (outcome) for each ticket.

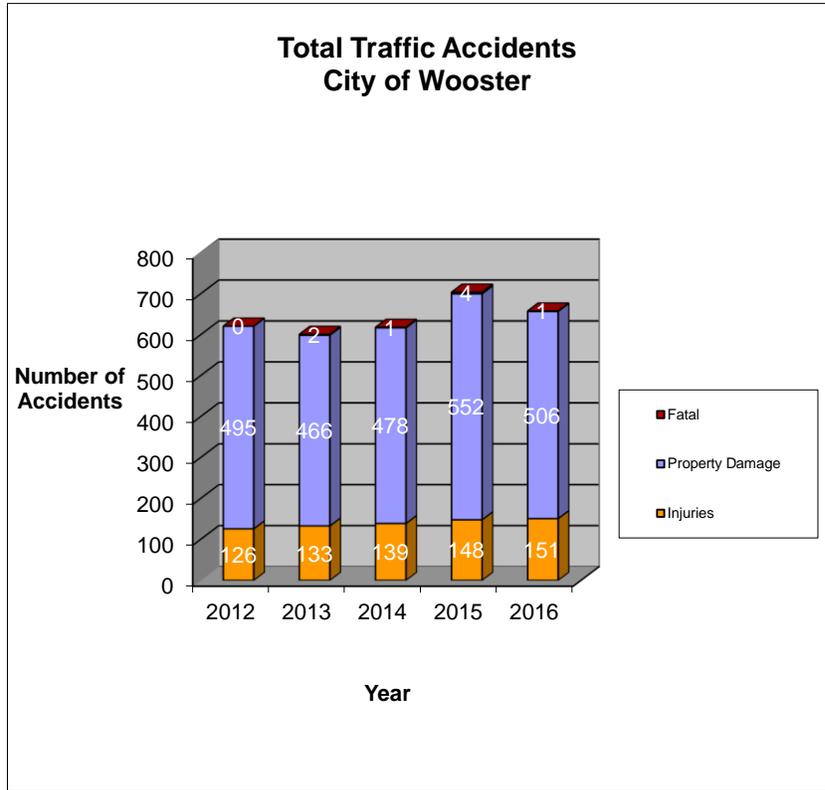
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Traffic Statistics – Section 4



2012-2016 Comparison

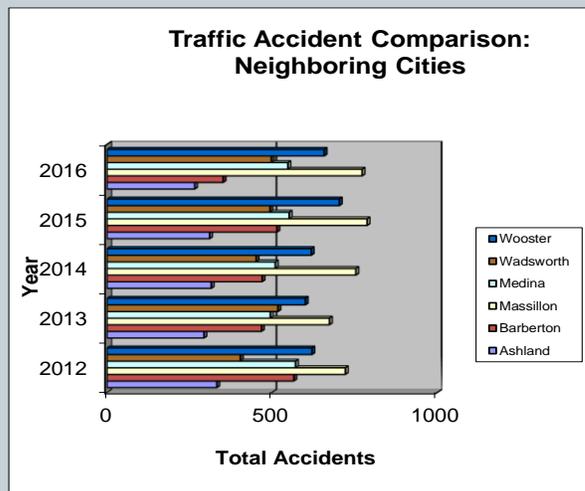
Data is compiled from the Ohio Department of Public Safety's "Ohio Traffic Crash Facts"



2012-2016 Total Crashes

**Traffic Accident Comparison
Totals By Neighboring Cities**

Year	Ashland	Barberton	Massillon	Medina	Wadsworth	Wooster
2012	333	566	722	571	404	621
2013	294	468	674	495	518	601
2014	316	470	754	510	452	619
2015	311	515	788	552	494	704
2016	266	352	773	548	498	658

