

CITY OF WOOSTER
DIVISION OF ENGINEERING
2022 Annual Report



**Melrose Drive Reconstruction Phase 2
Dirt Dawg Excavating, LLC**



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Summary & Narrative

Division of Engineering

2022 Annual Report

Executive Summary

The 2022 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, 2022. 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 0.83% for 2022. 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 \$3,511,074 in 2022.

The Engineering Division managed over 19 major infrastructure projects in 2022. The total dollar value of construction projects completed or under construction in 2022 was over \$11,635,040. Approximately 57% of the contracts finalized in 2022 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 2022, the City now has over 464 miles of piping in its utility system and over 137 miles of roadway in its transportation system; 70% of the utility infrastructure is older than 20 years.

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. The Engineering Division issued 164 permits in 2022 compared to 201 in 2021.

The Engineering Division is also the City's representative for Ohio811 and is responsible for locating and marking all city-owned utilities whenever requested by contractors and proposed development. These requests have consistently numbered over 2,000 each year since 1991. In 2022 our staff processed 3,114 Ohio811 requests. Per state law, not only are we responsible for physically marking the locations, but 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, have no conflict or if it is 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 by multiple divisions within the city on a daily basis for project planning, design, and maintenance of the City's infrastructure. It is also available to the public through the city's website.

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.

2023 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 2022 with a 0.83% average.

Personnel:

<i>Name</i>	<i>Title</i>	<i>Years Experience</i>
Roger Kobilarcsik	City Engineer, Licensed Professional Engineer	33
John Rice	Staff Engineer, Licensed Professional Engineer	16
Amy Hamilton	Administrative Assistant/Contract Specialist	6
Lance Cole	Project Manager	30
Spencer Gray	Engineering Technician/Drafter	38
Andy Gregory	Engineering Technician/GIS Technician	16
Dave Case	Inspector II, Assoc. Degree Civil Eng. Technology	29
Matt Hill	Inspector II, ODOT Right-of-Way Certification	38
Tim Leach	Inspector II, Assoc. Degree Civil Eng.	13

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. Inspectors use tablets in the field 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:

- ▶ 68 projects planned for construction from 2023-2026
- ▶ \$18,389,559 in Roadway - 24
- ▶ \$12,305,000 in Water - 17
- ▶ \$21,735,000 in Sewer - 22
- ▶ \$2,380,000 in Storm - 5

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 2023 = \$7,300,000
 - b. Funding Needs in 2024 = \$2,875,000
2. Sewer Collection – Upgrades at the WRRF and Lift Stations
 - a. Funding Needs in 2023 = \$15,975,000
 - b. Funding Needs in 2024 = \$1,110,000
3. Roadways – Paving, traffic signals, streetscape, road reconstruction
 - a. Funding Needs in 2023 = \$4,845,000
 - b. Funding Needs in 2024 = \$9,454,559
4. Storm Sewer – Culvert and storm sewer replacements
 - a. Funding Needs in 2023 = \$800,000
 - b. Funding Needs in 2024 = \$800,000

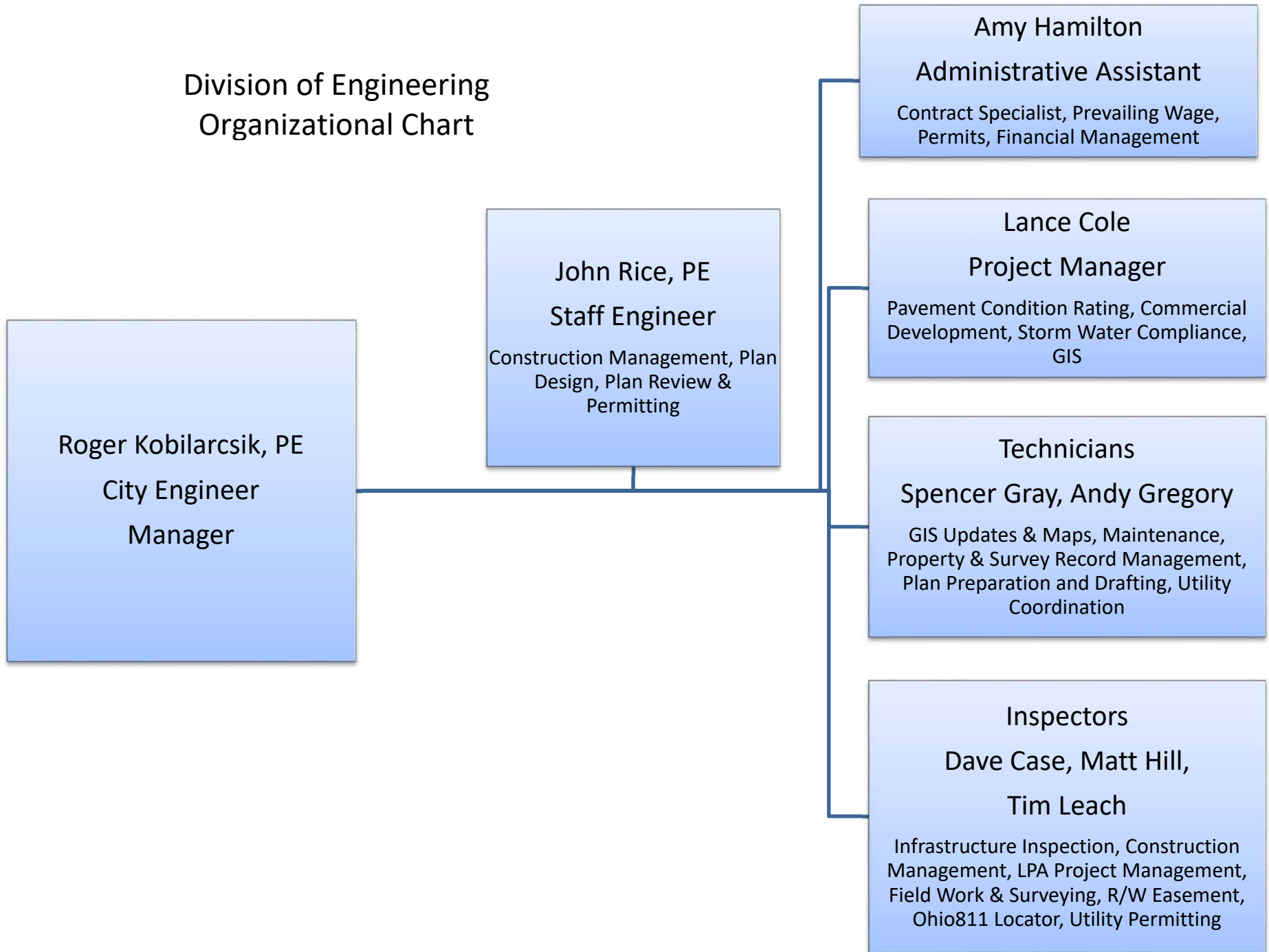
The Engineering Division aggressively seeks outside funding sources in an effort to offset the high costs of infrastructure improvements. The City received \$1,437,323 grant and loan money in 2022 from various sources such as ODOT, Transportation Improvement District, Ohio Public Works Commission, Clean Ohio, Nature Works, and Ohio Capital Improvements. 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 2022.

2022 Funding Received

Project	Bid Price	Final Project Cost	Funding Source	Funding Received
Clear Creek Park	\$916,847	\$990,600	Clean Ohio	\$437,598
			natureWORKS	\$79,157
			Ohio Capital Grant	\$294,000
W. Milltown Road Right-Turn Lanes	\$318,099	\$237,290	TID	\$90,000
WAY-VAR Wooster Streets FY22	\$1,025,028	\$987,208	ODOT	\$536,568
				\$1,437,323
			Total Grant	\$1,437,323
			Total Loan	\$0

Division of Engineering
Organizational Chart



Storm Water Management - 2022

The Division of Engineering is responsible for the City's Storm Water Management Plan and Municipal Separate Storm Sewer System (MS4) 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 Conservation District (Wayne SWCD) to educate students and the general public in environmental conservation through programs such as Enviroscope, Groundwater Wonders, Tony the Trashbag and Outdoor Education. The education and outreach program had been suspended in 2020 and 2021 because of COVID; however, has resumed. The 2022 program included a total of twenty-nine (29) events providing 120 hours of education and outreach. The services reached 893 students and 2142 adults throughout the year.

