CITY OF WOOSTER
DIVISION OF ENGINEERING

2023 Annual Report

Oak Hill Road & Oldman Road Roundabout

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February 2023

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Summary & Narrative

Division of Engineering
2023 Annual Report
Executive Summary

The 2023 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, 2023. This report will provide information 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 the fees for professional services at 4.6% of estimated construction costs for 2023. 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 is estimated at $3,356,595 in 2023.

The Engineering Division managed 17 major infrastructure projects in 2023. The total dollar value of construction projects completed or under construction in 2023 was $19,345,890. Approximately 64% of the contracts finalized in 2023 came in at or under the contractors' bid prices. 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 2023, the City now has over 464 miles of piping in its utility system and over 138 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 242 permits in 2023 compared to 164 in 2022.

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 2023 our staff processed 4,268 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 Locator LOGiX 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.

***2024 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 2023 with fees for outside engineering consultants at 4.6% of estimated construction costs.

Personnel:

Name	***Title***	***Years Experience***
John Rice	City Engineer, Professional Engineer	18
Brendon Jones	Staff Engineer	1
Amanda McLain	Administrative Assistant/Contract Specialist	1
Spencer Gray	Engineering Technician/Drafter	39
Andy Gregory	Engineering Technician/GIS Technician	17
Dave Case	Inspector II, Assoc. Degree Civil Eng. Technology	30
Matt Hill	Inspector II, ODOT Right-of-Way Certification	39
Tim Leach	Inspector II, Assoc. Degree Civil Eng.	14

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 both reactive and proactive. Capital improvement projects are based on evaluating remaining useful life, infrastructure experiencing frequent problems, and regulatory mandates. Strategic extensions and improvements are made in response to areas of projected growth and development. The Engineering Division works closely with the Utilities and PPM Divisions to maintain the 10-year capital improvement plan.

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

- 50 projects planned for construction from 2024-2027
- $25,154,559 in Roadway (15 projects)
- $6,190,000 in Water (18 projects)
- $17,910,000 in Sanitary Sewer (11 projects)
- $3,025,000 in Storm (6 projects)

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

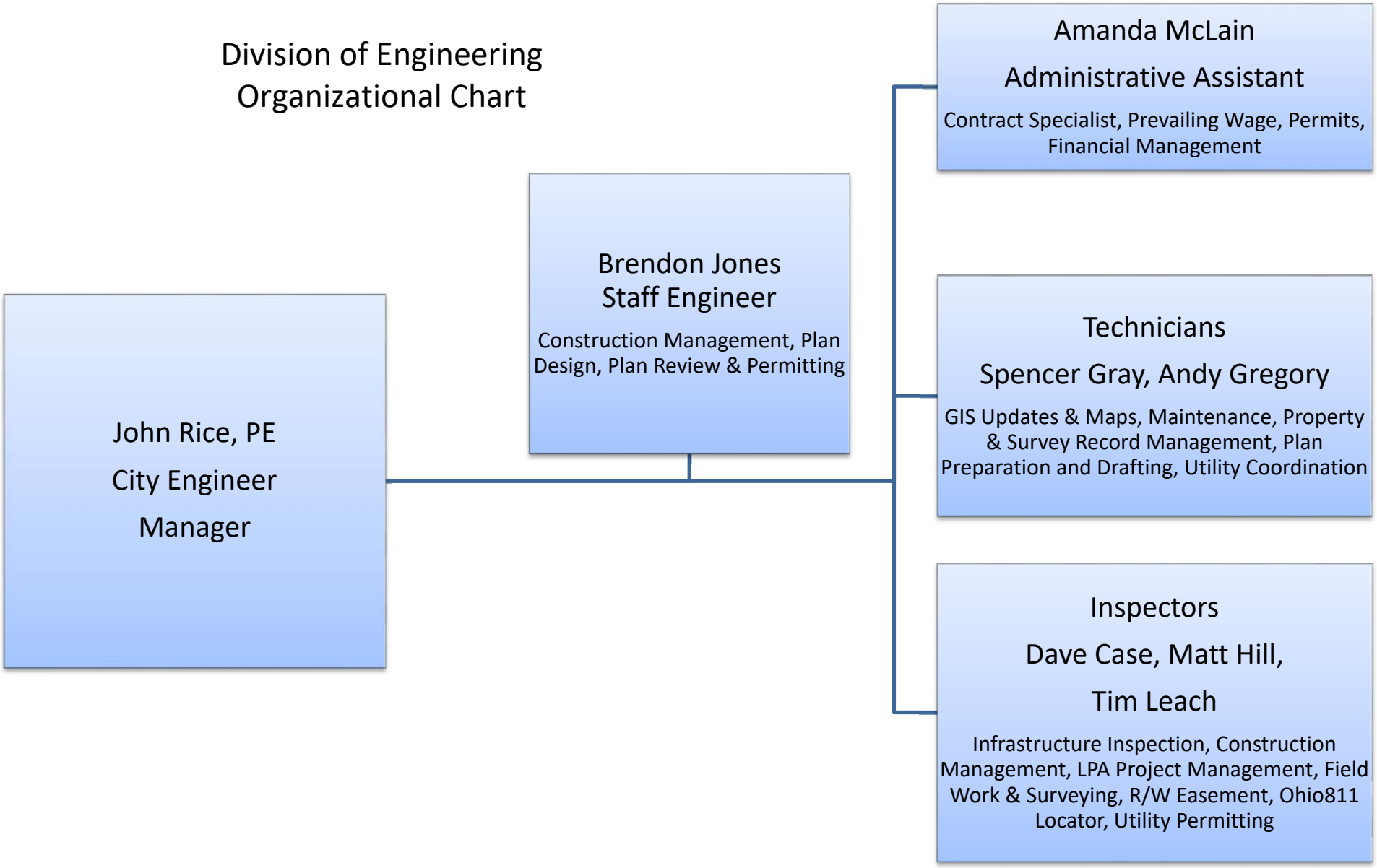
1. Water Distribution and Storage – Replacing existing mains and maintenance of water tanks
    a. Funding Needs in 2024 = $2,155,000
    b. Funding Needs in 2025 = $2,955,000
2. Sewer Collection – Upgrades at the WRRF and Lift Stations
    a. Funding Needs in 2024 = $12,550,000
    b. Funding Needs in 2025 = $860,000
3. Roadways – Paving, traffic signals, streetscape, road reconstruction
    a. Funding Needs in 2024 = $9,138,559
    b. Funding Needs in 2025 = $6,061,000
4. Storm Sewer – Culvert and storm sewer replacements
    a. Funding Needs in 2024 = $550,000
    b. Funding Needs in 2025 = $975,000

The Engineering Division aggressively seeks outside funding sources such as ODOT, Transportation Improvement District, Ohio Public Works Commission, Clean Ohio, Nature Works, and Ohio Capital Improvements in an effort to offset the high costs of infrastructure improvements. The City received $1,288,291 grant and loan money in 2023 from the sources shown below. 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 2023.

2023 Funding Received				
Project	**Bid Price**	**Final Project Cost**	**Funding Source**	**Funding Received**
North End Sanitary	$1,477,120	Under Construction	OPWC-Grant	$216,556
Melrose Drive Reconstruction	$3,927,811	$4,029,654	OPWC-Grant	$500,000
WAY-VAR Wooster Streets FY23	$1,025,028	$917,041	ODOT	$571,735
				$1,288,291
			Total Grant	$1,288,291
			Total Loan	$0

Division of Engineering Organizational Chart



Storm Water Management - 2023

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 Enviroscape, Groundwater Wonders, Tony the Trashbag and Outdoor Education. The 2023 education and outreach program included a total of 14 events providing 110 hours of education and outreach. The services reached 429 students and 2,175 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 approximately 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. Three 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, 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 Engineering Division 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 over 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.

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. 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 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 2024 – Finalize identifying post-construction stormwater management controls constructed since 2017. Send initial letters to the owners informing them of their obligations and reporting requirements.

2) June to August 2024 – Begin updating estimated stormwater unit (ESU) calculations from new 2024 imagery for the current City average ESU and billable ESUs for commercial sites.

3) July 2024 – Annual Ohio EPA audit and site visits.

4) December 2024 – To comply with Ohio EPA requirements, the City must have the following programs in place before December 31st, 2024.

    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.

5) January 2026 – Tentatively, the first round of stormwater control inspections reports will be due for private entities.

6) March 2026 – 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).

2023 INFRASTRUCTURE PROJECT NARRATIVE

The Engineering Division managed 17 major projects in 2023. Total construction costs paid in 2023 for these projects totaled $13,118,253. The staff of nine designed, inspected and administered four waterline projects, five sanitary projects, six roadway or sidewalk projects, one storm sewer project, and two miscellaneous projects.

The following pages give summaries of our 2023 major infrastructure projects.

