

CITY OF WOOSTER  
DIVISION OF ENGINEERING  
2011 Annual Report



Akron Road – Phase 1

Prepared by:

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February, 2012



## **Division of Engineering 2011 Annual Report Executive Summary**

The 2011 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, 2011. 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 near 3% for 2011. 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 major projects alone was over \$958,714 in 2011.

The Engineering Division managed 11 infrastructure projects in 2011. The total dollar value of construction projects completed or under construction in 2011 was close to \$9,000,000. Final construction costs were 4.2% higher than the contracts awarded price. The increase was mainly due to improvements made at the Oak Hill project and extra work done at the Frito-Lay Biotower.

The Engineering Division is responsible for managing the replacement and improvement of the City's infrastructure. Including construction and development in 2011, the City now has over 400 miles of piping in its utility system and over 130 miles of roadway in its transportation system; 70% of the utility infrastructure is greater than 20 years old.

The Engineering Division also reviews and issues permits for all utility and site work construction activity in the City, as well as enforcing the City's Site Development Regulations and Storm Water Management Regulations. 211 permits were issued in 2011 compared to 189 in 2010. The increase in permit activity came from sanitary sewer permits. Wayne County and the City of Wooster have been working in cooperation with the Ohio EPA to connect the Batdorf Road area to the City's sanitary sewer system. There are 120 residents that have a May 2012 deadline to connect to the new main. As of December 31<sup>st</sup>, there had been 29 sanitary sewer permits issued and 21 connections done for this project.

The Engineering Division is also the City's representative for the Ohio Utilities Protection Service, and is responsible for locating and marking all city owned utilities whenever requested by contractors and proposed development. These requests have consistently numbered over 2000 each year since 1991. In 2011 we processed our greatest number of OUPS requests (2423) with most utility locations being marked within 24 hours of the request.

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



## Division of Engineering Mission Statement and Objectives

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

**2012 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.

### **Personnel:**

<b>Name</b>	<b>Title</b>	<b>Years Experience</b>
Joel Montgomery	City Engineer, Licensed Professional Engineer	19
Roger Kobilarcsik	Staff Engineer, Licensed Professional Engineer	22
Ronald Middleton	Inspector II, Licensed Professional Surveyor	40
BJ Hoffman	Inspector II, B.S. Degree Construction Technology	24
Dave Case	Inspector II, Assoc. Degree Civil Eng. Technology	18
Matt Hill	Inspector II, ODOT Right-of-Way Certification	27
Spencer Gray	Engineering Technician/Drafter	27
Tom Hart	Engineering Technician/GIS Technician	29
Lynne DePaulo	Administrative Assistant/Contract Specialist	33

Personnel costs were kept low by significantly reducing overtime, training and education to only that necessary to maintain required professional licensures.

### **Operations:**

O&M costs have been reduced by reducing equipment, supplies and materials to only those items absolutely essential to perform job duties.

### **Capital:**

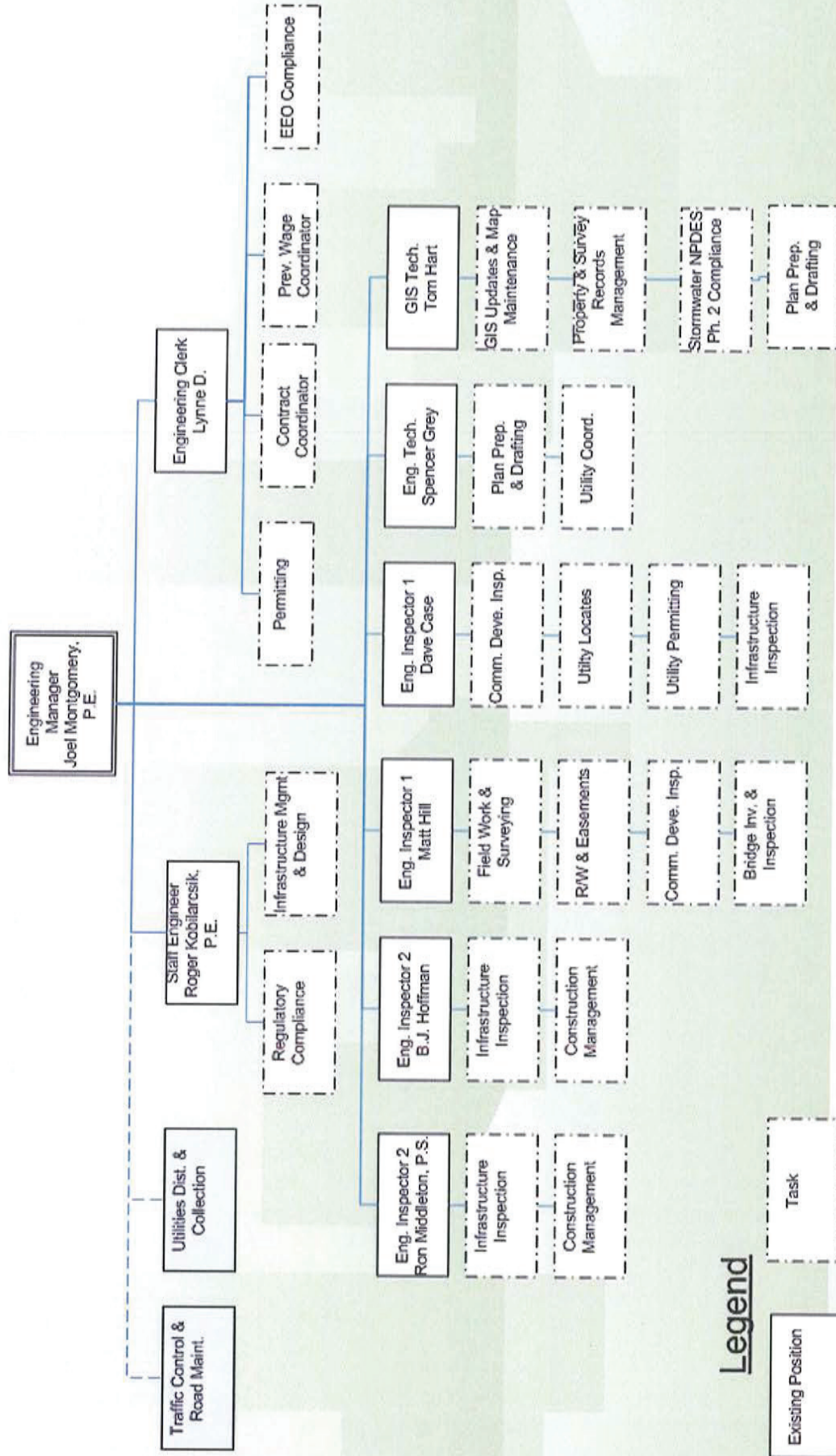
Infrastructure expenditures have been reduced to only those items receiving outside funding. In addition, the City participation amounts have been reduced by eliminating contractual services where possible and providing surveying, design and construction administration services with in-house staff.