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 Home Septic Treatment Systems (HSTS) and educational flyers on an annual basis to residents who receive public water, storm, and 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 Parks Department in park clean-up activities, tree planting, and trail projects. Our website provides links for local information on recycling and connecting users to the Stark-Tuscarawas-Wayne Joint Solid Waste Management District. The City is actively looking for methods to increase public involvement and participation.
- 3) **ILLICIT DISCHARGE DETECTION AND EDUCATION:** The Engineering Division is responsible for locating, mapping, and updating the City's stormwater system onto the GIS. 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 Engineering Division is completing a comprehensive review of the existing data and making significant modifications to how data is stored to meet new Ohio EPA permit requirements.

The City has formed a cooperative with the Wayne County Health Department Environmental Health Unit to ensure compliance with Ohio EPA requirements about Home Septic Treatment Systems (HSTS) within the City. The Health Department performs regular inspections of the sixty (60) identified systems within the City and ensures the owners are on a regular maintenance program. Non-compliant 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.

All HSTS located in the City limits have been inspected and confirmed to be in working order and on a scheduled maintenance plan per EPA requirements. All systems found to be inoperable have been repaired, replaced, or are in the process of implementing repairs and connecting to the City network. In 2022, multiple systems were added or removed from the City HSTS inventory increasing the HSTS total from fifty units to sixty. The changes are the result of annexation of existing HSTS into the City, removal of existing systems, or City sanitary improvement projects providing services to prior HSTS. Three (3) business locations, with individual treatment systems, are being reviewed with the Ohio EPA as a business are required to be permitted by the Ohio EPA and do not fall under the jurisdiction of the Wayne County Environmental Health Department.

The City maintains numerous programs to aid in the detecting, preventing, and monitoring the stormwater system in terms of illicit discharge. These programs include smoke testing of areas that have been identified as possible contributors to an illicit discharge. City performed inspections of more than 500 outfalls for signs of contamination, environmental stress, overall structural condition, and proper function. Video inspection of the storm and sanitary systems to evaluate possible infiltration and damage and tree root infestation. The Engineering Division performs annual dry weather screenings to identify other areas possibly requiring further investigation. The City has implemented a new flow monitoring program to establish baseline flow of natural and artificial drainage areas within the City. This monitoring can also be utilized in illicit discharge detection.

- 4) CONSTRUCTION SITE RUNOFF CONTROL: This year, twelve (12) new National Pollution Discharge Elimination System NPDES permits were issued by the Ohio EPA for projects larger 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 eighteen (18) 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 to incorporate NPDES permit data into the City GIS system to assist in tracking the progress of active NPDES permits and providing historical data for previously issued permits. This effort has been 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 375 units to date throughout the City. Eighty-five (85) percent of the sites are private commercial locations, and the majority of the remaining fifteen (15) percent are residential 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 require extensive maintenance and repair, and forty (40) percent need general maintenance. Municipal 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 have 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, 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. The engineer shall issue an engineering certification and corrective requirements on behalf of the owner. This program was to be finalized during 2018, and the first owner/professional inspection reports need to be submitted to the City by May 31st of 2019. However, this program implementation was delayed because the final issuance of the Ohio EPA Municipal Separate Storm Sewer Systems (MS4) permit was not completed until April 2022.

- 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, surface water runoff management, 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 are being implemented to control salt application during the winter season and manage roadway sweeping debris to minimize environmental impacts.

During 2023/2024 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 2023 – Finalize identifying post-construction stormwater management controls and determine ownership. Send initial letters to the owners informing them of their obligations and reporting requirements.
- 2) March 2023 – Update the City of Wooster stormwater management plan to meet the new Ohio EPA General Construction Stormwater permit. City inspection of municipal and public residential stormwater controls by a third-party consultant.
- 3) April 2023 – Submit the City of Wooster updated stormwater management plan to the Ohio EPA for final approval.
- 4) April/May 2023 – Ohio EPA to finalize the new Ohio General Stormwater Permit for MS4. The City is required to implement the new requirements effective immediately upon issuance. The City will inform contractors, developers, and design firms of the forthcoming changes as information become available. The proposed significant modifications to the permit include:

- a. All reported data to the Ohio EPA and City goals shall be based on quantifiable numbers rather than projected estimates. The City shall be accountable for meeting our goals or revising our stormwater management plan.
 - b. Ohio Department of Natural Resources is finalizing local stream evaluations and will be issuing requirements to improve the condition of streams found to be substandard. These requirements will need to be incorporated into the City stormwater management plan when applicable
 - c. The Ohio EPA is still revising the Ohio Rainwater and Land Development Manual to meet the current Ohio EPA General Stormwater Permit Requirements. The City is making regular updates to our stormwater management plan and Site Development Manual to comply with new requirements.
- 5) June to August 2023 – begin updating estimated stormwater unit (ESU) calculations in preparation for new 2024 imagery to determine the current City average ESU and billable ESUs for commercial sites.
 - 6) July 2023 – Annual Ohio EPA audit and site visits.
 - 7) December 2023 – To comply with Ohio EPA requirements, the City must have the following programs in place before December 31st, 2022.
 - a. Submit a revised stormwater management plan addressing the new MS4 stormwater permit requirements
 - b. Finalize the post-construction stormwater management control inventory and inspection program.
 - c. Maintain 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 2024 – Tentatively, the first annual stormwater control inspections reports will be due for 2023 by private entities. The deadline may be delayed to allow sufficient time for private entities to implement an inspection program.
 - 9) February 2024 – 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. The owner will lose any stormwater ESU credits/discounts for commercial establishments receiving these discounts for one year and resolving all issues.

- b. The City shall retain a qualified individual to perform regular or professional inspections and charge the owner(s) for these services via utility billing or tax assessment.
- c. Provide the owner 30 days to complete any needed repairs before the City retains a contractor to complete the work and bill/assess the owner(s).

2022 INFRASTRUCTURE PROJECT NARRATIVE

The Engineering Division managed more than 19 major projects in 2022. Roadway and sanitary sewer projects accounted for the majority of the \$11,635,040 in infrastructure improvements. The staff of nine designed, inspected and administered four waterline projects, five sanitary projects, five roadway or sidewalk projects, two storm sewer projects, and three miscellaneous projects.

The following pages give a brief synopsis of our 2022 major infrastructure projects.



Industrial Park (IP) Water Tank Painting Project
D & M Painting Corporation

2022 Projects Completed or Under Construction

ROADWAY – SIDEWALK PROJECTS - (5 projects - \$7,375,000 Estimated Construction Costs)

<p style="text-align: center;">2021-2022 Wooster Concrete Pavement Replacement</p> <ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local ◆ Bid Date: October 2021 ◆ Estimate: \$1,315,000 ◆ Contractor: DL Smith Concrete ◆ Bid Price: \$1,236,250 ◆ Final Cost: \$1,258,474 ◆ Completed: August 2022 	<p style="text-align: center;">WAY-VAR Wooster Streets FY22</p> <ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: ODOT & Local ◆ Bid Date: December 2021 ◆ Estimate: \$1,050,000 ◆ Contractor: Melway Paving Co. ◆ Bid Price: \$1,025,028 ◆ Final Cost: \$987,208 ◆ Completed: November 2022 	<p style="text-align: center;">2022 Wooster Streets Resurfacing</p> <ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local ◆ Bid Date: January 2022 ◆ Estimate: \$925,000 ◆ Contractor: Melway Paving Co. ◆ Bid Price: \$799,173 ◆ Final Cost: \$904,078 ◆ Completed: September 2022
<p style="text-align: center;">W. Milltown Rd. Right-Turn Lanes</p> <ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local, TID ◆ Bid Date: November 2021 ◆ Estimate: \$225,000 ◆ Contractor: Grassbaugh, LLC ◆ Bid Price: \$318,099 ◆ Final Cost: \$237,290 ◆ Completed: August 2022 	<p style="text-align: center;">Melrose Drive Reconstruction Phase 2</p> <ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local & OPWC ◆ Bid Date: March 2022 ◆ Estimate: \$3,860,000 ◆ Contractor: Dirt Dawg Excavating ◆ Bid Price: \$3,927,811 ◆ Under Construction 	 <p style="text-align: center;">2021-2022 Wooster Concrete Pavement Replacement D.L. Smith Concrete</p>



2022 Projects Completed or Under Construction

WATER PROJECTS (4 projects - \$4,455,000 Estimated Construction Costs)

IP Water Tank Painting	Kieffer Street Waterline Replacement	N. Bauer Road Waterline Replacement
<ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local ◆ Bid Date: November 2021 ◆ Estimate: \$400,000 ◆ Contractor: D&M Painting ◆ Bid Price: \$280,540 ◆ Final Cost: \$338,491 ◆ Completed: August 2022 	<ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local ◆ Bid Date: February 2022 ◆ Estimate: \$600,000 ◆ Contractor: Dirt Dawg Excavating ◆ Bid Price: \$547,095 ◆ Under Construction 	<ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local ◆ Bid Date: December 2021 ◆ Estimate: \$150,000 ◆ Contractor: Dirt Dawg Excavating ◆ Bid Price: \$128,784 ◆ Final Cost: \$53,967 ◆ Completed: April 2022

<p>South Street Waterline Replacement</p> <ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local ◆ Bid Date: December 2021 ◆ Estimate: \$305,000 ◆ Contractor: Palmer & Son Excavating ◆ Bid Price: \$341,179 ◆ Final Cost: \$327,311 ◆ Completed: May 2022



South Street Waterline Replacement
Palmer & Son Excavating, Ltd.