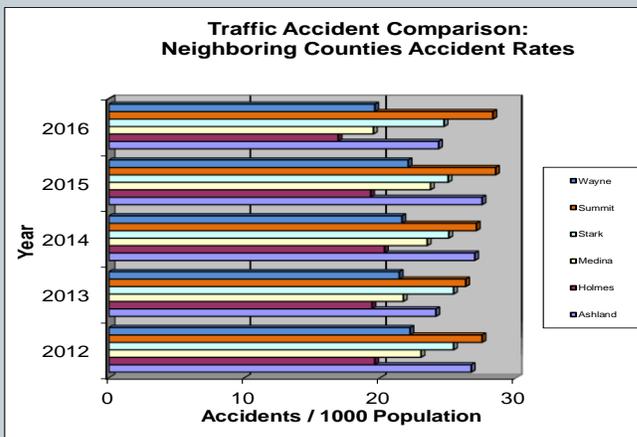


County Crash Comparison

**Rates per 1000 based on
2010 U.S. Census**

**Traffic Accident Comparison
Rates by Neighboring Counties**

Year	Accidents Per 1000 People					
	Ashland	Holmes	Medina	Stark	Summit	Wayne
2012	26.7	19.6	23.0	25.4	27.5	22.2
2013	24.1	19.4	21.7	25.4	26.3	21.4
2014	26.96	20.31	23.46	25.05	27.08	21.6
2015	27.5	19.3	23.7	25	28.5	22.06
2016	24.3	16.9	19.5	24.7	28.3	19.6



*Division of Engineering
City of Wooster
2017 Annual Report*

Engineering Design Statistics – Section 5

DIVISION OF ENGINEERING
2017 Project Summary
(Projects Designed or Constructed in 2017)

PROJECT	DESIGNER/CONSULTANT	DESIGN COST	CONTRACTOR	ESTIMATED			Contract Balance	% Complete	Retainage
				CONST. COST	BID PRICE	FINAL COST			
2017 Paving	Wooster Engineering	\$0	Kokosing	\$490,000	\$479,533	\$658,793	\$0	100%	\$0
2017 Paving ODOT	Wooster Engineering	\$0	Kokosing	\$685,000	\$630,294	\$558,308	\$0	100%	\$0
3426 Friendsville Rd. Driveway Improvements	Wooster Engineering	\$0	Stout Excavating	\$45,000	\$44,681	\$40,800	\$0	100%	\$0
Bowman Culvert Repair	Wooster Engineering	\$0	TR Snyder	\$21,500	\$18,610	\$27,959	\$0	100%	\$0
Brookside Drive Sanitary Sewer Lining	Wooster Engineering	\$0	Insituform	\$140,000	\$82,348	\$89,494	\$89,494	100%	\$0
Burbank Road Reconstruction	Wooster Engineering	\$0	G.E. Baker Construction, Inc./Fioritto	\$1,995,000	\$1,727,436	\$1,824,374	\$0	100%	\$0
Catalina & Skylark Waterline	Wooster Engineering	\$0	Dirt Dawg Excavating	\$460,000	\$351,747	\$347,296	\$0	100%	\$0
Christmas Run Basketball Court	Wooster Engineering	\$0	TR Snyder	\$65,000	\$86,832	\$88,495	\$0	100%	\$0
Christmas Run Pickleball Courts	Wooster Engineering	\$0	City of Wooster	\$39,000	n/a	\$60,808	\$0	100%	\$0
CSO Outlet	Wooster Engineering	\$0	Stout Excavating	\$6,200	\$6,700	\$6,700	\$0	100%	\$0
Curb Ramp Replacement	Wooster Engineering	\$0	TR Snyder	\$30,778	\$22,653	\$10,314	\$0	100%	\$0
Dix Culvert Lining	Wooster Engineering	\$0	GE Baker	\$200,000	\$105,720	\$102,984	\$0	100%	\$0
Downtown Streetscape	OHM	\$100,000	Simonson Construction Services, Inc.	\$1,695,000	\$1,504,506	UC	\$1,504,506	0%	\$0
E. Henry & Minerva Sanitary Sewer Replacement	Wooster Engineering	\$0	Dirt Dawg Excavating	\$22,000	\$11,230	UC	\$11,230	0%	\$0
E. University Sanitary	Wooster Engineering	\$0	Dirt Dawg Excavating	\$95,000	\$44,344	UC	\$44,344	0%	\$0
Freedlander Road Rehabilitation	Wooster Engineering	\$0	Melway/TR Snyder	\$42,665	\$59,350	\$36,577	\$0	100%	\$0
Geyers Chapel Culvert	Wooster Engineering	\$0	Bogner Construction Company	\$125,000	\$123,117	\$120,518	\$2,599	98%	\$0
Lagoon Drive Culvert	Wooster Engineering	\$0	Stout Excavating	\$7,000	\$6,200	\$5,211	\$0	100%	\$0
Liberty Signals	Poggemeyer	\$35,864	Perram Electric	\$730,000	\$756,176	UC	\$663,531	12%	\$8,056
Manhole Replacement	Wooster Engineering	\$0	Wenger Excavating	\$25,000	\$22,772	UC	\$22,772	50%	\$0
North Street Traffic Signal	Poggemeyer	\$38,148	Perram Electric	\$600,000	\$505,300	\$471,640	\$0	100%	\$0
North Well Field Check Valve Replacement	Wooster Engineering	\$10,000	Dirt Dawg/Spring Electric	\$200,000	\$254,242	\$254,867	\$0	100%	\$0
Northview Dr. Waterline	Wooster Engineering	\$0	Dirt Dawg Excavating	\$150,000	\$154,933	\$145,177	\$0	100%	\$0
Nupp Drive Lift Station	Wooster Engineering	\$9,000	Simonson Construction Services, Inc.	\$350,000	\$320,245	UC	\$320,245	0%	\$0
PNC Bank Parking Lot	Wooster Engineering	\$0	TR Snyder	\$18,000	\$15,806	\$17,970	\$0	100%	\$0
S. Spink St. Sewer Separation	Wooster Engineering	\$0	Stout Excavating	\$667,500	\$579,547	UC	\$456,758	10%	\$10,677
Safety Service Building	Bowden & Associates	\$450,000	John G. Johnson	\$7,000,000	\$7,570,637	\$7,570,637	\$0	100%	\$0
Timken/Madison Intersection	Wooster Engineering	\$0	TR Snyder	\$18,500	\$18,000	\$17,826	\$0	100%	\$0
Utilities Building Addition	BA Widder	\$20,000	CCI Commercial	\$425,000	\$465,885	\$579,303	\$0	100%	\$0
Welcome Signs	OHM	\$3,500	Bogner Construction Company	\$44,270	\$34,250	UC	\$750	98%	\$0
							UC=Under Construction		
Subtotals		\$666,512		\$16,392,413	\$16,003,093	\$13,036,050			