By utilizing nearly \$400,000 in grant money, the Engineering Division has been able to continue paving, roadway and sewer separation projects with minimal direct cost to the city. Melrose Drive Improvements, Oak Hill Park and Pavement Rehab-Microsurfacing are just a few examples of projects using grant money. We also actively pursue zero interest or low interest loans provided by various federal agencies. Currently we have 5 projects under or near construction that are being partially funded by ODOT.

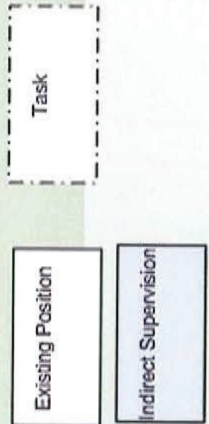
# City of Wooster

## Division of Engineering

### Organizational Chart



### Legend





**Division of Engineering  
2011 Project Narrative  
February, 2012**

**INFRASTRUCTURE PROJECTS COMPLETED OR UNDER CONSTRUCTION IN 2011:**

- 1. Frito-Lay Bio-Tower – Contract A:** A bio-tower has been constructed at the Frito-Lay discharge location. The Bio-tower project was designed by ATS Engineering and has an estimated construction cost of \$2,481,400.00. Workman Industrial was awarded the contract with a bid price of \$2,377,738. The work has been completed, but several areas of operation are still being adjusted before retainage will be released. The final construction cost for the project was \$2,422,050.
- 2. Gasche Street Sewer Separation:** This project was designed by the Engineering Division and consists of the installation of storm sewer and storm laterals for the purpose of separating storm sewer flows from the sanitary sewer per Ohio EPA mandates. The engineer's estimate for construction is \$1,100,000. The bid opening was held in June, 2010 with Stout Excavating being awarded the contract for \$991,185.00. The project is 95% complete as of the end of 2011. Pavement of Wilson and an alley are slated to be done in the spring of 2012 which will complete the project.
- 3. SR585/Akron Road Reconstruction – Phase 1 :** This project was designed with the intent to reduce congestion and improve safety by installing storm sewers, curb, gutter and sidewalks, bike lane, adding a turn lane, flattening the curve and reconfiguring lane usage at Portage Road and providing a new surface course over the existing roadway between Old Airport Road and Gateway Drive. The project estimate for Phase 1 is \$1,700,000 and is partially funded by ODOT.

The project was bid in April, 2011 with a total of 5 contractors submitting bid proposals. Stout Excavating was awarded the contract with a price of \$1,751,087.88. Work began immediately and the roadway project is near 80% completion as of year end.
- 4. Melrose Drive Improvements:** The Wooster Engineering Division completed the design to improve approximately 4,200 linear feet of Melrose Drive by widening the roadway, improving intersections and upgrading utilities. The construction estimated cost for this project is \$2,245,000 with OPWC providing a \$500,000 grant.

Seven contractors submitted bids in October, 2011 for the construction of this roadway improvement project. The contract was awarded to Terra Valley Excavating with a bid price of \$1,988,022. Utility relocations and clearing of the area began in November. Excavating for storm sewer and waterline placement will begin early spring of 2012. Roadway construction will follow closely behind the utility work with an anticipated final construction date of April, 2013.



5. **Burbank Road W/L – Phase 1:** This project was designed by the Wooster Engineering Division and consists of replacing existing under-sized and corroded cast iron water mains, upgrading water services and replacing fire hydrants. The project limits are from the intersection of Burbank and Cleveland Road to the south and north to Elm Drive. Funding for this project will be a combination of local funds and OPWC funding. Construction cost estimate for this project is \$745,000.

The project was advertised for bidding in August, 2011. G.E. Baker was awarded the contract with a bid price of \$706,473.00. The work is approximately 75% done as of the end of the year. The project is currently on hiatus until early spring when the contractor will begin connection of the water services.

6. **Oak Hill Park:** The Wooster Engineering Division designed the hiking and biking trails for the development of the Oak Hill Park. Improvements included a 10' wide 1.8 multi-modal trail along with a smaller loop specifically designed to be ADA compliant for the mobility challenged; a pavilion and restroom.

Contract A was the grading, excavation and paving of the parking lot and trails. The estimated cost was \$490,000 and was bid in May. Stout Excavating was awarded the bid with the best combination of base bid and alternates for a total bid price of \$458,514. The final cost of construction was \$538,444 and the park was opened to the public in October.

Contract B was for the electrical work needed in the restroom and pavilion. Hilscher Clarke was awarded the contract with a bid price of \$10,632 and a final contract price of \$19,732.

7. **Larwill Street Resurfacing:** This project consisted of resurfacing Larwill beginning at Market Street and continuing west to Liberty Street. The cost estimate was established at \$80,000 and the project was offered to bid in September. PCS Paving was awarded the contract with a bid price of \$84,991. The work was completed by November with a final project cost of \$91,650.

8. **Portage Road Resurfacing:** The project includes pavement planning, pavement repair, asphalt concrete surface course and asphalt concrete intermediate course for the area from Cleveland Road east approximately 2900' linear feet. The contract was awarded to Kokosing in May with a bid price of \$228,310. The final project cost was \$240,355.