2022 Projects Completed or Under Construction

SANITARY SEWER PROJECTS

(5 projects - \$2,025,040 in Estimated Construction Costs)

<p>2022 Sanitary Sewer Lining</p> <ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local ◆ Bid Date: October 2022 ◆ Estimate: \$163,00 ◆ Contractor: Insight Pipe Contracting ◆ Bid Price: \$131,012 ◆ Under Construction 	<p>Christmas Run Blvd/Brookside Dr. Sanitary Sewer Relocation</p> <ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local ◆ Bid Date: November 2021 ◆ Estimate: \$74,000 ◆ Contractor: Dirt Dawg Excavating ◆ Bid Price: \$73,871 ◆ Final Cost: \$88,615 ◆ Completed: May 2022 	<p>Cleveland Road Sanitary Sewer Replacement</p> <ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local ◆ Bid Date: April 2022 ◆ Estimate: \$120,000 ◆ Contractor: Palmer & Son Excavating ◆ Bid Price: \$113,206 ◆ Final Cost: \$100,281 ◆ Completed: September 2022
<p>Oak Hill Road Sanitary Sewer Extension</p> <ul style="list-style-type: none"> ◆ Designed: Feller Finch ◆ Funding: Local ◆ Estimate: \$1,525,540 ◆ Contractor: Wenger Excavating ◆ Bid Date: June 2022 ◆ Bid Price: \$1,759,779 ◆ Under Construction 	<p>Stibbs Street Sanitary Sewer Replacement</p> <ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local ◆ Estimate: \$142,500 ◆ Contractor: Dirt Dawg Excavating, LLC ◆ Bid Date: October 2021 ◆ Bid Price: \$152,566 ◆ Final Cost: \$124,313 ◆ Completed: April 2022 	



Christmas Run Blvd-Brookside Drive Sanitary Sewer Relocation
Dirt Dawg Excavating, LLC

2022 Projects Completed or Under Construction

STORM SEWER PROJECTS

(2 projects - \$40,000 Estimated Construction Costs)

Andrew Lane Storm Improvements

- ◆ Design: Engineering
- ◆ Funding: Local
- ◆ Estimate: \$25,000
- ◆ Quote Date:
- ◆ Contractor: Palmer & Son Excavating
- ◆ Quote Price: \$22,000
- ◆ Final Cost: \$20,029
- ◆ Completed: June 2022

Beechwood Ave Storm Sewer Outlet

- Designed: Engineering
- Funding: Local
- Estimate: \$15,000
- Quote Date: September 2022
- Contractor: Wenger Excavating
- Quoted Price: \$11,246
- Final Cost: \$11,246
- Completed: September 2022



**Beechwood Ave Storm Sewer Outlet
Wenger Excavating**



2022 Projects Completed or Under Construction

MISCELLANEOUS PROJECTS (3 projects - \$740,000 Estimated Construction Costs)

Bever/Henry/South Traffic Signals	Market/Henry/South Traffic Signals	City Hall Parking Lot Expansion
<ul style="list-style-type: none"> ◆ Designed: Burgess & Niple ◆ Funding: Local ◆ Bid Date: November 2021 ◆ Estimate: \$320,000 ◆ Contractor: Perram Electric ◆ Bid Price: \$251,045 ◆ Final Cost: \$289,312 ◆ Completed: November 2022 	<ul style="list-style-type: none"> ◆ Designed: Poggemeyer ◆ Funding: Local ◆ Estimate: \$320,000 ◆ Bid Date: November 2021 ◆ Contractor: Perram Electric ◆ Bid Price: \$360,405 ◆ Final Cost: \$289,312 ◆ Completed: November 2022 	<ul style="list-style-type: none"> ◆ Designed: Engineering ◆ Funding: Local ◆ Estimate: \$100,000 ◆ Bid Date: August 2022 ◆ Contractor: Rising Son Company ◆ Bid Price: \$104,990 ◆ Under Construction

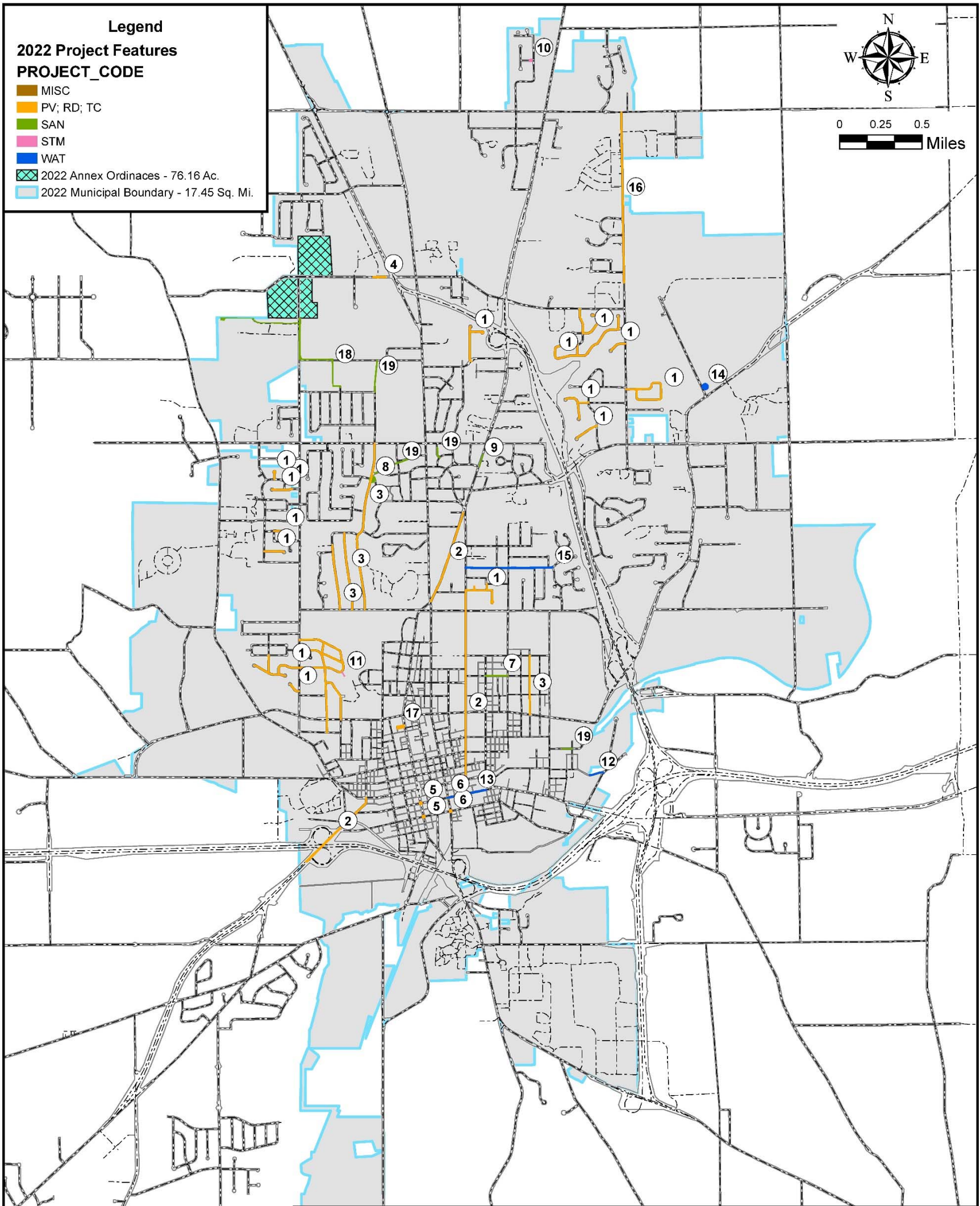


City Hall Parking Lot Expansion
Rising Son Company, Inc.