PROJECT	DESIGNER/CONSULTANT	DESIGN COST	CONTRACTOR	ESTIMATED		STATUS
				CONST. COST	BID PRICE	
2018 Paving ODOT	Wooster Engineering	\$0	Kokosing	\$853,000	\$719,716	DC
Beaver Alley Sewer Separation	Wooster Engineering	\$0		\$45,000	N/A	DC
Madison Avenue Signals	Burgess & Niple	\$19,000		\$145,000	N/A	DC
Northwestern Avenue Sidewalks	Wooster Engineering	\$0		\$86,000	N/A	DC
Wooster Bike Loop 1	Poggemeyer	\$127,625		\$750,000	N/A	DC
Subtotals		\$146,625		\$1,879,000		DC=Design Complete
Bike Path Phase 2	Poggemeyer	\$97,000		\$1,113,000		UD
Cedar Lane Stream Stabilization	Wooster Engineering	\$0		\$65,000		UD
E. University Storm Sewer (Quinby to Bever)	Wooster Engineering	\$0		\$250,000		UD
Friar Tuck Storm Sewer Replacements	Wooster Engineering	\$0		\$160,000		UD
Lemar Storm Sewer Replacement	Wooster Engineering	\$0		\$85,000		UD
North High W/L Extension to Tank (Daisy)	Wooster Engineering	\$0		\$400,000		UD
Oakley/Brookside Paving	Wooster Engineering	\$0		\$300,000		UD
Oakley/Brookside W/L Replacement	Wooster Engineering	\$0		\$745,000		UD
ODOT Urban Paving	Wooster Engineering	\$0		\$200,000		UD
Sanitary Sewer Lining Projects	Wooster Engineering	\$0		\$200,000		UD
Street Repair Asphalt	Wooster Engineering	\$0		\$805,000		UD
Street Repair Concrete	Wooster Engineering	\$0		\$305,000		UD
Sunset Lane	Wooster Engineering	\$0		\$600,000		UD
W. Liberty St. Area	Wooster Engineering	\$0		\$330,000		UD
Wal-Mart Lift Station Gravity Study	Wooster Engineering	\$0		\$30,000		UD
Wayne (Bever to Beall)	Wooster Engineering	\$0		\$100,000		UD
Wayne Avenue Culvert Replacement	Wooster Engineering	\$0		\$150,000		UD
Subtotals		\$97,000		\$5,838,000		UD = Under Design