South Bever Street Sewer Separation

2023 Projects Completed or Under Construction

ROADWAY – SIDEWALK PROJECTS - (6 projects - $7,283,000 Estimated Construction Costs)

2023 Wooster Concrete Pavement Replacement

- Designed: Engineering
- Funding: Local
- Bid Date: February 2023
- Estimate: $325,000
- Contractor: TR Snyder Construction, Inc.
- Bid Price: $276,176
- Final Cost: $426,716
- Completed: September 2023

WAY-VAR Wooster Streets FY23

- Designed: Engineering
- Funding: ODOT, Local
- Bid Date: December 2022
- Estimate: $1,150,000
- Contractor: Melway Paving Co.
- Bid Price: $950,841
- Final Cost: $917,041
- Completed: August 2023

2023 Wooster Streets Resurfacing

- Designed: Engineering
- Funding: Local
- Bid Date: January 2023
- Estimate: $500,000
- Contractor: Melway Paving Co.
- Bid Price: $442,696
- Final Cost: $575,520
- Completed: August 2023

Curb Ramps for FY23 Resurfacing

- Designed: Engineering
- Funding: Local
- Bid Date: October 2022
- Estimate: $48,000
- Contractor: Smith Paving and Excavating, Inc.
- Bid Price: $45,996
- Final Cost: $36,498
- Completed: April 2023

Melrose Drive Reconstruction Phase 2

- Designed: Engineering
- Funding: Local, OPWC
- Bid Date: March 2022
- Estimate: $3,860,000
- Contractor: Dirt Dawg Excavating, LLC
- Bid Price: $3,927,811
- Final Cost: 4,029,654
- Completed: December 2023

Oldman and Oak Hill Roundabout

- Designed: Kleinfelder
- Funding: Local, TIF
- Bid Date: March 2022
- Estimate: $1,400,000
- Contractor: Dirt Dawg Excavating, LLC
- Bid Price: $947,427
- Under Construction

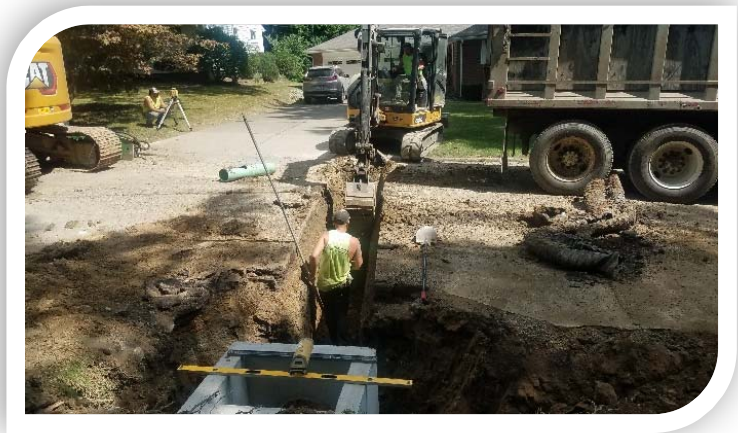
Oldman and Oak Hill Roundabout

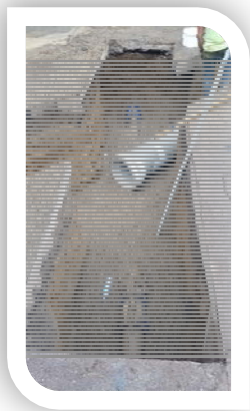
2023 Projects Completed or Under Construction

WATER PROJECTS (4 projects - $1,620,000 Estimated Construction Costs)

Giffen Drive Waterline Replacement	W. Henry Street Waterline Replacement	Sherwood Hills Allotment Waterline Replacement
♦ Designed: Engineering ♦ Funding: Local ♦ Bid Date: May 2022 ♦ Estimate: $180,000 ♦ Contractor: Palmer & Son Excavating, Ltd. ♦ Bid Price: $201,377 ♦ Final Cost: $194,442 ♦ Completed: June 2023	♦ Designed: Engineering ♦ Funding: Local ♦ Bid Date: May 2023 ♦ Estimate: $90,000 ♦ Contractor: Dirt Dawg Excavating, LLC ♦ Bid Price: $91,276 ♦ Final Cost: $86,970 ♦ Completed: October 2023	♦ Designed: Engineering ♦ Funding: Local ♦ Bid Date: November 2022 ♦ Estimate: $750,000 ♦ Contractor: Dirt Dawg Excavating, LLC ♦ Bid Price: $710,570 ♦ Final Cost: $691,347 ♦ Completed: November 2023
Kieffer Street Waterline Replacement ♦ Designed: Engineering ♦ Funding: Local ♦ Bid Date: February 2022 ♦ Estimate: $600,000 ♦ Contractor: Dirt Dawg Excavating, LLC ♦ Bid Price: $547,095 ♦ Final Cost: $537,228 ♦ Completed: April 2023		

Sherwood Hills Allotment
Waterline Replacement





2023 Projects Completed or Under Construction

SANITARY SEWER PROJECTS (5 projects - $4,688,540 in Estimated Construction Costs)

2022 Sanitary Sewer Lining

- Designed: Engineering
- Funding: Local
- Bid Date: October 2022
- Estimate: $163,00
- Contractor: Insight Pipe Contracting
- Bid Price: $131,012
- Final Cost: $127,383
- Completed: March 2023

North End Sanitary Sewer

- Designed: Engineering
- Funding: Local, OPWC
- Bid Date: March 2023
- Estimate: $1,500,000
- Contractor: GE Baker Construction, Inc.
- Bid Price: $1,477,120
- Under Construction

Melrose Lift Station Improvements

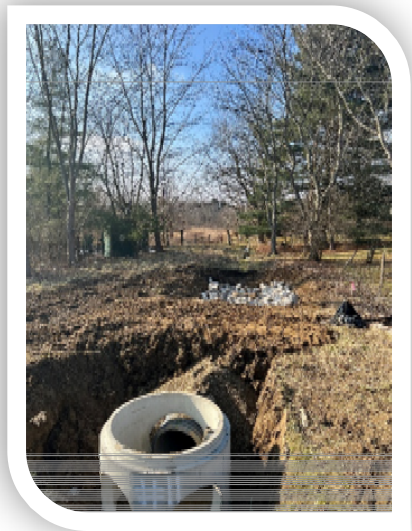
- Designed: Engineering
- Funding: Local
- Bid Date: February 2023
- Estimate: $400,000
- Contractor: Bogner Construction Company
- Bid Price: $392,729
- Under Construction

Oak Hill Road Sanitary Sewer Extension

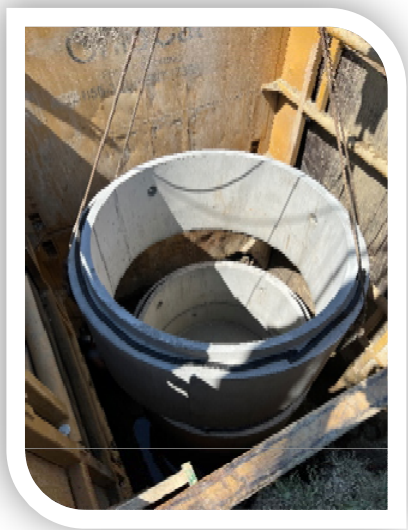
- Designed: Feller Finch
- Funding: Local, TIF
- Estimate: $1,525,540
- Contractor: Wenger Excavating, Inc.
- Bid Date: June 2022
- Bid Price: $1,759,779
- Under Construction

WRRF VLR #5 Improvements

- Designed: Jones & Henry, Ltd
- Funding: Local
- Estimate: $1,100,000
- Contractor: Stanley Miller Construction
- Bid Date: November 2022
- Bid Price: $1,211,000
- Under Construction



Melrose



2023 Projects Completed or Under Construction

STORM SEWER PROJECTS (1 project - $250,000 Estimated Construction Costs)

Sherwood Hills Allotment Storm Sewer Replacement

- Designed: Engineering
- Funding: Local
- Bid Date: November 2022
- Estimate: $250,000
- Contractor: Dirt Dawg Excavating, LLC
- Bid Price: $236,857
- Final Cost: $230,449
- Completed: November 2023

Sherwood Hills Water and Storm

2023 Projects Completed or Under Construction

MISCELLANEOUS PROJECTS (2 projects - $5.5 million Estimated Construction Costs)		
Fire Station #1 Renovation ♦ Designed: Mull & Weithman ♦ Funding: Local, CDBG ♦ Bid Date: June 2023 ♦ Estimate: $5.4 million ♦ Contractor: Adena Corporation ♦ Bid Price: $5,091,300 ♦ Under Construction	City Hall Parking Lot Expansion ♦ Designed: Engineering ♦ Funding: Local ♦ Estimate: $100,000 ♦ Bid Date: August 2022 ♦ Contractor: Rising Son Company ♦ Bid Price: $104,990 ♦ Final Cost: $111,494 ♦ Completed: March 2023	

City Hall Parking Lot Expansion
Rising Son Company, Inc.

INFRASTRUCTURE PROJECTS SCHEDULED/PLANNED FOR 2024:

1. **WAY-VAR Wooster Streets FY24:** Melway Paving was awarded the contract for this project, which will be primarily funded by ODOT Large Cities funds, and includes resurfacing Palmer Street (north of Bowman Street) and Oak Hill Road (south of Wayne Avenue) and replacing concrete pavement on W. Liberty Street (Mechanicsburg Road to Oak Hill Road). The contract price is $759,370.