INFRASTRUCTURE PROJECTS SCHEDULED/PLANNED FOR 2023:

1. **WAY-VAR Wooster Streets FY23:** Melway Paving was awarded the contract for this project, which will be primarily funded by ODOT Large Cities funds, and includes resurfacing E. Henry Street (Market to Bever), E. South Street (Market to Bever), W. Larwill Street (Liberty to Market), N. Geyers Chapel Road (Long to north of Benden), Back Orrville Road (SR585 to Geyers Chapel), and Smithville-Western Road (SR83 to Cleveland). The contract price is \$950,841.
2. **2023 Wooster Streets Resurfacing:** This project includes resurfacing of portions of Winter Street, South Street, and E. Henry Street. The estimated cost of this project is \$500,000 and work should be completed by the end of August 2023.
3. **Giffen Road Waterline:** Palmer and Son Excavating was awarded the contract to replace the waterline along Giffen Drive and to install new water service connections to the 13 homes along the road. The contract price is \$201,377 and construction should begin in Spring 2023.
4. **North End Sanitary Sewer Project:** This project consists of installing 7,659 total linear feet of new sanitary sewer and approximately 24 manholes from Friendsville Road behind Wal-Mart down to Cleveland Road. The project is estimated to cost \$1,500,000 and will bid in early February with a completion date of October 2023.
5. **Palmer Street Bridge Waterline:** This project requires the replacement of approximately 205 linear feet of an existing 6" ductile iron waterline across the Palmer Street bridge. The project is currently under design by Engineering Associates and should be ready to bid later in 2023.
6. **Sherwood Hills Allotment Waterline & Storm Sewer Replacement:** This project involves both waterline and storm sewer replacements, including water service connections, valves, hydrants, inlets, and manholes. Dirt Dawg Excavating was awarded the contract for this project with a bid price of \$947,427 and the project should be completed by the end of November 2023.
7. **W. Milltown Road Sanitary Sewer:** This project includes the installation of 5,170 linear feet of sanitary sewer from the Reserve at Deer Creek lift station to the new Spring Run subdivision on Oak Hill Road.
8. **Oak Hill Road Curb Ramps:** Approximately 26 curb ramps are to be replaced on Oak Hill Road between W. Liberty Street and W. Wayne Avenue to bring them into compliance with ADA and ODOT requirements. Curb ramps are being upgraded in preparation for paving that section of Oak Hill in 2024. Engineering Associates was awarded the design contract.
9. **Melrose Lift Station Improvements:** The lift station project will include wet well and valve vault improvements, generator, controls building, automatic transfer switch, control panel, and bypass pumping. The engineer's estimated cost for these improvements is \$400,000.
10. **2023 Wooster Concrete Pavement Replacements:** This project consists of replacing approximately 3,047 square yards of concrete pavement on Arthur Drive, Ruth Circle, Reta Circle, and E. Wayne Avenue. The estimated construction cost is \$325,000 and construction should be completed by mid-August 2023.
11. **Oak Hill-Oldman Roundabout:** Designed by Poggemeyer Design Group, this new single-lane roundabout will be constructed at the intersection of Oak Hill and Oldman Roads. The project will bid in 2023 and should be complete by Fall 2024. The construction estimate for this project is \$1,400,000.



2022 City Infrastructure Projects

Completed or In-Progress 1/1/2022 to 12/31/2022

Completed Projects					
#	PROJECT NAME	DESCRIPTION	CONSTRUCTION DATES	PRIMARY FUNDING SOURCE	YEAR
1	2021-2022 Wooster Concrete Pavement Replacement Project	Concrete Repairs	Completed Aug, 2022	Local	2022
2	WAY-VAR Wooster Streets FY22	Paving	Completed Nov, 2022	ODOT, Local	2022
3	2022 Wooster Streets Resurfacing	Paving	Completed Nov, 2022	Local	2022
4	W. Milltown Road Right Turn Lanes	Roadway Improvements	Completed Aug, 2022	Local	2022
5	Market - Henry and South Signal Replacement	Traffic Signals	Completed Nov, 2022	Local	2022
6	Bever - Henry and South Signal Replacement	Traffic Signals	Completed Dec, 2022	Local	2022
7	Stibbs Street Sanitary Sewer Replacement	Sanitary Sewer Replacement	Completed April, 2022	Local	2022
8	Christmas Run Blvd-Brookside Drive Sanitary Sewer Relocation	Sanitary Sewer Replacement	Completed May, 2022	Local	2022
9	Cleveland Road Sanitary Sewer Replacement	Sanitary Sewer Improvement	Completed Sept, 2022	Local	2022
10	Andrew Lane Storm Improvements	Storm Sewer Improvements	Completed June, 2022	Local	2022
11	Beechwood Avenue Storm Sewer Outlet	Storm Sewer Improvements	Completed Sept, 2022	Local	2022
12	N. Bauer Road Waterline Replacement	Waterline Replacement	Completed May, 2022	Local	2022
13	South Street Waterline Replacement	Waterline Replacement	Completed May, 2022	Local	2022
14	IP Tank Painting	Painting	Completed Aug, 2022	Local	2022
15	Kieffer Street Waterline Replacement	Waterline Replacement	Completed Dec, 2022	Local	2022
In-Progress Projects					
#	PROJECT NAME	DESCRIPTION	CONSTRUCTION DATES	PRIMARY FUNDING SOURCE	YEAR
16	Melrose Drive Reconstruction Phase 2	Roadway Improvements	Under Construction	Local	2022
17	City Hall North Driveway	Roadway Improvements	Under Construction	Local	2022
18	Oak Hill Road Sanitary Sewer Extension	Sanitary Sewer Improvement	Under Construction	Local	2022
19	2022 Sanitary Sewer Lining	Sanitary Lining	Under Construction	Local	2022

CITY OF WOOSTER
DIVISION OF ENGINEERING

10021 W. 420 LA 10284 CITY, OH 44691
 (330) 263-9229 FAX: (330) 263-5293
 web: www.woosterohio.com

Private Developments

1. Private Subdivisions/Commercial Property under Construction:

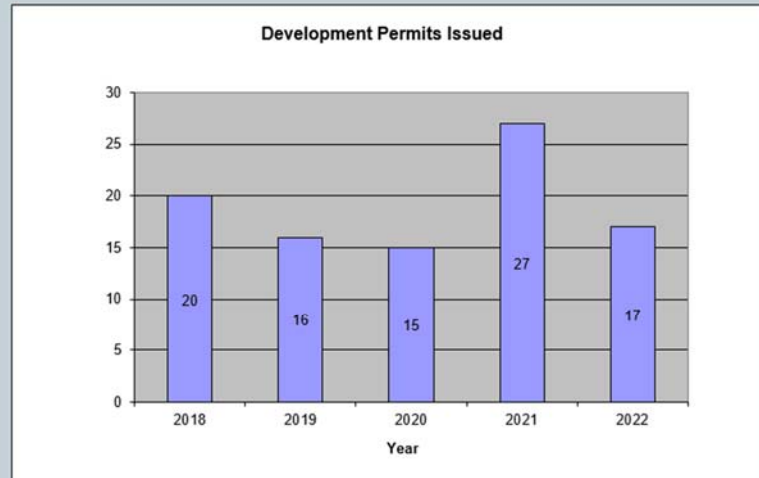
The Engineering Division saw 10 fewer Development Permits issued in 2022 (17) as compared to 2021 (27). New construction projects and additions to existing facilities made up a majority of the work.

Permits for the construction of The Grove on Melrose subdivision, Schaeffler Building Expansion, The Village Network PRT Facility, and the Spring Run subdivision top the list in terms of largest development projects. All four projects are new construction.