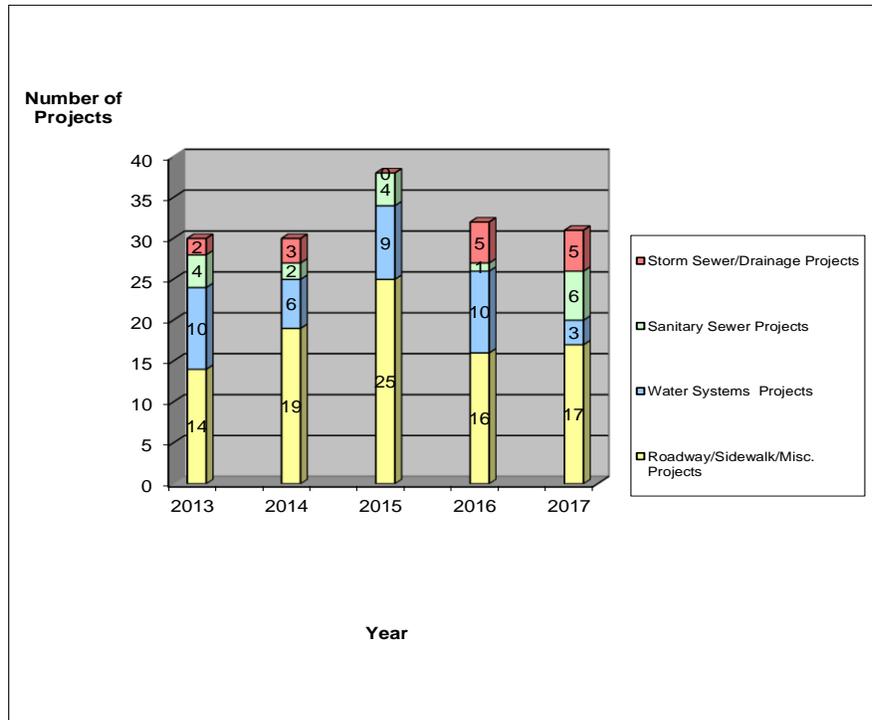
Note: Engineering consultant services and construction costs shown in this table represent totals to date. Actual expenditures occurred over several years.

2017 Breakout for Types of Projects

The Division of Engineering staff designed 22 of the 30 projects for 2017.

Our ability to keep design work in-house enables us to stay below the industry average of 8% to 11% for design costs.

2017 saw our design cost average to be 4.1%.