2. **2024 Wooster Streets Resurfacing:** This project includes resurfacing Robin Hood Drive, Friar Tuck Circle, Allandale Drive, Fairview Circle, Little John Lane, and of portions of Timken Road, Sherwood Drive, and W. Henry Street. The estimated cost of this project is $725,000 and work should be completed by the end of August 2024.

3. **Palmer Street Waterline Replacement:** This project involves the replacement of the waterline on Palmer Street (north of Bowman Street). The estimated construction cost is $800,000 and work should be completed by the end of June.

4. **S. Bever Street Sewer Separation:** This project involves the installation of storm sewers along S. Bever Street, near Freedlander Road and the RR bridge. Construction is being done by Dirt Dawg Excavating, LLC and work should be completed by the end of May. The contract price is $209,849.

5. **Downtown Streetscape Phase 4:** This project includes the continued renewal of the downtown streetscape by improving the south side of W. Liberty Street from PNC Bank to Walnut Street and the east side of Walnut Street from W. Liberty Street to Beaver Alley. The construction contract has been awarded to Brennstuhl Construction, Inc. in the amount of $340,415 and work should be completed by July 1st.

6. **Quinby Avenue Traffic Signal Replacements:** The project involves the replacement of traffic signals at the Quinby-Bowman and Quinby-Wayne intersections. Perram Electric, Inc. was awarded the construction contract in the amount of $435,575 and work is to be completed by the end of the year.

7. **Christmas Run Blvd Sanitary Sewer Replacement:** This project includes the replacement of 4,200 feet of sanitary sewer on Christmas Run Blvd (north of Brookside Drive) and Skylark Avenue (east of Monterey Street) to accommodate development to the north. The construction contract has been awarded to Underground Utilities, Inc. in the amount of $1,071,755 and work should be completed by June 1st.

8. **Christmas Run Park Pickleball Courts:** This project involves the construction of a new concrete pickleball court in lower Christmas Run Park. The construction contract has been awarded to RMH Concrete & Foundations, Inc. in the amount of $224,460 and work should be completed by July 1st.

9. **Palmer Street Railroad Bridge Waterline:** This project requires the replacement of approximately 205 linear feet of an existing 6" ductile iron waterline across the Palmer Street railroad bridge. The construction contract has been awarded to Cistone's Excavating Services, LLC in the amount of $164,527 and work should be completed by this spring.

10. **Oak Hill Road Curb Ramp Replacement:** 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. Smith Paving and Excavating, Inc. was awarded the construction contract in the amount of $101,924 and work is to be completed by the end of May.

11. **2024 Wooster Concrete Pavement Replacements:** This project consists of replacing concrete pavement primarily in the Meadows Allotment and Willoughby Hills Allotment.

12. **Oak Hill Road and Milltown Road Improvements and Roundabout:** This project will improve the north end of Oak Hill Road and the portion of W. Milltown Road from Oak Hill Road to Commerce Parkway by constructing curbs and gutters, new pavement, storm sewers, sidewalk, shared use path, and a roundabout at the intersection. The design was done by CESO. The construction cost estimate is $4.5 million and construction is to be completed by the end of the year.

13. **Long Road Booster Pump Station Improvements:** This project involves the replacement of the Long Road booster pump station, which will include a new pump and generator building, pumps, and piping. The construction contract has been awarded to Simonson Construction Services, Inc. in the amount of $899,337 and work should be completed by the end of the year.

14. **SR585 and SR3/83 Northbound Ramp Traffic Signal Replacement:** This project involves the replacement of the traffic signal at the SR585 and SR3/83 northbound ramp, in front of GOJO. The estimated cost of this project is $260,000 and work should be completed by the end of the year. Approximately $55,000 of this project is being funded by ODOT Jobs and Commerce Economic Development Program grant funding.

15. **2024 Sanitary Sewer Lining:** This project includes the cured-in-place pipe lining of approximately 13,000 feet of sanitary sewers. This project is being funded in part with an Ohio Public Works Commission grant/loan. The estimated cost of this project is $700,000 and work should be completed by the end of the year.

16. **W. Milltown Area Sanitary Sewer Improvements:** This project includes the extension and replacement of sanitary sewers and improvements to the Deer Creek lift station to serve planned development along the W. Milltown Road corridor.

17. **Well #S-3 Improvements:** This project includes the installation of an emergency natural gas generator at well #S-3. The construction contract has been awarded to Abbott Electric, Inc. in the amount of $166,500 and work should be completed by the end of the year.

18. **Billiar Street and Billiar Alley Waterline Replacement:** This project includes the replacement of the waterlines on Billiar Street and Billiar Alley. The estimated cost of this project is $300,000 and work should be completed by the end of the year.

19. **Cleveland Road North Lift Station Replacement:** This project involves replacing the Cleveland Road North lift station, which is located near Spruce Tree Village. The pumps will be sized to accommodate future development and an emergency generator and controls building will be constructed.

20. **E. Bowman Street Culvert Replacement:** This project involves the replacement of a culvert under E. Bowman Street at the Washington Street intersection.

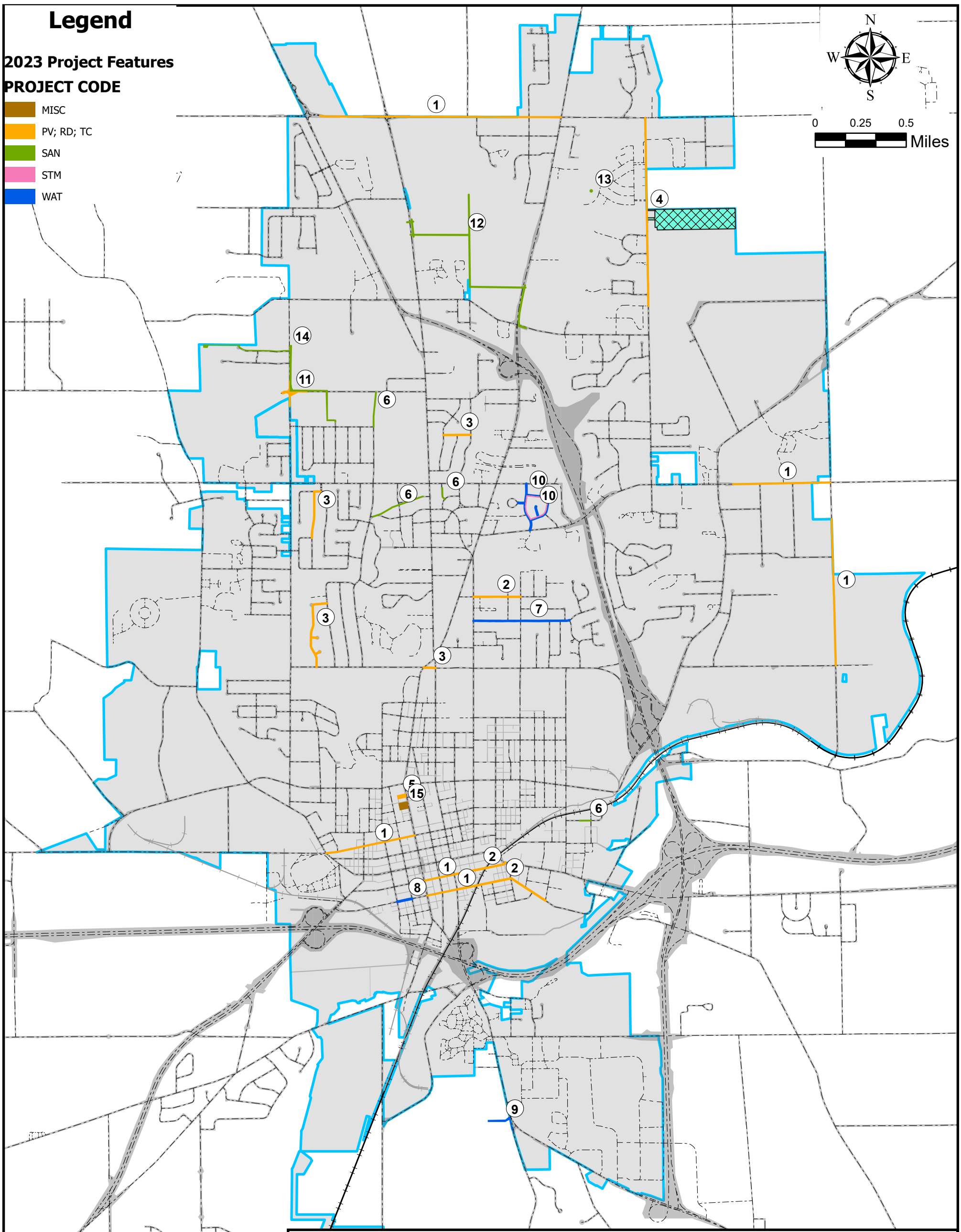
21. **Portage Road and Palmer Street Microsurfacing:** This project involves applying a microsurface to Portage Road (east of the Dix Expressway) and Palmer Street (south of Bowman Street) to extend the life of the asphalt surface.