All private developments require 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						2022
DEVELOP. #	PERMIT NO.	PROJECT NO.	NAME / DESCRIPTION	SITE IMP.S COST ESTIMATE	PERMIT FEE	DATE RECEIVED
1	DP-22-1	213036	Dominion Energy Betterment Project	\$ 100,000	\$ 9,387	02/10/22
2	DP-22-2	213082	Spring Run Subdivision	\$ 3,500,000	\$ 90,291	02/15/22
3	DP-22-3	223017	Triway Local Schools Sanitary Sewer Relocation	\$ 50,000	\$ 1,926	03/22/22
4	DP-22-4	223023	The Village Network PRT Facility	\$ 4,000,000	\$ 7,880	04/27/22
5	DP-22-5	223011	Caribou Coffee	\$ 50,000	\$ 2,479	05/03/22
6	DP-22-6	223013	Duraflex Door Truck Dock Improvements	\$ 50,000	\$ 150	05/09/22
7	DP-22-7	223024	COW Tennis Courts	\$ 3,000,000	\$ 7,351	06/03/22
8	DP-22-8	223029	Mazda of Wooster Parking Lot Improvements	\$ 38,550	\$ 150	06/23/22
9	DP-22-9	223027	Daisy Brand Trucker Restroom	\$ 160,000	\$ 903	07/05/22
10	DP-22-10	223032	The Grove on Melrose Subdivision	\$ 31,500,000	\$ 72,642	08/10/22
11	DP-22-11	223025	Schaeffler Building Expansion 2022	\$ 11,000,000	\$ 11,679	10/03/22
12	DP-22-12	223058	Cargill Parking Lot Improvements	\$ 126,000	\$ 150	11/02/22
13	DP-22-13	223026	Black Diamond Apartments Site Development 2022	\$ 25,001	\$ 11,116	11/08/22
14	DP-22-14	223047	WCH Water Service Replacement	\$ 40,000	\$ 300	11/08/22
15	DP-22-15	172058	City Hall North Driveway	\$ 105,000	\$ -	12/01/22
16	DP-22-16	223059	Wooster City Schools Bus Loading/Unloading Lane	\$ 27,000	\$ 150	12/02/22
17	DP-22-17	223048	Gregg Orthodontics	\$ 2,300,000	\$ 4,380	12/08/22
				\$ 56,071,551	\$ 220,934	

2018 – 2022 Development Permits

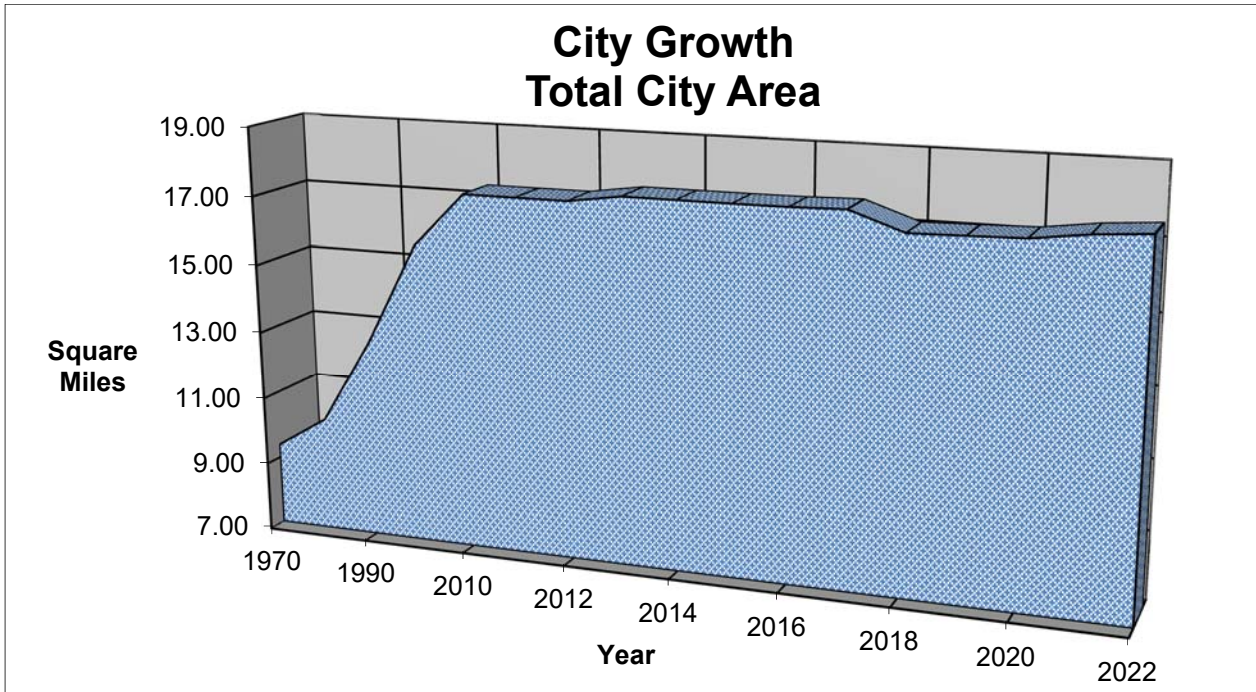


ENGINEERING FEES AND REVENUES:

The following table details the revenues, excluding Development Permits, received by the Division of Engineering from 2018 through 2022.

	2018	2019	2020	2021	2022
Right-of-Way Permits	\$16,470	\$23,660	\$16,600	\$13,610	\$18,830
General Stormwater Management	\$765	\$675	\$990	\$450	\$900
Plan Copies	\$5,140	\$5,124	\$3,036	\$3,628	\$3,782
Yard Pipe Permit	\$0	\$0	\$130	\$0	\$0
Sanitary Sewer Tap Permit	\$1,430	\$2,080	\$2,210	\$1,170	\$610
San. Sewer Availability Charge	\$30,884	\$60,602	\$18,436	\$41,979	\$10,908
Water Service Permit	\$2,901	\$1,690	\$1,610	\$520	\$1,000
Water Availability	\$31,748	\$57,141	\$34,792	\$49,450	\$35,100
TOTAL FEES COLLECTED	\$89,338	\$150,972	\$77,804	\$110,807	\$71,130

City Growth Statistics



City Growth Information

Year	City Population		City Area	City Streets
1990	22,427	(a)	12.8222 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
2018	26,618	(c)	17.081 Sq. MI (d)	136.48 Miles
2019	26,560	(c)	17.115 Sq. MI	136.56 Miles
2020	26,394	(c)	17.155 Sq. MI	136.85 Miles
2021	27,232	(c)	17.36 Sq. Mi.	137.03 Miles
2022	26,751	(c)	17.48 Sq. Mi.	138.25 Miles

(a) Census (b) Estimated from Housing Starts

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

(d) GIS mapping allowed for a more accurate calculation of historical map areas.

City Area Statistics

City Area				
Year	Increases (Acres)	Total Acres	Total Square Miles	% Increase
1970		6,609.310	9.390	0
1980	(1.579)	6,607.731	10.325	-0.024
1990	1,598.039	8,205.770	12.822	24.184
2000	1,885.355	10,091.125	15.767	22.976
2010	1,002.414	11,093.539	17.334	9.934
2011	0.000	11,093.539	17.334	0.000
2012	1.610	11,095.149	17.336	0.015
2013	141.202	11,236.351	17.557	1.273
2014	0.000	11,236.351	17.557	0.000
2015	0.000	11,236.351	17.557	0.000
2016	6.690	11,243.041	17.567	0.060
2017	94.560	11,266.747	17.604	0.841
2018	162.490	10,931.84	17.081	-0.523
2019	21.77	10,953.60	17.115	0.199
2020	25.85	10,979.20	17.155	0.236
2021	134.445	11,112.45	17.363	1.225
2022	76.161	11,188.54	17.482	0.685

GIS mapping allowed for a more accurate calculation of historical map areas.

2022 Annexations

No.	Description	Date	Area
1	Oak Hill Road & W. Milltown Road	9/6/2022	75.217 Acres
2	Oak Hill Road R/W	11/7/2022	.882 Acres
3	Melrose Drive R/W	12/19/2022	.062 Acres

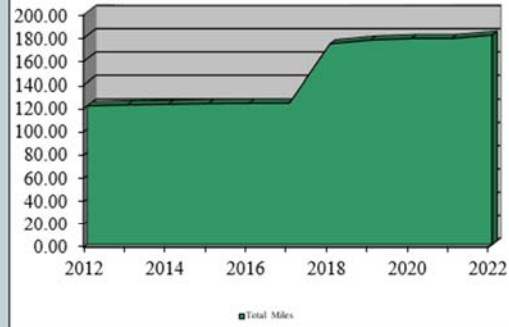
Utility Statistics

Sanitary Sewer Mileage

Sanitary Sewer Mileage

Year	Increase in Miles	Total Miles	% Increase
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%
2018	0.00	172.75	0.00%
2019*	3.30	176.05	1.91%
2020	1.27	177.32	0.72%
2021	0.01	177.33	0.01%
2022	3.00	180.33	1.69%

Sanitary Sewer Total Mileage



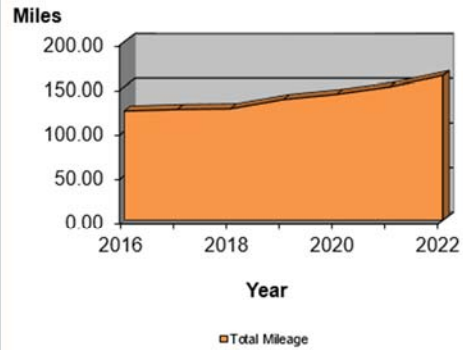
*New technology allows for more accurate measurements. The measurement for 2019 includes new mains located in 2019.