9. **Pavement Rehab – Microsurfacing:** It was determined by the Wooster Engineering Division that the City could benefit by instituting the microsurfacing application to lengthen the life of five roadways within the City limits. The State procurement process was used to award the microsurfacing project to Strawser with a project cost of \$179,002. Final cost to the city was \$169,260.

10. **SR83/Friendsville Road Signal Improvement:** Burgess & Niple designed the signal improvement project with an estimate of \$120,000. The work consists of furnishing labor, supplies, equipment, materials and performing all operations necessary for the installation of new traffic control devices.

The City received 5 bids for the work and awarded the contract to Lafayette Electric with a bid price of \$142,990.58. Work is anticipated to begin in February 2012.



## **INFRASTRUCTURE PROJECTS SCHEDULED/PLANNED FOR 2012:**

1. **North High Water Tank:** This project is under design by the Division of Engineering with a current estimate of \$1,605,000. This project will provide water storage in a portion of the City's water system which currently provides less than ½ day of storage based on current average water usage.
2. **SR585/Akron Road Reconstruction – Phase II:** This project is being designed with the intent to reduce congestion and improve safety by installing storm sewers, curb, gutter and sidewalks, bike path, adding a turn lane and providing a new surface coarse over the existing roadway between Gateway Drive and Long Road. The project estimate is \$2,529,940.00 and will be partially funded by ODOT.
3. **South Street Renovation:** This project consists of upgrading South Street between Walnut Street and Grant Street. This project is part of the renovation of the Library Campus. Improvements include updating an existing cast iron waterline, new curb and gutter, new sidewalks and new pavement and new signal at the intersection of Liberty and Walnut. The estimated construction cost is \$245,000. A portion of this project is being funded by the Cultural Facilities Commission and OPWC.
4. **Merchant Block Parking Lot Improvements:** The City of Wooster Engineering Division has designed a new parking lot Liberty and Walnut as part of the development of Merchant's Block. A waterline will also be placed to provide services for the proposed businesses and residential townhouses.
5. **OARDC – SR 302 Crosswalks:** This project is being coordinated with the OARDC/ATI to install crosswalks and sidewalks in the recently annexed area on SR 302 adjacent to the campus. Construction of these crosswalks is part of the annexation agreement between the OARDC with costs being shared. The engineer's estimate for this project is \$23,000.
6. **Burbank Road Sanitary:** This project is being designed by the Wooster Engineering Division and consists of replacing two existing vitrified clay sanitary sewer lines with a new PVC sanitary sewer. The existing sanitary sewer will be converted to a storm sewer with additional catch basins added in preparation of resurfacing Burbank Road in 2013. Construction cost estimate for this project is \$700,000.
7. **Melrose Booster Station:** This project consists of construction of a booster station to pump water from the intermediate zone to the proposed north high zone tank. The station includes a pump building, pumps, electrical, telemetry, waterline piping and backup generator. Construction cost estimate for this project is \$644,500.
8. **Spring Street W/L:** This project will be designed by the Wooster Engineering Division and consists of replacing an existing cast iron waterline with a new larger ductile iron waterline. Improvements include upgrading water services and new fire hydrants. The construction cost



estimate for this project is \$522,500 and is partially funded through OPWC with a grant of \$300,000.

9. **Friendsville Road Reconstruction:** This project is being designed by GPD Associates and consists of replacing curb, gutter and sidewalks and widening the road to accommodate the additional traffic between Riffel and Burbank Roads. The construction cost estimate is \$2,000,000. Right-of-way acquisition will take place in 2012; construction will begin as soon as all right-of-ways have been acquired.

10. **Wooster Gateway Projects:** The project is located at the intersection of SR 30 and Madison Avenue (SR 302) adjacent to downtown Wooster, Ohio. It consists of landscaping elements including trees, shrubs and wildflower plantings. Other design elements include identity and directional signage, minor sidewalk improvements, and site elements. Engineers estimate is \$375,000.

11. **Safe Routes to Schools:** The City of Wooster in conjunction with the Wooster City Schools has determined several areas within the city that will benefit from installation of sidewalks; enabling a greater number of students to safely walk to school which should help reduce traffic congestion at many of the elementary schools. With financing through ODOT, the first area to be improved will be Melrose Drive from Portage Road to Melrose Elementary School.

12. **Spink Street (North of Bowman) Sewer Separation:** This project is another on the mandated OEPA sewer separation project list. It is being designed by the City of Wooster Division of Engineering and has a cost estimate of \$935,000. The project includes 3110' of storm sewer, catch basins and manholes. A \$500,000 OPWC grant will be applied for.

13. **Market/Spruce Sewer Separation:** This project is still in the design phase. The cost estimate is \$440,000 and a loan from OPWC in the amount of \$265,000 has been obtained. The project will entail construction of approximately 1410' of storm sewer, catch basins and manholes.