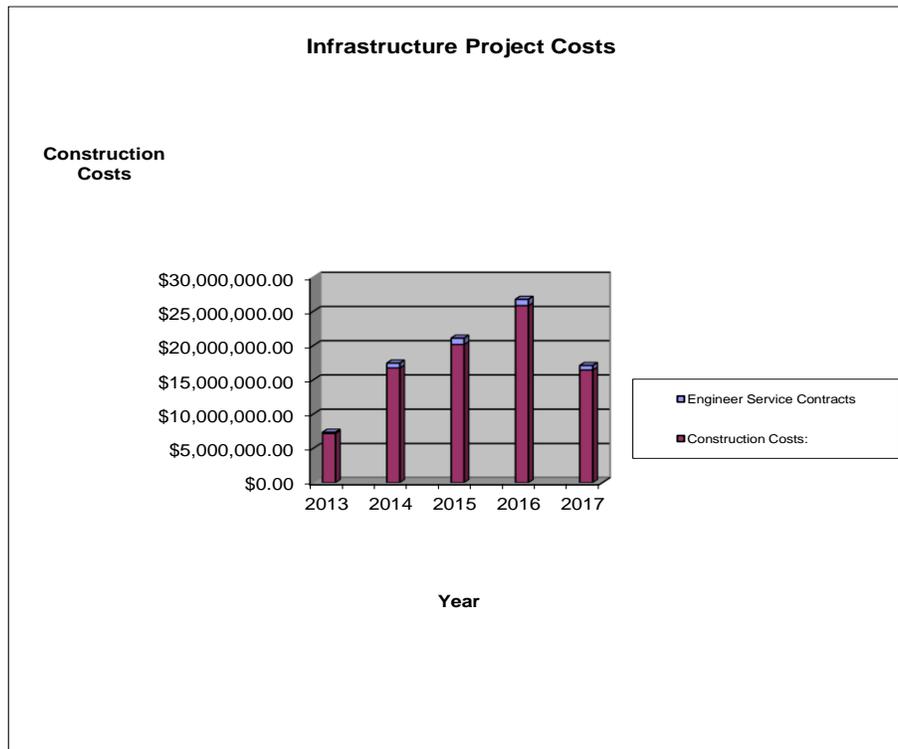


Project Cost over the years

The Engineering Division oversaw \$16,448,913 of infrastructure construction projects in 2017.

Outside design contracts totaled \$666,512.

The ratio between outside design contracts and our construction projects remains fairly constant throughout the years.



Engineering Value Calculations

Project	Design Cost	2017 Design	2016 Design	2015 Design	2014 Design	2013 Design	Engineer's		Bid	Final	2017 Const.
		Costs Paid	Estimate	Contractor	Price	Cost	Payments				
2017 Paving	\$0						\$490,000	Kokosing	\$479,533	\$658,793	\$658,793
2017 Paving ODOT	\$0						\$685,000	Kokosing	\$630,294	\$558,308	\$558,308
3426 Friendsville Rd. Driveway Improvements	\$0						\$45,000	Stout Excavating	\$44,681	\$40,800	\$40,800
Bowman Culvert Repair	\$0						\$21,500	TR Snyder	\$18,610	\$27,959	\$27,959
Brookside Drive Sanitary Sewer Lining	\$0						\$140,000	Insituform	\$82,348	\$89,494	\$89,494
Burbank Road Reconstruction	\$0						\$1,885,000	G.E Baker	\$1,402,403	\$1,417,519	\$1,417,519
Burbank Waterline Replacement	\$0						\$390,000	Fioritto Construction	\$325,033	\$406,855	\$406,855
Catalina & Skylark Waterline Replacement	\$0						\$460,000	Dirt Dawg	\$351,747	\$347,296	\$347,296
Christmas Run Basketball Court	\$0						\$65,000	TR Snyder	\$86,832	\$88,495	\$88,495
Christmas Run Pickleball Court	\$0						\$39,000	Various	N/A	\$60,808	\$60,808
CSO Outlet	\$0						\$6,200	Stout Excavating	\$6,700	\$6,700	\$6,700
Curb Ramp Replacements	\$0						\$30,778	TR Snyder	\$22,653	\$10,314	\$10,314
Dix Culvert Lining	\$0						\$200,000	GE Baker	\$105,720	\$102,984	\$102,984
Downtown Streetscape	\$100,000	\$57,805	\$32,190				\$1,695,000	Simonson Construction	\$1,504,506	UC	\$0
E. Henry & Minerva Sanitary Sewer Replacement	\$0						\$22,000	Dirt Dawg Excavating	\$11,230	UC	\$11,230
E. University Sanitary Sewer	\$0						\$95,000	Dirt Dawg Excavating	\$44,344	UC	\$44,344
Freedlander Road Rehabilitation	\$0						\$42,665	TR Snyder/Melway	\$59,350	\$36,577	\$36,577
Geyers Chapel Culvert Replacement	\$0						\$125,000	Bogner Construction	\$123,117	\$120,518	\$120,518
Lagoon Drive Culvert	\$0						\$7,000	Stout Excavating	\$6,200	\$5,211	\$5,211
Liberty Street Signals Replacement	\$35,864						\$730,000	Perram Electric	\$756,176	UC	\$92,615
Manhole Replacements	\$0						\$25,000	Wenger Excavating	\$22,772	UC	\$0
North Street Traffic Signals Replacement	\$38,148		\$30,889				\$600,000	Perram Electric	\$505,300	\$471,640	\$471,640
North Well Field Check Valve Replacement	\$10,000	\$8,800					\$200,000	Dirt Dawg/Spring Elec	\$254,242	\$254,867	\$254,867
Northview Dr. Waterline Replacement	\$0						\$150,000	Dirt Dawg	\$154,933	\$145,177	\$145,177
Nupp Drive Lift Station Improvements	\$9,000						\$350,000	Simonson Construction	\$320,245	UC	\$0
PNC Bank Parking Lot	\$0						\$18,000	TR Snyder	\$15,806	\$17,970	\$17,970
S. Spink St. Sewer Separation	\$0						\$667,500	Stout Excavating	\$579,547	UC	\$122,789
Safety Service Building	\$450,000		\$373,600				\$7,000,000	John G. Johnson	\$7,570,637	\$7,570,637	\$0
Timken/Madison Intersection	\$0						\$18,500	TR Snyder	\$18,000	\$17,826	\$17,826
Utilities Building Addition	\$20,000		\$11,436				\$425,000	CCI Commercial	\$465,885	\$579,303	\$579,303
Welcome Signs	\$7,000		\$4,000				\$44,270	Bogner Construction	\$34,250	\$34,250	\$34,250
	\$670,012	\$66,605	\$452,115	\$0	\$0	\$0	\$16,672,413		\$16,003,094		\$5,770,642
Industry Standard for Design Engineering* =	8.5%								\$1,360,263		