Storm Sewer Mileage

Storm Sewer Mileage

Year	Increase in Miles	Total Mileage	% Increase
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	124.61	0.00%
2018	0.75	125.36	0.60%
2019*	10.36	135.72	8.26%
2020	5.79	141.51	4.27%
2021	8.26	149.77	5.84%
2022	12.48	162.25	8.33%

Storm Sewer Total Miles



*New technology allows for more accurate measurement. Quantity reflects new mains and mains located in 2019

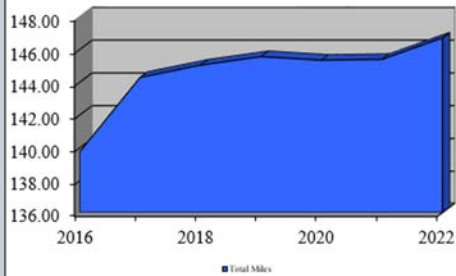
Waterline Mileage

Waterline Mileage

Year	Increase in Miles	Total Miles	% Increase
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	144.30	0.00%
2018	0.75	145.05	0.52%
2019	0.52	145.57	0.36%
2020	-0.22	145.35	-0.15%
2021	0.05	145.40	0.03%
2022	1.31	146.71	0.90%

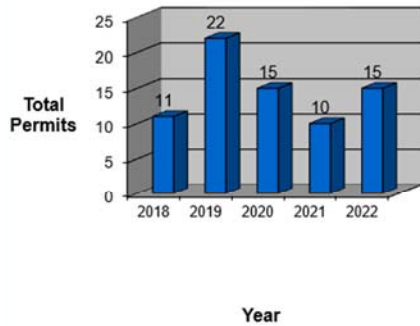
*New technology allows for more accurate measurement. The total for 2017 was adjusted to reflect a correction in measurements.

Waterline Total Mileage

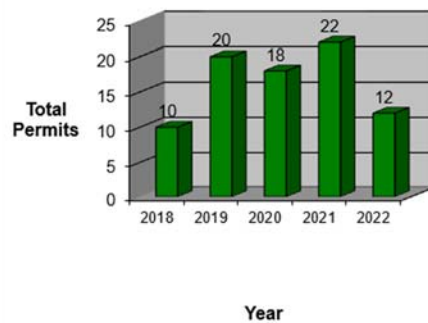


2022 Permits

Water Permits

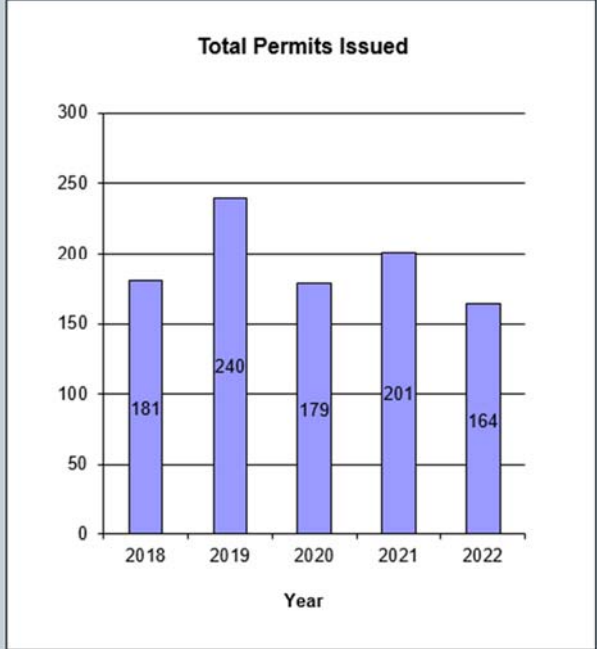
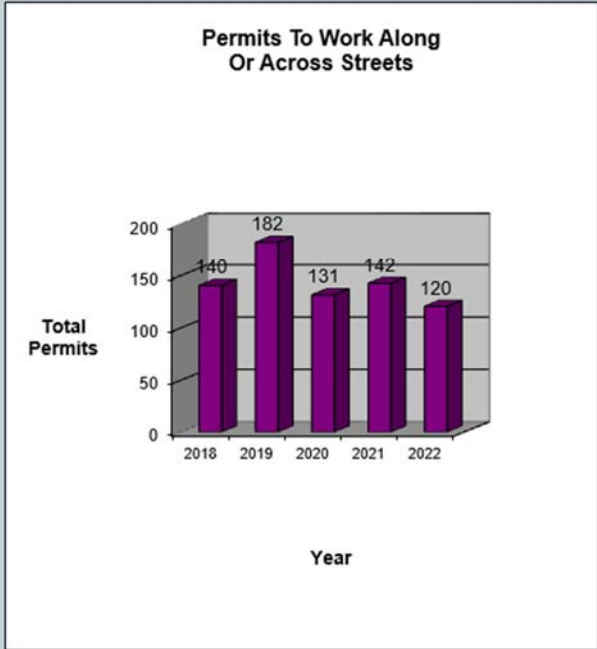


Sewer Permits



Water and Sewer Permits remain fairly level throughout the years; however, in the past few years we saw several large new developments and new constructions that required water and sanitary permits. 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 to help the contractor with any questions or problems that might arise during the project.

Work in the Right-of-Way



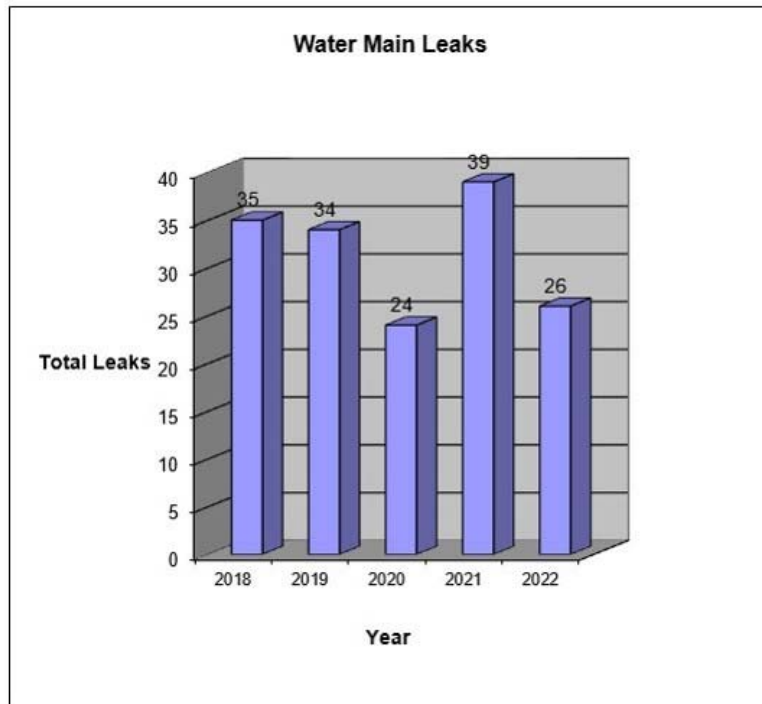
Dominion Energy Ohio continues to be the primary company obtaining Right-of-Way Permits. The company is in the process of improving their infrastructure throughout the city and replacing their main lines. Right-of-way permits are required any time there will be work along the City's streets and/or across the street and also now includes the installation of small cell towers. These permits ensure the City can monitor restoration of the area after the contractor has completed the project.

2022 Water Main Leaks

The City currently maintains over 140 miles of waterline.