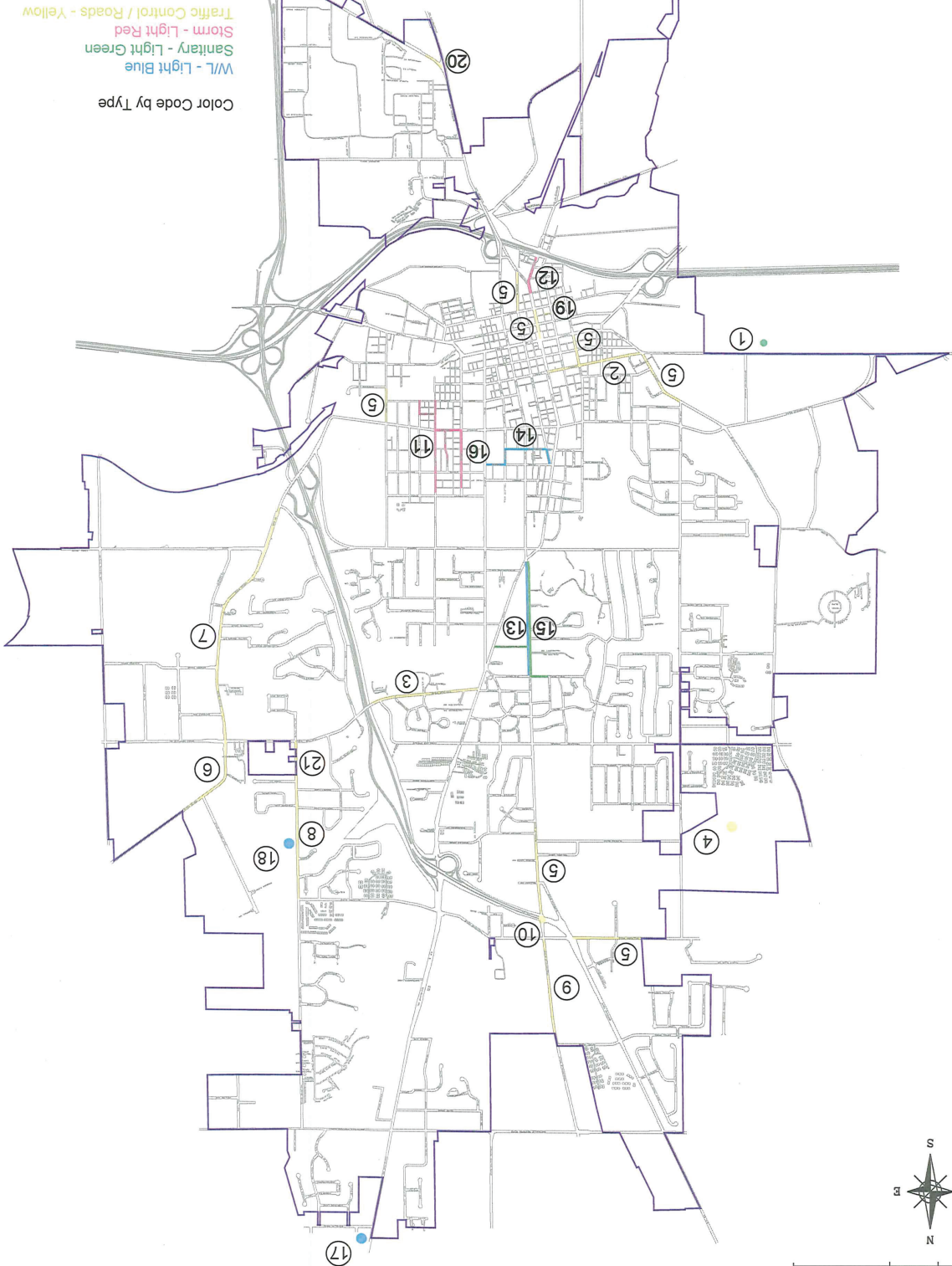
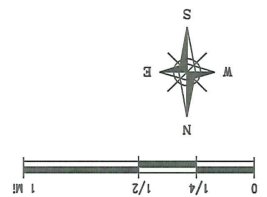
14. **Water Tank Painting:** The Water Storage Tanks located at the OARDC and Madison Avenue are slated to be repainted this summer. The Engineering Division will prepare construction plans and specify the proposed coating system.

15. **W. Henry Street Waterline Replacement:** The City of Wooster's Engineering Division will design a new waterline to replace an old cast iron line which has a history of failures. The location of the line is between Minerva Street and Walnut Street.

16. **Geyers Chapel Sanitary Sewer:** The Engineering Division will design a new sanitary sewer along Geyers Chapel Road in preparation for the proposed Ohio Department of Transportation maintenance facility. ODOT is relocating their maintenance building from Old Lincoln Way to Geyers Chapel Road.

17. **2012 Microsurfacing Program:** This project is being funded 80% by ODOT's Large City Funding program. The Engineering Division is currently preparing construction plans for microsurfacing portions of Oak Hill Road (Wayne to Oldman) and Quinby Avenue (Bowman to Wayne).





#	Project Name	Description	Construction Dates
1	Flow Line Treatment - Blower	Sanitary Sewage Treatment	Completed Fall 2011
2	Lewis St Resurfacing	Roadway	Completed Fall 2011
3	Potomac Road Resurfacing	Roadway	Completed Fall 2011
4	Oak Hill Park	Trail and Park Development	Completed Fall 2011
5	Pavement Rehab - Microsurfacing	Roadway	Completed Fall 2011
6	Adrian Road Phase 1 (VAAY-485-1.54)	Roadway	Completed Fall 2011
7	Adrian Road Phase 2 (VAAY-485-0.57)	Roadway	Completed Fall 2011
8	Adrian Road Phase 3 (VAAY-485-0.57)	Roadway	Completed Fall 2011
9	Adrian Road Phase 4 (VAAY-485-0.57)	Roadway	Completed Fall 2011
10	Adrian Road Phase 5 (VAAY-485-0.57)	Roadway	Completed Fall 2011
11	Adrian Road Phase 6 (VAAY-485-0.57)	Roadway	Completed Fall 2011
12	Adrian Road Phase 7 (VAAY-485-0.57)	Roadway	Completed Fall 2011
13	Adrian Road Phase 8 (VAAY-485-0.57)	Roadway	Completed Fall 2011
14	Adrian Road Phase 9 (VAAY-485-0.57)	Roadway	Completed Fall 2011
15	Adrian Road Phase 10 (VAAY-485-0.57)	Roadway	Completed Fall 2011
16	Adrian Road Phase 11 (VAAY-485-0.57)	Roadway	Completed Fall 2011
17	Adrian Road Phase 12 (VAAY-485-0.57)	Roadway	Completed Fall 2011
18	Adrian Road Phase 13 (VAAY-485-0.57)	Roadway	Completed Fall 2011
19	Adrian Road Phase 14 (VAAY-485-0.57)	Roadway	Completed Fall 2011
20	Adrian Road Phase 15 (VAAY-485-0.57)	Roadway	Completed Fall 2011
21	Adrian Road Phase 16 (VAAY-485-0.57)	Roadway	Completed Fall 2011



## Private Developments

### **1. Private Subdivisions/Commercial Property under Construction:**

Expansion and development was down for the year 2011. Most of the permits issued were for small parking lot or building expansions. The exception was the permit issued to Merchants Block for the construction of a commercial/retail facility at ground level and 12 upper level condominiums at the old Freedlander store lot on Liberty Street. The estimated cost for this construction is \$1,785,691. It was announced that the restaurant, House of Hunan, will occupy half of the first floor space.