22. **WRRF Headworks Improvements:** This project involves the replacement of two screens including adding a new building to house the screens, a new vortex grit system and grit chamber, and replacement of the existing influent pumps. The construction contract has been awarded to Workman Industrial Services, Inc. in the amount of $5,370,000.

23. **WRRF VLR #1 and #2 Improvements:** This project consists of the replacement of the rotors in the VLR #1 and #2 tanks with new fine bubble diffusers, mixers, a new blower, and all necessary piping.

The construction contract has been awarded to Workman Industrial Services, Inc. in the amount of $2,290,000.

24. **WRRF Biosolids Improvements:** This project involves the replacement of the anaerobic digester mixing system, covers, piping, and flares and the replacement of the gravity belt thickener. The estimated cost of the project is $4.6 million.



2023 City Infrastructure Projects

Completed or In-Progress 1/1/2023 to 12/31/2023

Completed Projects

#	PROJECT NAME	PROJ_NUMBER	DESCRIPTION	CONSTRUCTION DATES	PROJECT_CODE	YEAR
1	WAY-VAR Wooster Streets FY23 Resurfacing Project	212061	Paving	Completed Oct, 2023	PV	2023
2	2023 Wooster Streets Resurfacing	222044	Paving	Completed Sept, 2023	PV	2023
3	2023 Wooster Concrete Pavement Replacement	222043	Concrete repairs	Completed Sept, 2023	PV	2023
4	Melrose Drive Reconstruction Phase 2	202021	Roadway Improvements	Completed Nov, 2023	RD	2023
5	City Hall North Driveway	172058	Roadway Improvements	Completed March, 2023	RD	2023
6	2022 Sanitary Sewer Lining	222007	Sanitary Lining	Completed March, 2023	SAN	2023
7	Kieffer Street Waterline Replacement	212030	Waterline Replacement	Completed April, 2023	WAT	2023
8	W. Henry Street Waterline Replacement	232016	Waterline Replacement	Completed Oct, 2023	WAT	2023
9	Giffen Drive Waterline Replacement	212062	Waterline Replacement	Completed July, 2023	WAT	2023
10	Sherwood Hills Allotment Waterline Replacement	222005	Waterline Replacement	Completed Dec, 2023	WAT	2023
10	Sherwood Hills Allotment Storm Replacement	222005	Storm Replacement	Completed Dec, 2023	STM	2023

In-Progress Projects

#	PROJECT NAME	Project Number	DESCRIPTION	CONSTRUCTION DATES	PROJECT CODE	YEAR
11	Oak Hill - Oldman Roundabout	212024	Roadway Improvements	Under Construction	RD	2023
12	North End Sanitary Sewer	212063	Sanitary Sewer Improvement	Under Construction	SAN	2023
13	Melrose Lift Station Improvements	222022	Sanitary Sewer Improvement	Under Construction	SAN	2023
14	Oak Hill Road Sanitary Sewer Extension	212037	Sanitary Sewer Improvement	Under Construction	SAN	2023
15	Fire Station #1 Renovations	215011	Building Improvements	Under Construction	MISC	2023

CITY OF WOOSTER
DIVISION OF ENGINEERING
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JOHN RICE
CITY ENGINEER
jrice@woosteroh.com

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Private Developments

1. Private Subdivisions/Commercial Property under Construction:

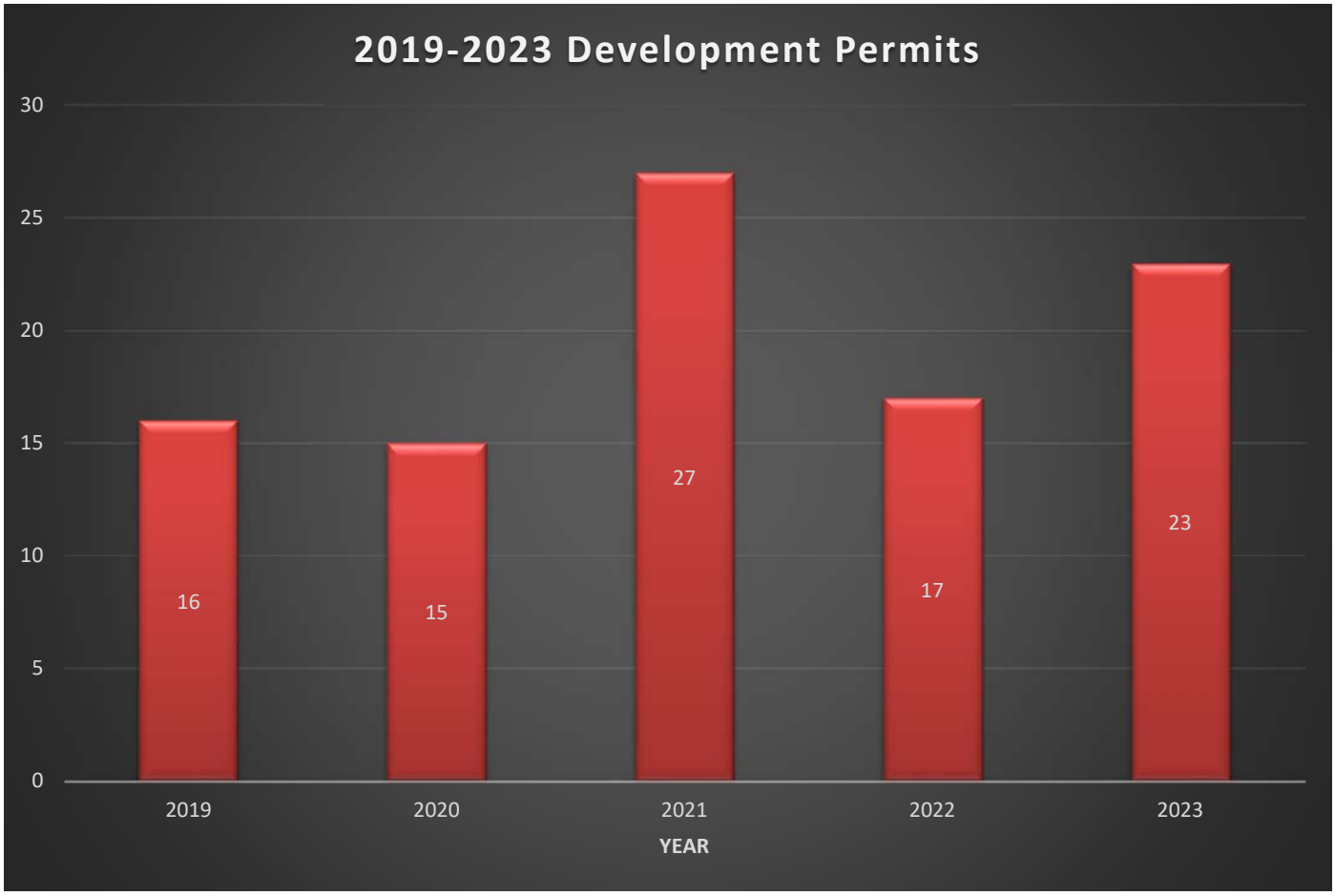
The Engineering Division saw 6 more Development Permits issued in 2023 (23) as compared to 2022 (17). New construction projects and additions to existing facilities made up a majority of the work.

Permits for the construction of the Northside Villas, College of Wooster Stadium and Turf project, Wooster Hospital additions, and the Daisy expansion top the list in terms of largest development projects.

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 2023

DEVELOP. #	PERMIT NO.	PROJECT NO.	NAME/DESCRIPTION	SITE IMP.S COST ESITIMATE	PERMIT FEE	DATE RECEIVED
1	DP-23-1	223057	Columbus Ave. Bellstores	$ 15,000	$ 150	1/9/2023
2	DP-23-2	223057	Columbus Ave. Bellstores	$ 10,000	$ 9,370	1/24/2023
3	DP-23-3		COW Stadium & Turf Project	$ 2,000,000	$ 150	1/30/2023
4	DP-23-4	233025	Daisy Process and Packaging Expansion Phase 1	$ 750,000	$ 931	2/8/2023
5	DP-23-5	233014	UPS MDC Addition	$ 350,000	$ 643	3/3/2023
6	DP-23-6		Fire Station 1 Improvements	$ 376,082	$ -	3/11/2023
7	DP-23-7		COW Univeristy Street Parking Lot	$ 100,000	$ 915	4/17/2023
8	DP-23-8		Triway Wellness Facility	$ 20,000	$ 428	4/19/2023
9	DP-23-9		4164 Burbank Road Sidewalk	$ 10,000	$ 150	4/19/2023
10	DP-23-10	233025	Daisy Process and Packaging Expansion Phase 2	$ 2,000,000	$ 13,318	5/4/2023
11	DP-23-11	233031	Germain Honda of College Hills Parking Lot Exansion	$ 350,000	$ 1,919	6/29/2023
12	DP-23-12	233012	Woodcrest Estates	$ 1,300,000	$ 47,615	7/6/2023
13	DP-23-13		7 Eleven	$ 300,000	$ 150	7/14/2023
14	DP-23-14	233032	WCH Helipad Relocation	$ 25,000	$ 2,935	9/1/2023
15	DP-23-15		Wayne County Larwill Street Parking Lot	$ 500,000	$ 1,286	9/19/2023
16	DP-23-16		Benden Dr. and Eagle Pass Apartments	$ 100,000	$ 8,028	10/16/2023
17	DP-23-17		Northside Villas	$ 7,511,704	$ 9,822	10/25/2023
18	DP-23-18		City Square Steakhouse Streetscape	$ 100,000	$ 840	10/26/2023
19	DP-23-19		Chipotle Beall Ave.	$ 250,000	$ 2,662	11/2/2023
20	DP-23-20		Goodwill Industries New Building	$ 100,000	$ 4,119	11/28/2023
21	DP-23-21		COW Tennis Court Temparary Parking	$ 5,000	$ 500	12/5/2023
22	DP-23-22		Local Roots of Wooster	$ 100,000	$ -	12/19/2023
23	DP-23-23		WCH Emergancy Department Addition	$ 2,000,000	$ -	12/21/2023
				$ 18,272,786	**$ 105,931**	



ENGINEERING FEES AND REVENUES:

The following table details the revenues, excluding Development Permits, received by the Division of Engineering from 2019 through 2023.