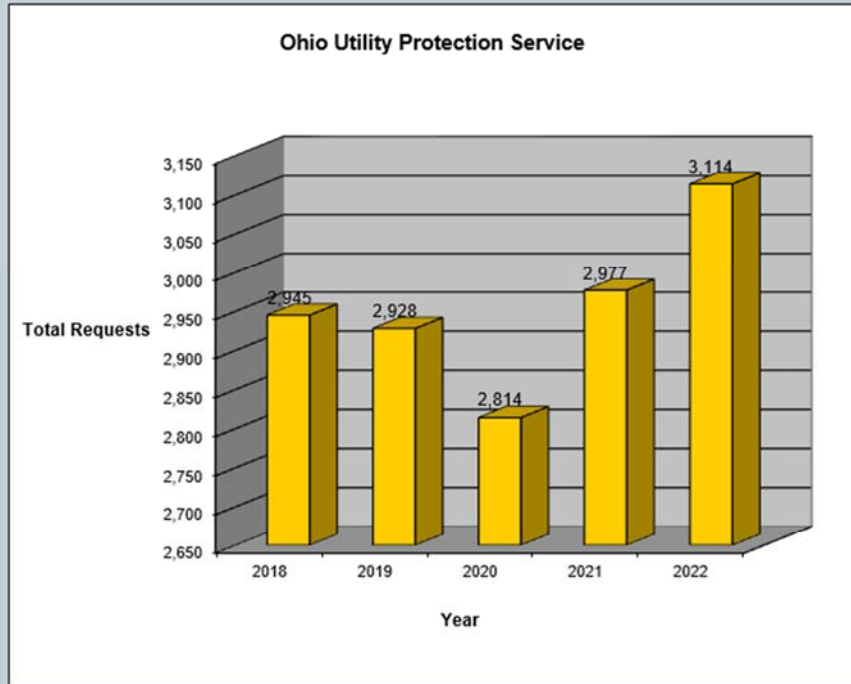
Waterline replacements for 2022 include the areas of:

N. Bauer Road, Kieffer Street, and South Street.



The number of water breaks in 2022 decreased from 2021. The City has increased its effort to locate main line leaks and breaks to more accurately quantify the amount of unaccounted for water.

2022 OHIO811



OHIO811 (formerly known as the Ohio Utility Protection Service, or OUPS) location notices have remained fairly steady as contractors and residents call 811 to notify OHIO811 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 OHIO811 locations such as water line breaks or gas line ruptures. Each notification is also recorded in the Locator Logix software, which tracks the notifications and the positive response (outcome) for each ticket.

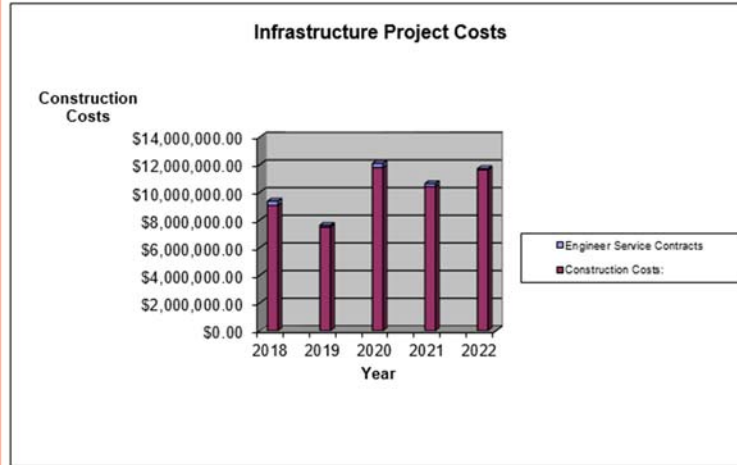
Engineering Design Statistics

Project Cost over the years

The Engineering Division oversaw \$11,635,040 of infrastructure construction projects in 2022.

Outside design contracts totaled \$72,000.

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

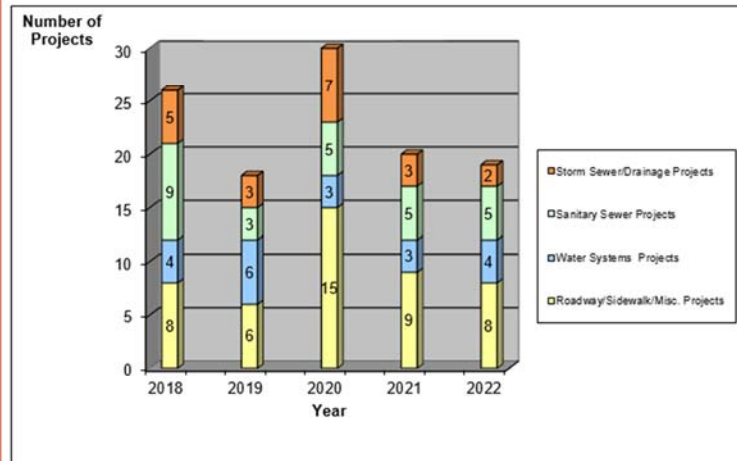


2022 Breakout for Types of Projects

The Division of Engineering staff designed 16 of the 19 projects for 2022.

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

2022 saw our design cost average to be 0.6%.



DIVISION OF ENGINEERING
2022 Project Summary
 (Projects Designed or Constructed in 2022)

PROJECT	DESIGNER/CONSULTANT	DESIGN COST	CONTRACTOR	ESTIMATED			Contract Balance	% Complete	Retainage
				CONST. COST	BID PRICE	FINAL COST			
2021-2022 Wooster Concrete Pavement Replacement	Wooster Engineering	\$0	DL Smith Concrete, LLC	\$1,315,000	\$1,236,250	\$1,258,474	\$0	100%	
2022 Sanitary Sewer Lining	Wooster Engineering	\$0	Insight Pipe Contracting, LLC	\$163,000	\$131,012	UC	\$128,850	16%	
2022 Wooster Streets Resurfacing	Wooster Engineering	\$0	Melway Paving Co, Inc.	\$925,000	\$799,173	\$904,078	\$0	100%	
Andrew Lane Storm Improvements	Wooster Engineering	\$0	Palmer & Son Excavating	\$25,000	\$22,000	\$20,029	\$0	100%	
Beechwood Avenue Storm Sewer Outlet	Wooster Engineering	\$0	Wenger Excavating, Inc.	\$15,000	\$11,246	\$11,246	\$0	100%	
Bever/Henry/South Traffic Signals	Burgess & Niple	\$19,000	Perram Electric	\$320,000	\$251,045	\$289,312	\$0	100%	
Christmas Run Blvd/Brookside Dr Sanitary Sewer Relocation	Wooster Engineering	\$0	Dirt Dawg Excavating	\$74,000	\$73,871	\$88,615	\$0	100%	
City Hall Parking Lot Expansion	Wooster Engineering	\$0	Rising Son Company, Inc.	\$100,000	\$104,990	UC	\$9,926	90%	\$4,200
Cleveland Road Sanitary Sewer Replacement	Wooster Engineering	\$0	Palmer & Son Excavating	\$120,000	\$113,206	\$100,281	\$0	100%	
IP Water Tank Painting	Wooster Engineering	\$0	D&M Painting	\$400,000	\$280,540	\$338,491	\$0	100%	
Kieffer Street Waterline Replacement	Wooster Engineering	\$0	Dirt Dawg Excavating	\$600,000	\$547,095	UC	\$40,272	90%	\$21,884
Market/Henry/South Traffic Signals	Poggemeyer	\$20,000	Perram Electric	\$320,000	\$360,405	\$289,312	\$0	100%	
Melrose Drive Reconstruction Phase 2	Wooster Engineering	\$0	Dirt Dawg Excavating	\$3,860,000	\$3,927,811	UC	\$1,852,010	52%	\$157,112
N. Bauer Road Waterline Replacement	Wooster Engineering	\$0	Dirt Dawg Excavating	\$150,000	\$128,764	\$53,967	\$0	100%	
Oak Hill Road Sanitary Sewer Extension	Feller Finch	\$33,000	Wenger Excavating, Inc.	\$1,525,540	\$1,759,779	UC	\$1,061,779	39%	\$60,696
South Street Waterline Replacement	Wooster Engineering	\$0	Palmer & Son Excavating	\$305,000	\$341,179	\$327,311	\$0	100%	
Stibbs Street Sanitary Sewer Replacement	Wooster Engineering	\$0	Dirt Dawg Excavating	\$142,500	\$152,566	\$124,313	\$0	100%	
W. Milltown Rd. Right Turn Lanes	Wooster Engineering	\$0	Grassbaugh, LLC	\$225,000	\$318,099	\$237,290	\$0	100%	
WAY-VAR Wooster Streets FY22	Wooster Engineering	\$0	Melway Paving Co, Inc.	\$1,050,000	\$1,025,028	\$987,208	\$0	100%	
UC=Under Construction									
Subtotals		\$72,000		\$11,635,040	\$11,584,059	\$5,029,927	\$3,092,837		\$243,891