The Wayne County Historical Society obtained a permit to install a new storm water system including a retention area with work estimated to cost \$186,000.

Campbell Oil Company remodeled and updated the Bell Store on Beall Avenue.

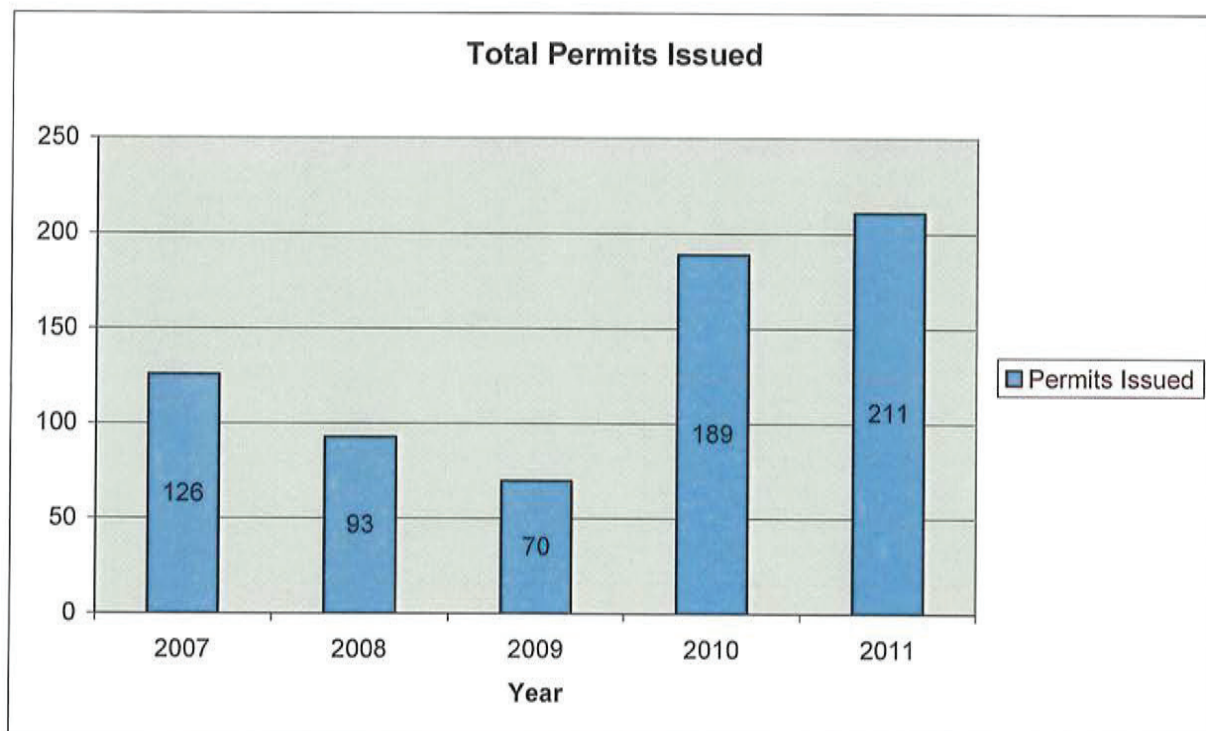
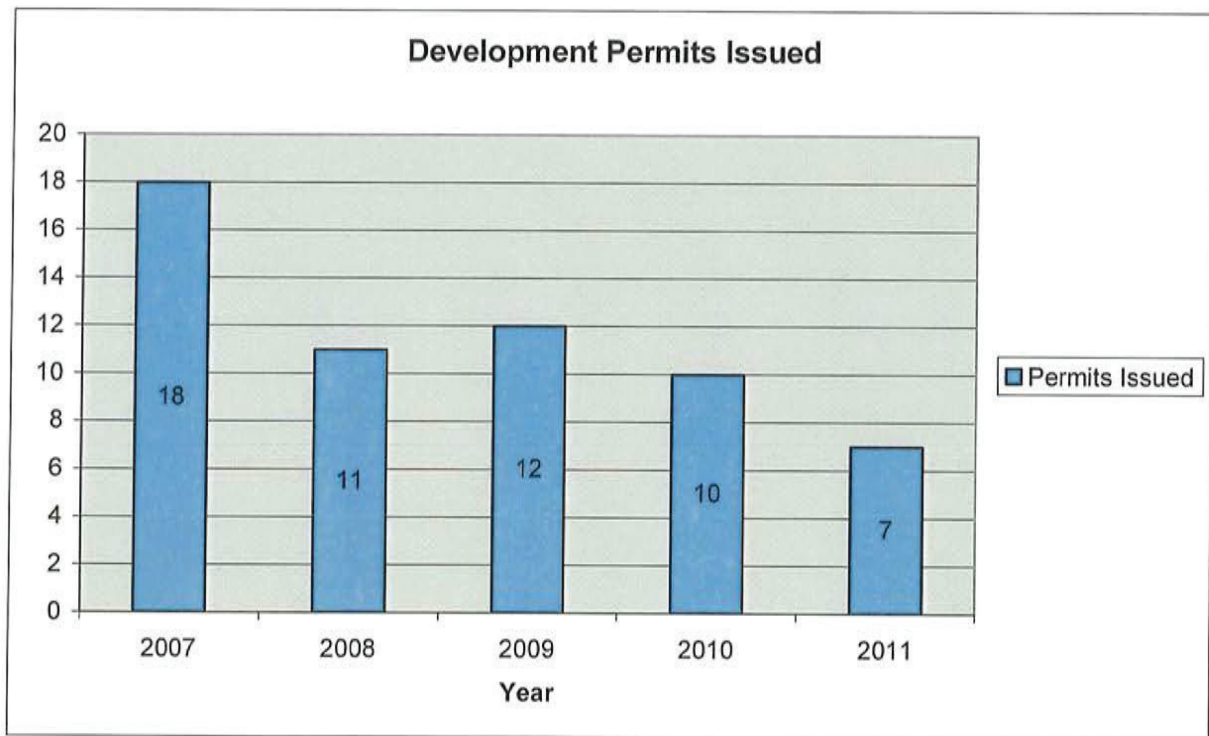
The College of Wooster began construction on a new \$30 million Student Recreation Center in 2010. The work continued throughout 2011 with the center scheduled to be opened January 2012.