	2019	2020	2021	2022	2023
Right-of-Way Permits	$ 23,660.00	$ 16,600.00	$ 13,610.00	$ 18,830.00	$ 180,363.00
General Stormwater Management	$ 675.00	$ 990.00	$ 450.00	$ 900.00	$ 2,160.00
Yard Pipe Permit	$ -	$ 130.00	$ -	$ -	$ -
Sanitary Sewer Tap Permit	$ 2,080.00	$ 2,210.00	$ 1,170.00	$ 610.00	$ 520.00
San. Sewer Availability Charge	$ 60,602.00	$ 18,436.00	$ 41,979.00	$ 10,908.00	$ 10,500.00
Water Service Permit	$ 1,690.00	$ 1,610.00	$ 520.00	$ 1,000.00	$ 650.00
Water Availability	$ 57,141.00	$ 34,792.00	$ 49,450.00	$ 35,100.00	$ 9,750.00
Total Fees Collected	$ 145,848.00	$ 74,768.00	$ 107,179.00	$ 67,348.00	$ 203,943.00

Permissive Tax Revenue:	2019	2020	2021	2022	2023
	$110,878.88	$136,603.28	$115,064.85	$112,166.89	114,058.60

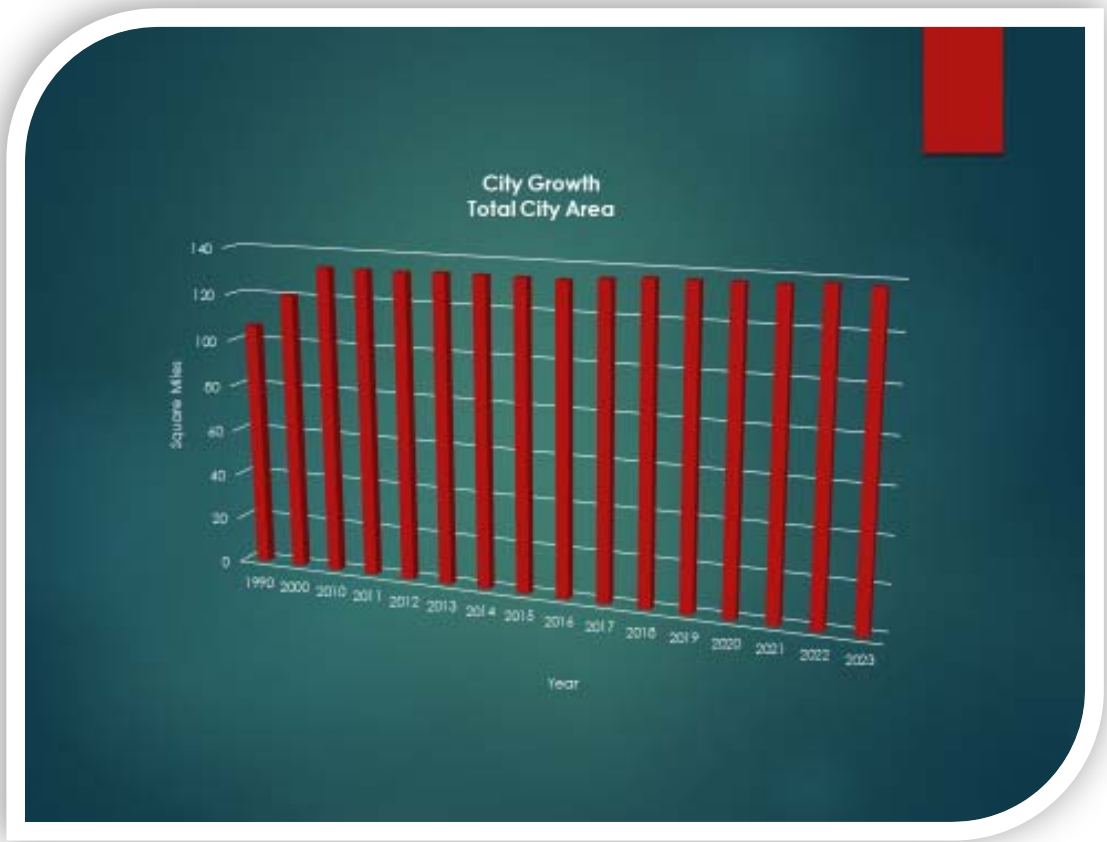
*The Wayne County Engineer began sending reports on a quarterly basis in 2018.

Permissive tax revenue represents the portion of the state vehicle license tax received by the City. These funds are released to the City based on roadway construction expenditures for projects managed by the Division of Engineering. The Division requests disbursement of these funds when they become available. The total funds requested and released from 1969 to December 2023 is $5,340,476.74.

ODOT Reimbursement: $ 571,735.00

The Engineering Division requests reimbursement from ODOT for construction on ODOT funded projects. The City had one paving project that had reimbursable costs in 2023.

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
2023	27,031	(c)	17.54 Sq. Mi	137.99 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		6,609.31	9.39	0
1980	-1.579	6,607.73	10.325	-0.024
1990	1,598.04	8,205.77	12.822	24.184
2000	1,885.36	10,091.13	15.767	22.976
2010	1,002.41	11,093.54	17.334	9.934
2011	0	11,093.54	17.334	0
2012	1.61	11,095.15	17.336	0.015
2013	141.202	11,236.35	17.557	1.273
2014	0	11,236.35	17.557	0
2015	0	11,236.35	17.557	0
2016	6.69	11,243.04	17.567	0.06
2017	94.56	11,266.75	17.604	0.841
2018	162.49	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
2023	37.96	11,226.50	17.54	0.339
GIS mapping allowed for a more accurate calculation of historical map areas.				

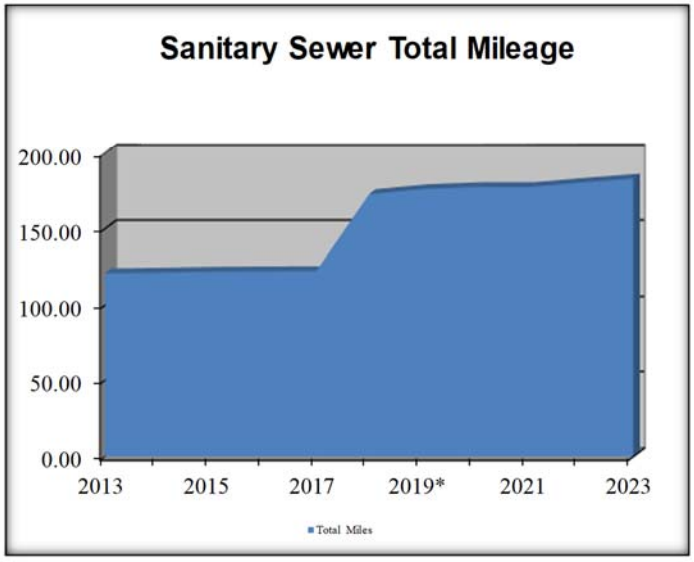
2023 Annexations			
No.	Description	Date	Area
1	Melrose Drive	4/18/2023	32.24 Acres