PROJECT	DESIGNER/CONSULTANT	DESIGN COST	CONTRACTOR	ESTIMATED		STATUS
				CONST. COST	BID PRICE	
2023 Wooster Concrete Pavement Replacement	Wooster Engineering	\$0		\$325,000		DC
2023 Wooster Streets Resurfacing	Wooster Engineering	\$0		\$500,000		DC
Giffen Road Waterline Replacement	Wooster Engineering	\$0	Palmer & Son Excavating	\$180,000	\$201,377	DC
North End Sanitary Sewer Project	Wooster Engineering	\$0		\$1,500,000		DC
Palmer Street Bridge Waterline	Engineering Associates	\$9,000		\$75,000		DC
Sherwood Hills Allotment Waterline Replacement	Wooster Engineering	\$0	Dirt Dawg Excavating	\$1,004,350	\$947,427	DC
W. Milltown Sanitary Sewer	Wooster Engineering	\$0		\$1,750,000		DC
WAY-VAR Wooster Streets FY23	Wooster Engineering	\$0	Melway Paving Company	\$1,150,000	\$950,841	DC
DC=Design Complete						
Subtotals		\$9,000		\$6,484,350	\$ 2,099,645	

Christmas Run Sanitary Sewer	Wooster Engineering	\$0		\$500,000		UD
Downtown Streetscape Phase 4	Wooster Engineering	\$0		\$500,000		UD
Fire Station #1 Renovation	Mull & Weithman	\$286,714		\$5,400,000		UD
Long Road Booster Station	Poggemeyer Design Group	\$19,500		\$400,000		UD
Melrose Lift Station Improvements	Wooster Engineering	\$0		\$400,000		UD
North Well Field #3 Replacement	Wooster Engineering	\$0		\$150,000		UD
Oak Hill Curb Ramps	Engineering Associates	\$37,525		\$125,000		UD
Oak Hill/Milltown Road Improvements	CESO	\$174,000		\$5,000,000		UD
Oldman/Oak Hill Roundabout	Poggemeyer Design Group	\$45,378		\$1,400,000		UD
Wooster Bike Loop 3	Engineering Associates	\$125,903		\$1,250,000		UD
UD = Under Design						
Subtotals		\$689,020		\$15,125,000		

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

\$ 33,244,390

Engineering Value Calculations

Project	Design Cost	2022 Design	2021 Design	2020 Design	2019 Design	2018 Design	Engineer's	Contractor	Bid	Final	2022 Const.
		Costs Paid	Costs Paid	Costs Paid	Costs Paid	Costs Paid	Estimate		Price	Cost	Payments
2021-2022 Wooster Concrete Pavement Replacement	\$0						\$1,315,000	DL Smith Concrete, LLC	\$1,236,250	\$1,258,474	\$1,258,474
2022 Sanitary Sewer Lining	\$0						\$163,000	Insight Pipe Contracting, LLC	\$131,012	UC	\$2,162
2022 Wooster Streets Resurfacing	\$0						\$925,000	Melway Paving Co, Inc.	\$799,173	\$904,078	\$904,078
Andrew Lane Storm Improvements	\$0						\$25,000	Palmer & Son Excavating	\$22,000	\$20,029	\$20,029
Beechwood Avenue Storm Sewer Outlet	\$0						\$15,000	Wenger Excavating, Inc.	\$11,246	\$11,246	\$11,246
Bever/Henry/South Traffic Signals	\$19,000				\$18,500		\$320,000	Perram Electric	\$251,045	\$289,312	\$29,662
Christmas Run Blvd/Brookside Dr Sanitary Sewer Relocation	\$0						\$74,000	Dirt Dawg Excavating	\$73,871	\$88,615	\$88,615
City Hall Parking Lot Expansion	\$0						\$100,000	Rising Son Company, Inc.	\$104,990	UC	\$95,064
Cleveland Road Sanitary Sewer Replacement	\$0						\$120,000	Palmer & Son Excavating	\$113,206	\$100,281	\$100,281
IP Water Tank Painting	\$0						\$400,000	D&M Painting	\$280,540	\$338,491	\$338,491
Kieffer Street Waterline Replacement	\$0						\$600,000	Dirt Dawg Excavating	\$547,095	UC	\$442,436
Market/Henry/South Traffic Signals	\$20,000		\$17,539				\$320,000	Perram Electric	\$360,405	\$289,312	\$289,662
Melrose Drive Reconstruction Phase 2	\$0						\$3,860,000	Dirt Dawg Excavating	\$3,927,811	UC	\$1,852,010
N. Bauer Road Waterline Replacement	\$0						\$150,000	Dirt Dawg Excavating	\$128,764	\$53,967	\$53,967
Oak Hill Road Sanitary Sewer Extension	\$33,000	\$25,782	\$27,100				\$1,525,540	Wenger Excavating, Inc.	\$1,759,779	UC	\$1,061,779
South Street Waterline Replacement	\$0						\$305,000	Palmer & Son Excavating	\$341,179	\$327,311	\$327,311
Stibbs Street Sanitary Sewer Replacement	\$0						\$142,500	Dirt Dawg Excavating	\$152,566	\$124,313	\$124,313
W. Milltown Rd. Right Turn Lanes	\$0						\$225,000	Grassbaugh, LLC	\$318,099	\$237,290	\$237,290
WAY-VAR Wooster Streets FY22	\$0						\$1,050,000	Melway Paving Co, Inc.	\$1,025,028	\$987,208	\$987,208
	\$72,000	\$25,782	\$44,639	\$0	\$18,500	\$0	\$11,635,040		\$11,584,059		\$8,224,077
Industry Standard for Design Engineering* =	8.5%								\$984,645		

Engineering Value Calculations

Design Completed					Under Construction (2022)		
	Design Cost	2022 Design	2021 Design	Engineer's Estimate	Value of Construction Engineering	10.00%	\$796,625.24
2023 Wooster Concrete Pavement Replacement	\$0			\$325,000	Design Value Provided in 2022	12.0%	\$107,486.83
2023 Wooster Streets Resurfacing	\$0			\$500,000	Design Completed (2022)		
Giffen Road Waterline Replacement	\$0			\$180,000	Value of Design Engineering \$542,169.75		
North End Sanitary Sewer Project	\$0			\$1,500,000			
Palmer Street Bridge Waterline	\$9,000	\$1,000	\$8,000	\$75,000			
Sherwood Hills Allotment Waterline Replacement	\$0			\$1,004,350			
W. Milltown Sanitary Sewer	\$0			\$1,750,000			
WAY-VAR Wooster Streets FY23	\$0			\$1,150,000			
	\$9,000	\$1,000	\$8,000	\$6,484,350			
Under Design					Under Design (2022)		
				Engineer's Estimate	Value of Design Engineering		\$596,605.00
Christmas Run Sanitary Sewer	\$0			\$500,000	Value of Design Engineering \$596,605.00		
Downtown Streetscape Phase 4	\$0			\$500,000			
Fire Station #1 Renovation	\$286,714	\$286,714		\$5,400,000			
Long Road Booster Station	\$19,500	\$19,088	\$413	\$400,000			
Melrose Lift Station Improvements	\$0			\$400,000			
North Well Field #3 Replacement	\$0			\$150,000			
Oak Hill Curb Ramps	\$37,525			\$125,000			
Oak Hill/Milltown Road Improvements	\$174,000	\$54,705		\$5,000,000			
Oldman/Oak Hill Roundabout	\$45,378	\$49,578	\$26,150	\$1,400,000			
Wooster Bike Loop 3	\$125,903	\$116,903		\$1,250,000			
	\$689,020	\$526,988	\$26,563	\$0	\$15,125,000		
Preliminary Engineering, Planning & Funding					Planning (2022)		
Water Projects (1)	\$0			\$10,300,000	Value of Preliminary Engineering	3.00%	\$1,468,187
Sewer projects (1)	\$0			\$21,285,000	Total Engineering Services Provided in 2022		
Storm (1)	\$0			\$1,730,000	\$3,511,074		
Roadway Projects (1)	\$0			\$15,624,559			
	\$0			\$48,939,559			

Consultant Services Paid	% of Construction
Under Construction	0.76%
Design Completed	0.14%
Under Design	3.66%
\$651,471.77	0.83%

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 next three years of the 10-year infrastructure plan.