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

**2. Subdivision Plan Review Table:** The table below lists all subdivisions and developments submitted for review in 2011.

City of Wooster Engineering Development Permits						2011
DEVELOP. #	PERMIT NO.	PROJECT NO.	NAME / DESCRIPTION	SITE IMP.S COST ESTIMATE	PLAN REVIEW FEE	DATE RECEIVED
1	2011002	113016	Bell Store	\$ 20,000.00	\$ 264.00	08/01/11
2	2011003	113020	Wayne County Historical Society	\$ 186,000.00	\$ 2,459.90	10/10/2011
3	2011004		UPS Parking	\$ 12,000.00	\$ 200.00	10/21/11
4	2011005	113022	Waterline OARDC	\$ 51,000.00	\$ 1,187.90	11/07/11
5	2011006	103010	Merchants Block	\$ 1,785,691.00	\$ 380.00	11/14/11
6	2011007	113019	Wooster Products	\$20,000	\$ 1,900.50	11/15/11
TOTALS				\$ 2,074,691.00	\$ 6,392.30	





Although Development Permits have been declining, there was a significant increase in Sewer Permits issued in 2011 due to the Batdorf Road Sewer Improvement project. There are 120 residents in the area that are required to connect before May 2012.



### **ENGINEERING FEES AND REVENUES :**

The following chart details the revenues received the past few years by the Division of Engineering. The marked decrease in revenue is due to the lack of development or expansion within the city limits for the 2011 year.

The following breakdown details the revenues received for the years 2008 through 2011 by the Division of Engineering

	2008	2009	2010	2011
Single Inspection	\$640.00	\$1,600.00	\$6,240.00	\$8,890.00
Construction Inspection	\$12,635.15	\$7,094.79	\$27,676.69	\$3,840.65
Plan Review Fee	\$18,910.80	\$14,431.80	\$52,900.80	\$18,638.00
Plan Copies	\$8,400.60	\$5,785.05	\$1,796.70	\$3,805.40
Yard Pipe Permit	\$120.00	\$120.00	\$120.00	\$480.00
Sanitary Sewer Permit	\$520.00	\$800.00	\$1,260.00	\$2,080.00
San. Sewer Availability Charge	\$13,037.00	\$16,388.20	\$1,760.00	\$3,146.00
Water Availability	\$12,840.00	\$14,236.00	\$3,600.00	\$7,760.00
Water Service Permit	\$760.00	\$1,240.00	\$120.00	\$560.00
Development Permit Waiver	(\$18,750.00)	\$0.00	\$0.00	(\$635.00)
<b>TOTAL FEES COLLECTED</b>	<b>\$49,113.55</b>	<b>\$61,695.84</b>	<b>\$95,474.19</b>	<b>\$48,565.05</b>

**Permissive Tax Revenue:                    \$109,281.06   \$108,009.03   \$107,573.13   \$105,953.79**

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 on a bi-monthly basis. The total funds requested and released from 1969 to December 2011 is \$3,805,123.15.

Overall, the value of engineering services provided based on construction project costs alone exceeded \$950,000 which exceeds the entire Engineering budget across all cost centers.

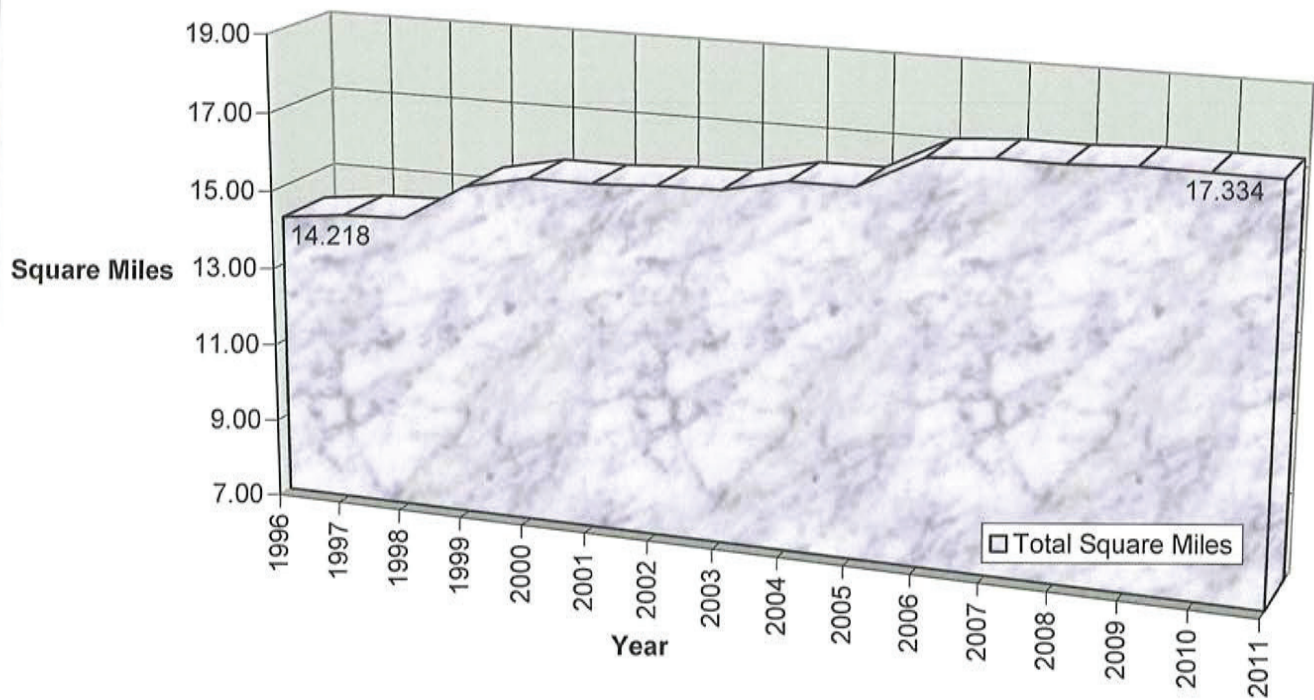


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## **City Growth Statistics – Section 2**



## City Growth Total City Area





## City Area Statistics

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



### 2011 Annexations

No.	Description	Date	Area
	None		

### 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)	17.344 Sq. Mi.	133.10 Miles
2011	26,397	(b)	17.344 Sq. Mi.	133.10 Miles

(a) Census

(b) Estimated from Housing Starts

### NOTES

- 1) Population growth saw a 5.27% increase from 2000 to 2010 based on actual census figures.