Utility Statistics

Sanitary Sewer Mileage

Sanitary Sewer Mileage

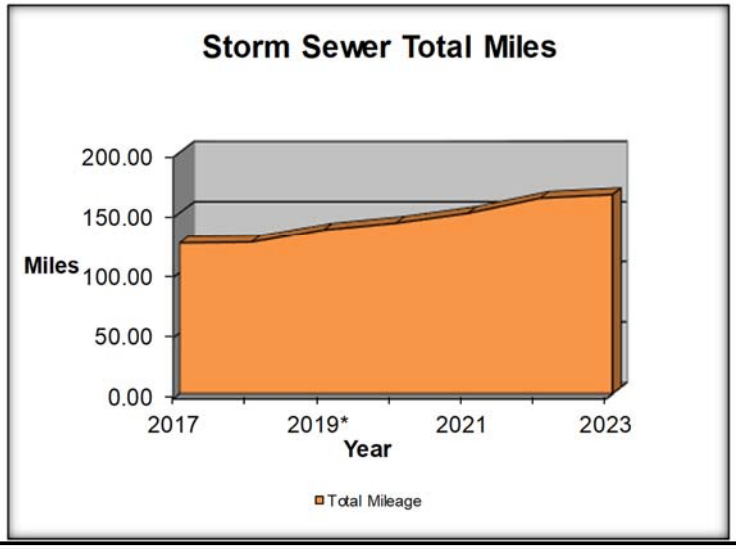
Year	Increase in Miles	Total Miles	% Increase
2009	1.73	119.31	1.47%
2010	0.46	119.77	0.39%
2011	0.00	119.77	0.00%
2012	0.21	119.98	0.18%
2013	0.92	120.90	0.77%
2014	0.45	121.35	0.37%
2015	0.66	122.01	0.54%
2016	0.21	122.22	0.17%
2017	0.13	122.35	0.11%
2018	0.00	172.75	0.00%
2019*	3.30	176.05	1.91%
2020	1.27	177.32	0.72%
2021	0.01	177.33	0.01%
2022	3.00	180.33	1.69%
2023	2.67	183.00	1.46%



Storm Sewer Mileage

Storm Sewer Mileage

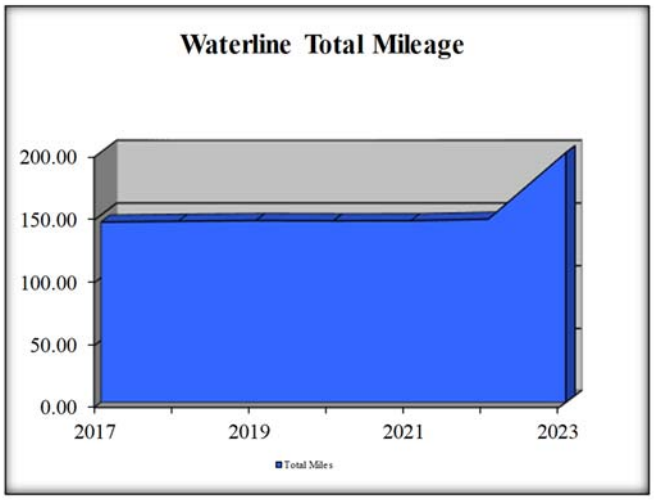
Year	Increase in Miles	Total Mileage	% Increase
2009	2.51	118.89	2.16%
2010	0.10	118.99	0.08%
2011	0.48	119.47	0.40%
2012	0.59	120.06	0.49%
2013	0.34	120.40	0.28%
2014	2.04	122.44	1.69%
2015	0.01	122.45	0.01%
2016	0.33	122.78	0.27%
2017	0.00	124.61	0.00%
2018	0.75	125.36	0.60%
2019*	10.36	135.72	8.26%
2020	5.79	141.51	4.27%
2021	8.26	149.77	5.84%
2022	12.48	162.25	8.33%
2023	3.02	165.27	1.86%