Design Completed	Design Cost	2017 Design	2016 Design	Engineer's Estimate	Under Construction (2017)		
		Costs Paid	Costs Paid		Value of Construction Engineering	10.00%	\$510,458.92
2018 Paving ODOT	\$0			\$853,000	Design Value Provided in 2017	12.0%	\$100,985.13
Beaver Alley Sewer Separation	\$0			\$45,000	Design Completed (2017)		
Madison Avenue Signals	\$19,000			\$145,000	Value of Design Engineering		
Northwestern Avenue Sidewalks	\$0			\$86,000			
Wooster Bike Loop 1	\$127,625	\$106,067		\$750,000			
	\$146,625	\$106,067		\$1,879,000			

Under Design					Engineer's Estimate	Under Design (2017)
Bike Path Phase 2	\$97,000				\$1,113,000	
Cedar Lane Stream Stabilization	\$0				\$65,000	
E. University Storm Sewer (Quinby to Bever)	\$0				\$250,000	
Friar Tuck Storm Sewer Replacements	\$0				\$160,000	
Lemar Storm Sewer Replacement	\$0				\$85,000	
North High W/L Extension to Tank (Daisy)	\$0				\$400,000	
Oakley/Brookside Paving	\$0				\$300,000	
Oakley/Brookside W/L Replacement	\$0				\$745,000	
ODOT Urban Paving	\$0				\$200,000	
Sanitary Sewer Lining Projects	\$0				\$200,000	
Street Repair Asphalt	\$0				\$805,000	
Street Repair Concrete	\$0				\$305,000	
Sunset Lane Reconstruction	\$0				\$600,000	
W. Liberty St. Area Sanitary Sewer	\$0				\$330,000	
Wal-Mart Lift Station Gravity Study	\$0				\$30,000	
Wayne (Bever to Beall) Waterline Replacement	\$0				\$100,000	
W. Wayne Avenue Culvert Replacement	\$0				\$150,000	
	\$97,000	\$0	\$0	\$0	\$5,838,000	Value of Design Engineering
						\$399,230.00

Preliminary Engineering, Planning & Funding						
Water Projects (1)	\$0				\$1,495,000	Planning (2017)
Sewer projects (1)	\$0				\$835,000	
Storm (1)	\$0				\$1,010,000	Value of Preliminary Engineering
Roadway Projects (1)	\$0				\$4,370,000	3.00%
	\$0				\$7,710,000	\$231,300
						Total Engineering Services Provided in 2017
						\$1,255,064

Notes:
Fees for Engineering services are based on standard industry rates as established by various regulatory and funding agencies, including ODOT, USDA, EPA and OPWC, as well as recent engineering services proposals.
(1) Sum of construction estimates from the 10 year infrastructure plan.