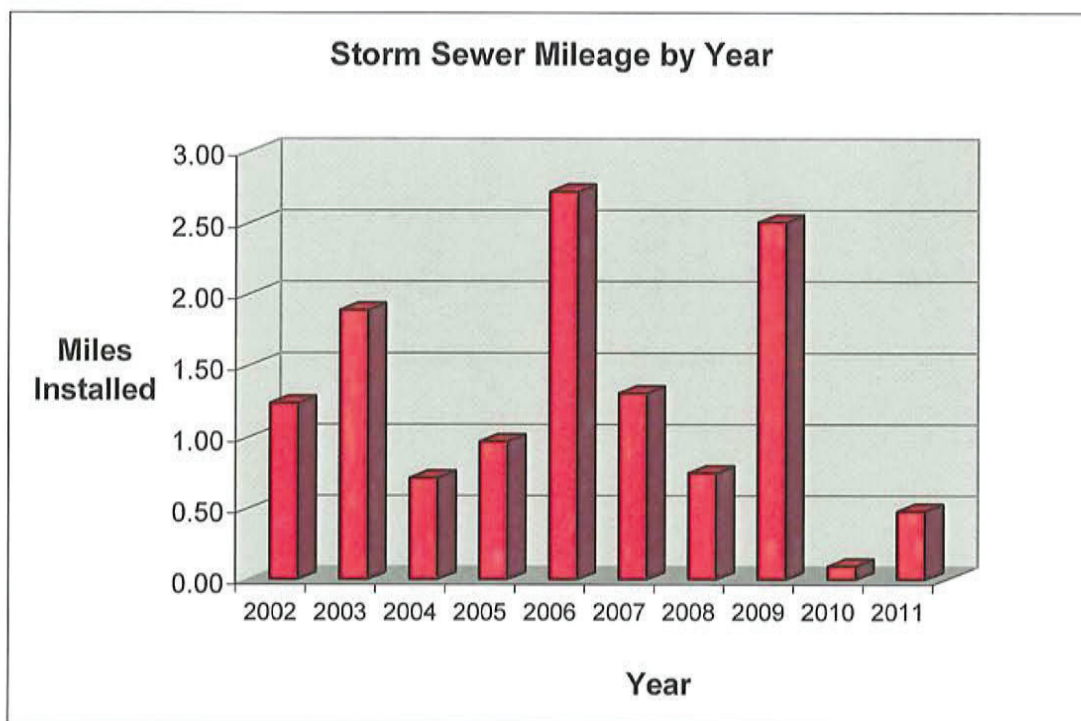
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### **Utility Statistics – Section 3**



### Storm Sewer Mileage

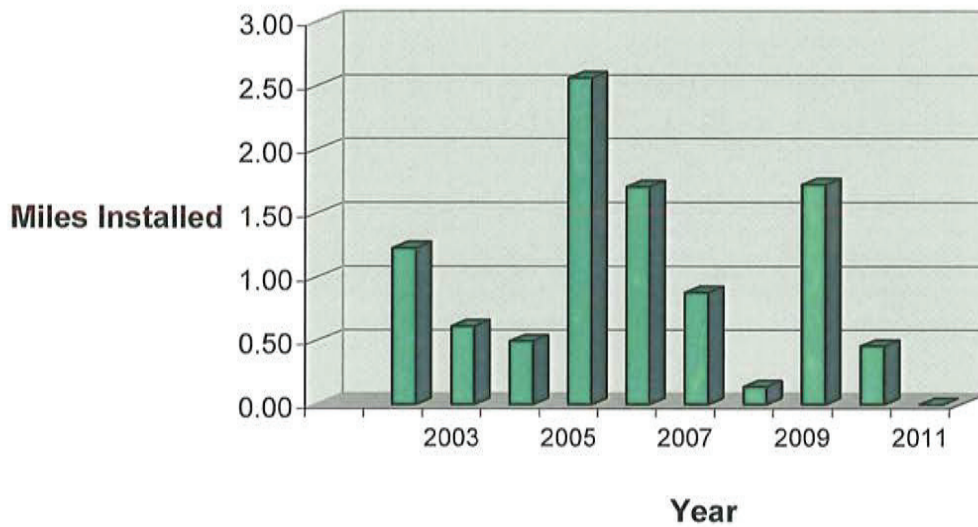
Year	Increase in Miles	Total Mileage	% Increase
		107.71	
2002	1.24	108.95	0.00%
2003	1.89	110.84	1.14%
2004	0.72	111.56	1.71%
2005	0.97	112.53	0.64%
2006	2.72	115.25	0.86%
2007	1.31	116.56	2.36%
2008	0.75	117.31	1.12%
2009	2.51	119.81	0.64%
2010	0.10	119.91	2.09%
2011	0.48	120.39	0.08%



### Sanitary Sewer Mileage

Year	Increase in Miles	Total Miles	% Increase
		110.79	
2002	1.23	112.02	1.11%
2003	0.62	112.64	0.55%
2004	0.50	113.13	0.44%
2005	2.56	115.70	2.26%
2006	1.71	117.41	1.48%
2007	0.88	118.29	0.75%
2008	0.14	118.43	0.12%
2009	1.73	120.15	1.46%
2010	0.46	120.61	0.38%
2011	0.00	120.61	0.00%