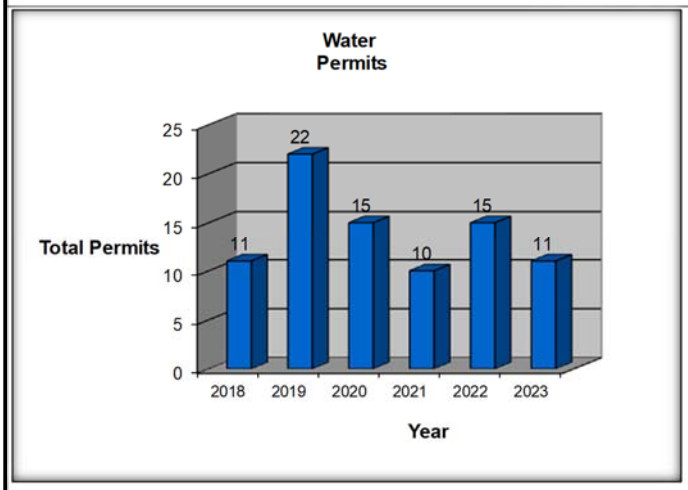
Waterline Mileage

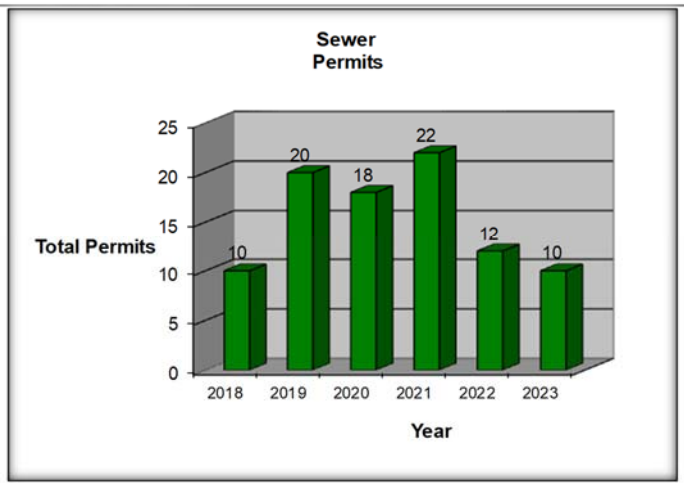
Waterline Mileage

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%
2023	53.00	199.71	36.13%

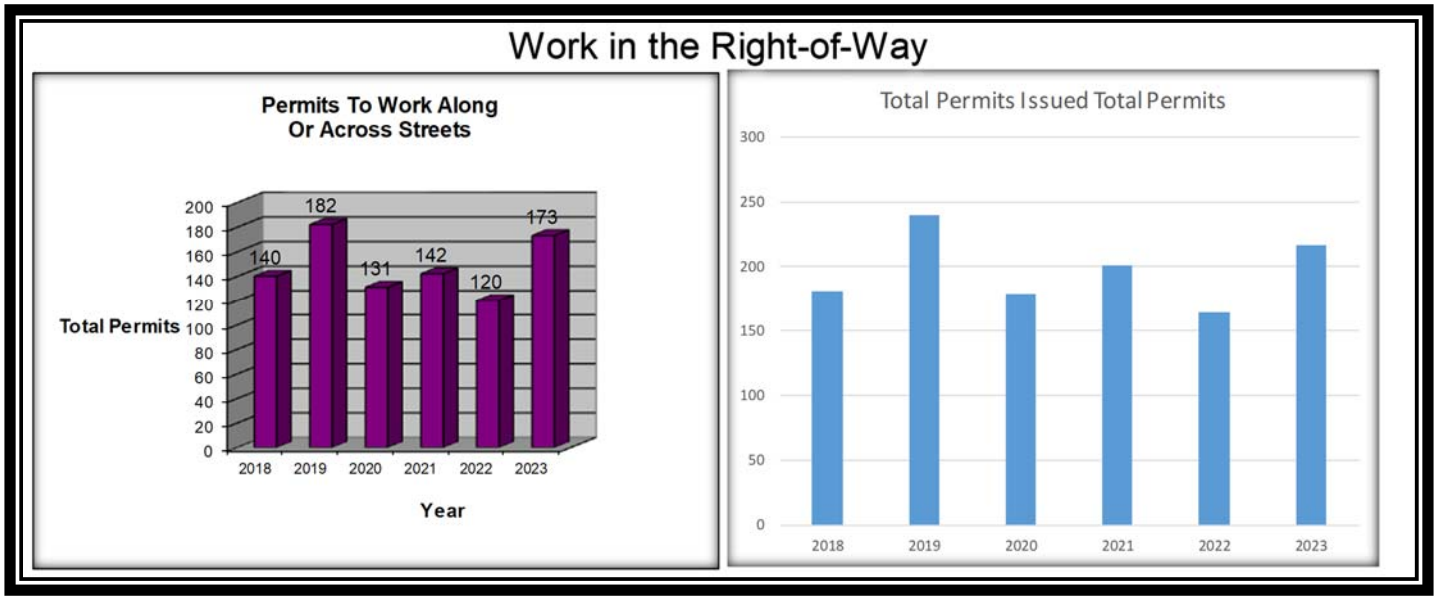


Water & Sewer Permits



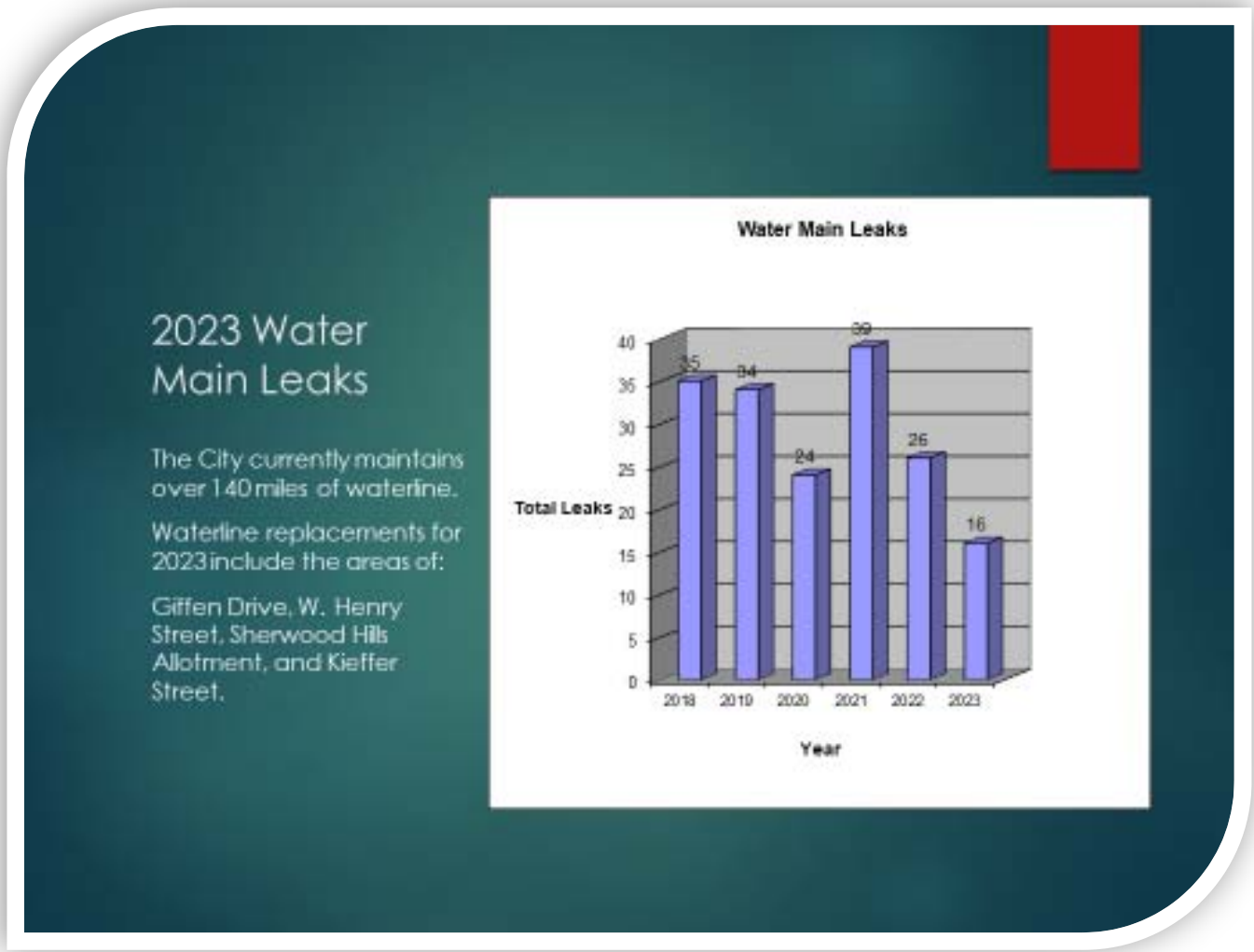


Water and Sewer Permits remain fairly level throughout the years; however, in the past few years we saw several large new developments and new constructions that required water and sanitary permits. Permits are issued for these utilities for any new development or whenever the need for a replacement 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.

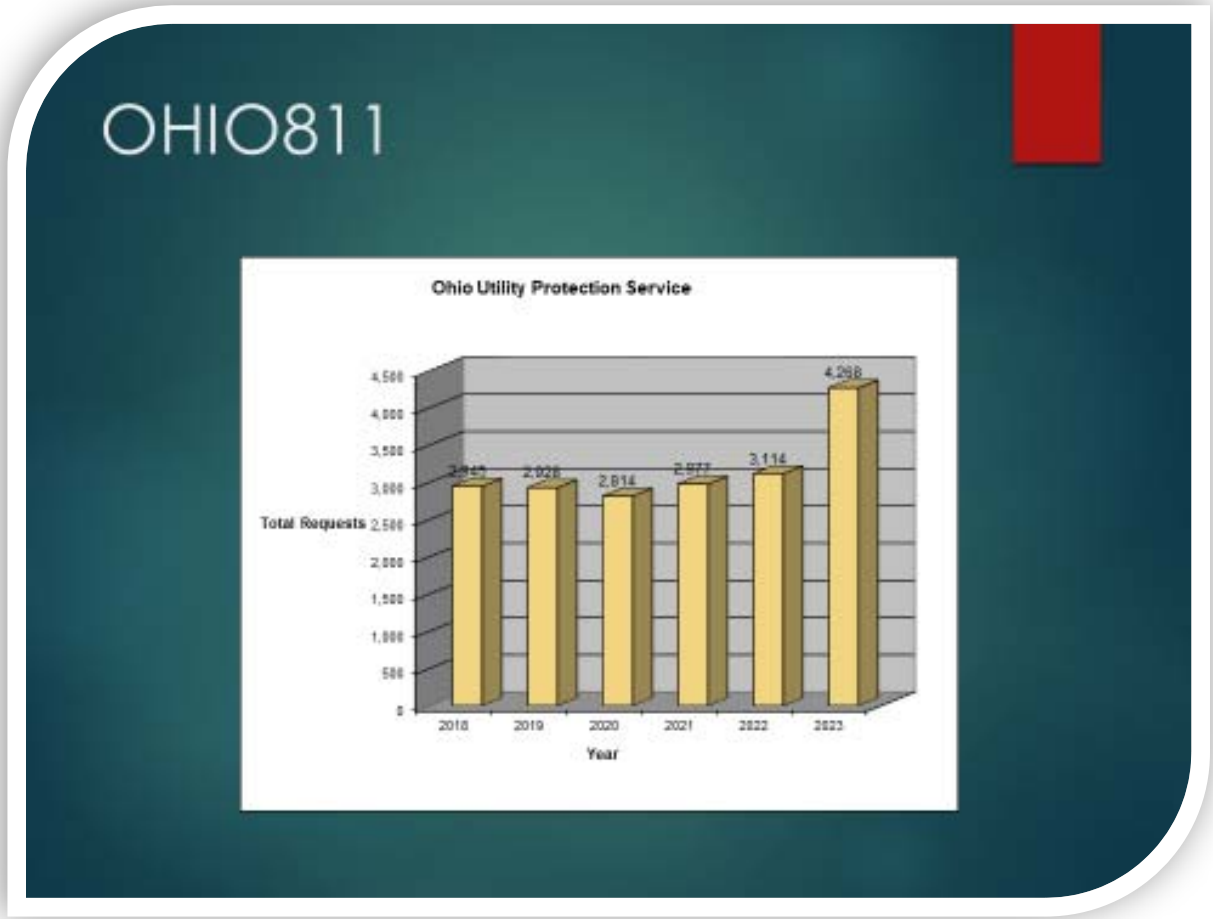


Dominion Energy Ohio continues to be the primary company obtaining Right-of-Way Permits. The company is in the process of improving their infrastructure throughout the city and replacing their main lines. Right-of-way permits are required any time there will be work along the City's streets and/or across the street and 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.

Omni Fiber has started building a 100% fiber network in Wooster. Omni has been working under one right-of-way permit and has been paying for individual sections, hence the spike in right-of-way revenue. Omni itself has contributed roughly $113,000 of the $180,000 in revenue. The Individual sections have plans that are submitted to the engineering division that are then reviewed and are approved or sent back for revision. The installation of the fiber optic will take place both along public streets and in backyards within existing utility easements that already contain electric, cable, and telephone utilities. Omni has approximately ½ to ¾ completed with hopes to be done by mid-2024.



The number of water breaks in 2023 decreased from 2022. The City has increased its effort to locate main line leaks and breaks to more accurately quantify the amount of unaccounted for water.



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.

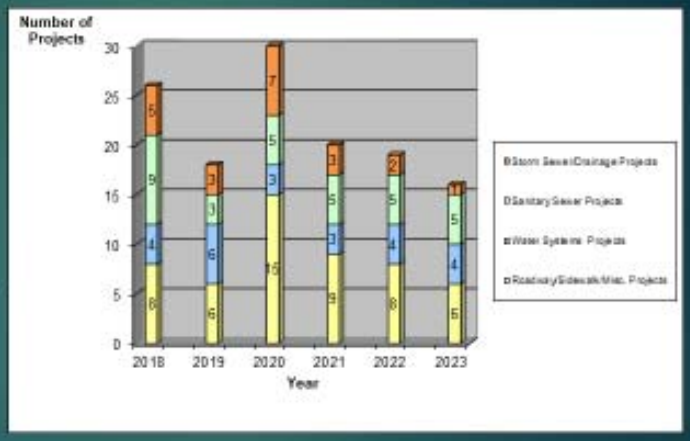
Engineering Design Statistics

Breakout for Types of Projects

The Division of Engineering staff designed 12 of the 16 projects for 2023.

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

2023 saw our design cost average to be 4.7%.

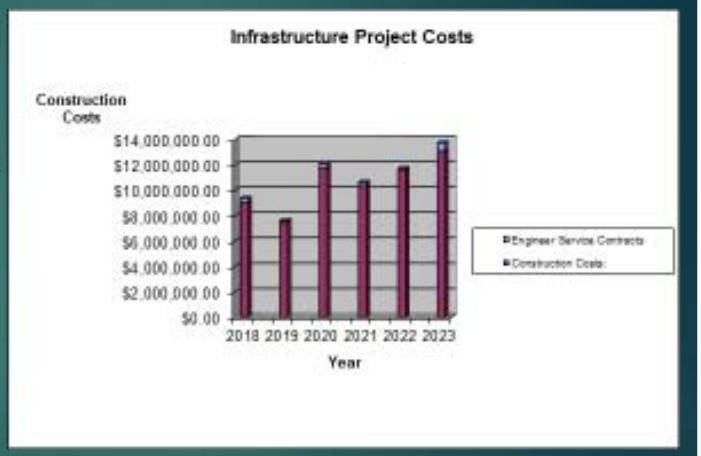


Project Cost over the years

The Engineering Division oversaw $13,118,253.00 of infrastructure construction projects in 2023.

Outside design contracts totaled $615,800.

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



DIVISION OF ENGINEERING

2023 Project Summary

(Projects Designed or Constructed in 2023)

PROJECTS UNDER CONSTRUCTION IN 2023	DESIGNER/CONSULTANT	DESIGN COST	CONTRACTOR	ESTIMATED CONST. COST	BID PRICE	FINAL COST	CONTRACT BALANCE	PERCENT COMPLETE	RETAINAGE	2023 CONSTRUCTION PAYMENTS
2022 Sanitary Sewer Lining	Wooster Engineering	$0	Insight Pipe Contracting, LLC	$163,000	$131,012	$127,383	$0	100%		$127,383
2023 Wooster Concrete Pavement Replacement	Wooster Engineering	$0	TR Snyder Construction, Inc.	$325,000	$276,176	$426,716	$0	100%		$426,716
2023 Wooster Streets Resurfacing	Wooster Engineering	$0	Melway Paving Company	$500,000	$442,696	$575,520	$0	100%		$575,520
City Hall Parking Lot Expansion	Wooster Engineering	$0	Rising Son Company, Inc.	$100,000	$104,990	$111,494	$0	100%		$111,494
Fire Station # 1 Renovation	Mull & Weithman	$421,300	Adena Corporation	$5,400,000	$5,091,300	UC	$4,029,613	26%	$101,619	$1,934,898
Giffen Road Waterline Replacement	Wooster Engineering	$0	Palmer & Son Excavating, Ltd.	$180,000	$201,377	$194,442	$0	100%		$194,442
Kieffer Street Waterline Replacement	Wooster Engineering	$0	Dirt Dawg Excavating, LLC	$600,000	$547,095	$537,228	$0	100%		$537,228
Melrose Drive Reconstruction Phase 2	Wooster Engineering	$0	Dirt Dawg Excavating, LLC	$3,860,000	$3,927,811	$4,029,654	$0	100%		$3,342,118
Melrose Lift Station Improvements	Wooster Engineering; Laddie Wolfe	$12,000	Bogner Construction Company	$400,000	$392,729	UC	$244,094	38%	$11,890	$148,625
North End Sanitary Sewer	Wooster Engineering	$0	GE Baker Construction, Inc.	$1,500,000	$1,477,120	UC	$748,023	50%	$59,085	$428,709
Oak Hill Road Sanitary Sewer Extension	Feller, Finch & Associates	$53,000	Wenger Excavating, Inc.	$1,525,540	$1,759,779	UC	$60,696	39%	$60,696	$1,801,333
Oldman/Oak Hill Roundabout	Kleinfelder	$31,000	Dirt Dawg Excavating, LLC	$1,400,000	$1,019,551	UC	$108,710	90%	$40,782	$910,841
Sherwood Hills Allotment Waterline and Storm Sewer Replacement	Wooster Engineering	$0	Dirt Dawg Excavating, LLC	$1,000,000	$947,427	$921,796	$0	100%		$921,496
WAY-VAR Wooster Streets FY23	Wooster Engineering	$0	Melway Paving Company	$1,150,000	$950,841	$917,041	$0	100%		$917,041
W. Henry Street Waterline Replacement	Wooster Engineering	$0	Dirt Dawg Excavating, LLC	$90,000	$91,276	$86,970	$0	100%		$86,970
Curb Ramps for FY23 Resurfacing	Wooster Engineering	$0	Smith Paving and Excavating, Inc.	$48,000	$45,996	$36,498	$0	100%		$36,498
WRRF VLR # 5 Improvements	Jones & Henry, Ltd.	$110,500	Stanley Miller Construction	$1,100,000	$1,211,000	UC	$671,518	45%	$43,158	$539,482
	Subtotals	**$627,800**		**$19,341,540**	**$18,618,176**	**$7,964,742**	**$5,862,654**			**$13,040,794**

Under Construction Engineering Summary		
City of Wooster Engineering Division		
Value of Construction Engineering[1]	10%	$1,304,079
Design Value Provided[2]	8.5%	$954,745
Consultant Services		
Total Cost		$627,800
Percentage of Construction		3.2%

PROJECTS DESIGNED OR UNDER DESIGN IN 2023	DESIGNER/CONSULTANT	DESIGN COST	CONTRACTOR	ESTIMATED CONST. COST	BID PRICE	STATUS
WAY-VAR Wooster Streets FY24	Wooster Engineering	$0	Melway Paving, Inc.	$910,000	$759,370	DC
Palmer Street Bridge Waterline	Engineering Associates, Inc.	$9,000	Cistone's Excavating Services, LLC	$170,000	$164,527	DC
Palmer Street Waterline Replacement	Wooster Engineering	$0		$800,000		DC
S. Bever Street Sewer Separation	Wooster Engineering	$0	Dirt Dawg Excavating, LLC	$245,000	$209,849	DC
Quinby Avenue Traffic Signal Replacements	Burgess & Niple	$24,950	Perram Electric, Inc.	$415,000	$435,575	DC
Christmas Run Park Pickleball Courts	Wooster Engineering	$0	RMH Concrete & Foundations, Inc.	$230,000	$224,460	DC
Oak Hill Road Curb Ramp Replacement	Engineering Associates, Inc.	$37,525	Smith Paving and Excavating, Inc.	$125,000	$101,924	DC
Well # S-3 Improvements	Laddie Wolfe	$23,000	Abbott Electric, inc.	$170,000	$166,500	DC
Billiar Street and Billiar Alley Waterline Replacement	Wooster Engineering	$0		$300,000		DC
Oak Hill Road and Milltown Road Improvements	CESO	$174,000		$5,000,000		DC
Christmas Run Blvd Sanitary Sewer Replacement	Wooster Engineering	$0	Underground Utilities, Inc.	$1,700,000	$1,071,755	DC
Downtown Streetscape Phase 4	Wooster Engineering	$0	Brennstuhl Construction, Inc.	$350,000	$340,415	DC
Long Road Booster Station Improvements	Wooster Engineering/Utilities	$0	Simonson Construction Services, Inc.	$750,000	$899,337	DC
WRRF VLR # 1 and # 2 Improvements	Jones & Henry, Ltd.	$94,450	Workman Industrial Services, Inc.	$2,500,000	$2,290,000	DC
WRRF Biosolids Improvements	RETTEW	$306,500		$4,600,000		DC
WRRF Headworks Improvements	Jones & Henry, Ltd.	$425,000	Workman Industrial Services, Inc.	$5,400,000	$5,370,000	DC
654 Winkler Drive Storm Sewer Replacement	Wooster Engineering	$0	Rising Son Company, Inc.	$70,000	$60,000	DC
	Subtotals	**$1,094,425**		**$23,735,000**	**$12,093,712**	
2024 Wooster Streets Resurfacing	Wooster Engineering	$0		$725,000		UD
SR585 and SR3/38 Northbound Ramp Traffic Signal Replacement	Burgess & Niple	$17,500		$260,000		UD
Wooster Bike Loop 3	Engineering Associates, Inc.	$150,000		$1,750,000		UD
2024 Sanitary Sewer Lining	Wooster Engineering	$0		$700,000		UD
SR585 Widening and Turn Lanes	Wooster Engineering	$0		$500,000		UD
	Subtotals	**$167,500**		**$3,935,000**		

Design Completed Engineering Summary		
City of Wooster Engineering Division		
Design Value Provided[2]	8.5%	$923,050
Consultant Services		
Total Cost		$1,094,425
Percentage of Construction		4.6%

Under Design Engineering Summary		
City of Wooster Engineering Division		
Design Value Provided[2]	8.5%	$166,975
Consultant Services		
Total Cost		$167,500
Percentage of Construction		4.3%

Engineering Summary	
City of Wooster Engineering Division	
Total Engineering Services Provided	$3,348,849
Consultant Services	
Total Cost	$1,889,725
Percentage of Construction	4.6%

Footnotes:

1. Average cost of construction engineering is 10% of construction cost per industry standards.
2. Average cost of design engineering is 8.5% of construction cost per industry standards.

Abbreviations
UC = Under Construction
DC = Design Complete
UD = Under Design

Note: Engineering consultant services and construction costs shown in this table represent totals as of year end. Actual expenditures may have occurred over several years.