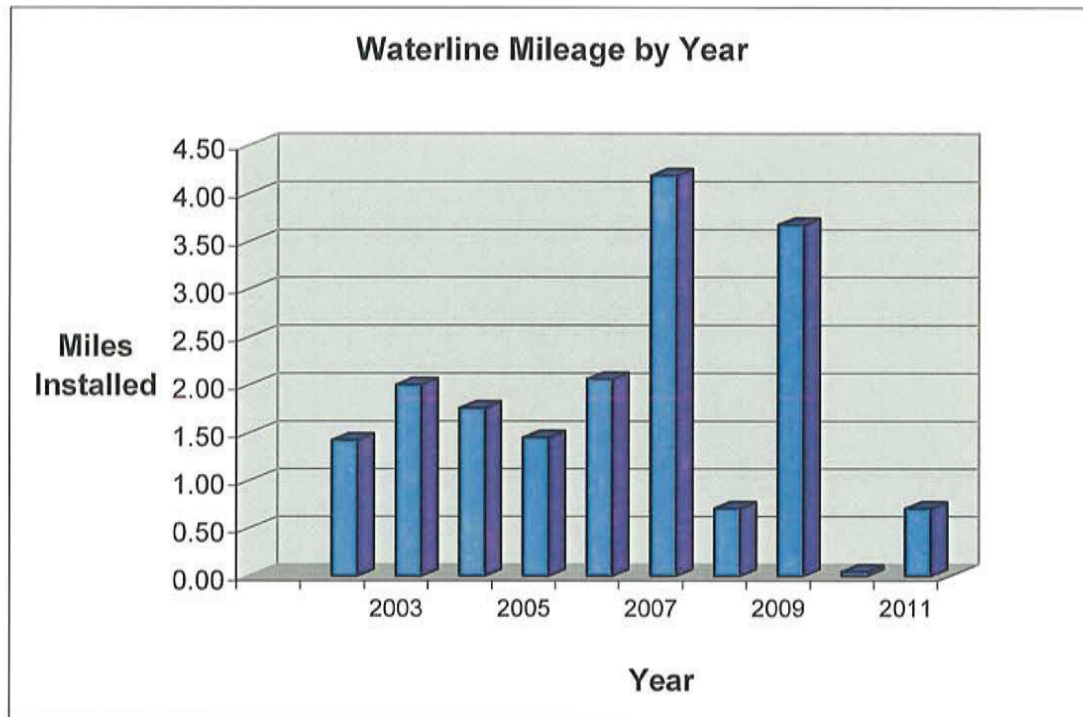
### Sanitary Sewer Mileage by Year





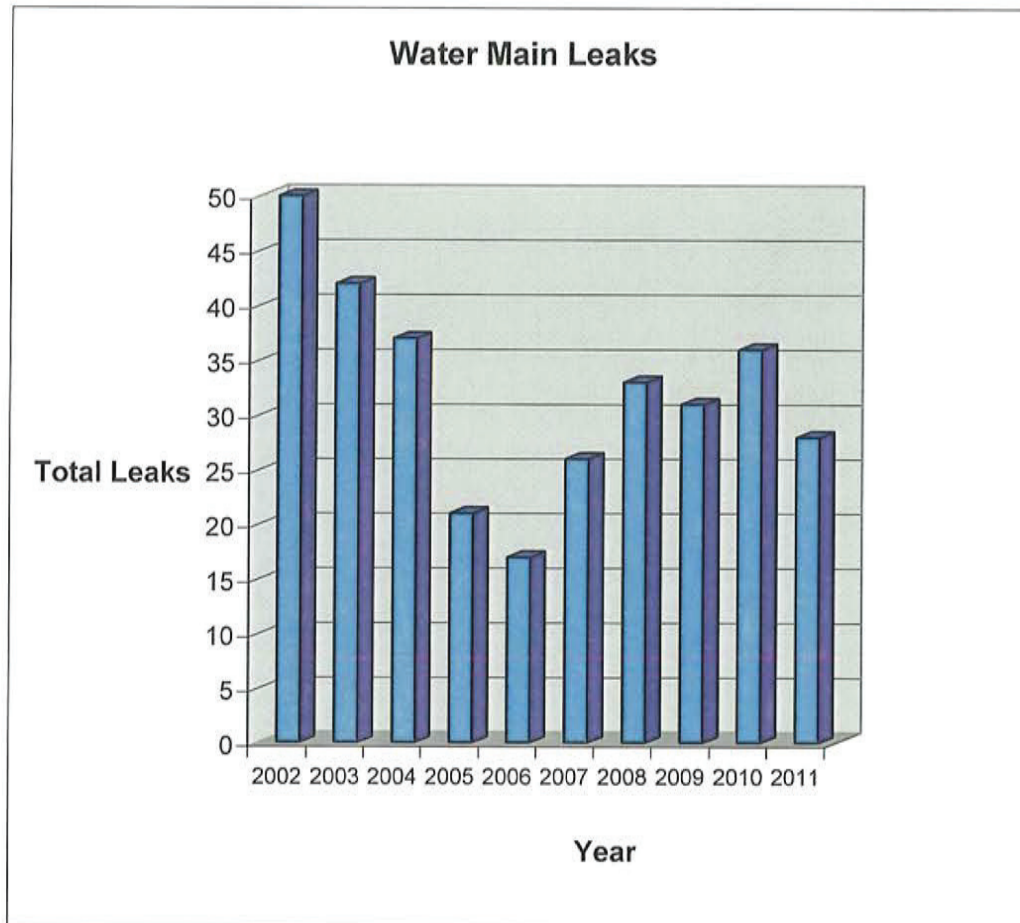
### Waterline Mileage

Year	Increase in Miles	Total Miles	% Increase
		116.72	
2002	1.43	118.15	1.22%
2003	2.00	120.15	1.70%
2004	1.76	121.91	1.46%
2005	1.45	123.36	1.19%
2006	2.06	125.43	1.67%
2007	4.19	129.62	3.34%
2008	0.71	130.33	0.55%
2009	3.68	134.00	2.82%
2010	0.05	134.05	0.03%
2011	0.71	134.76	0.53%



### Water Main Leaks

Year	Number
2002	50
2003	42
2004	37
2005	21
2006	17
2007	26
2008	33
2009	31
2010	36
2011	28

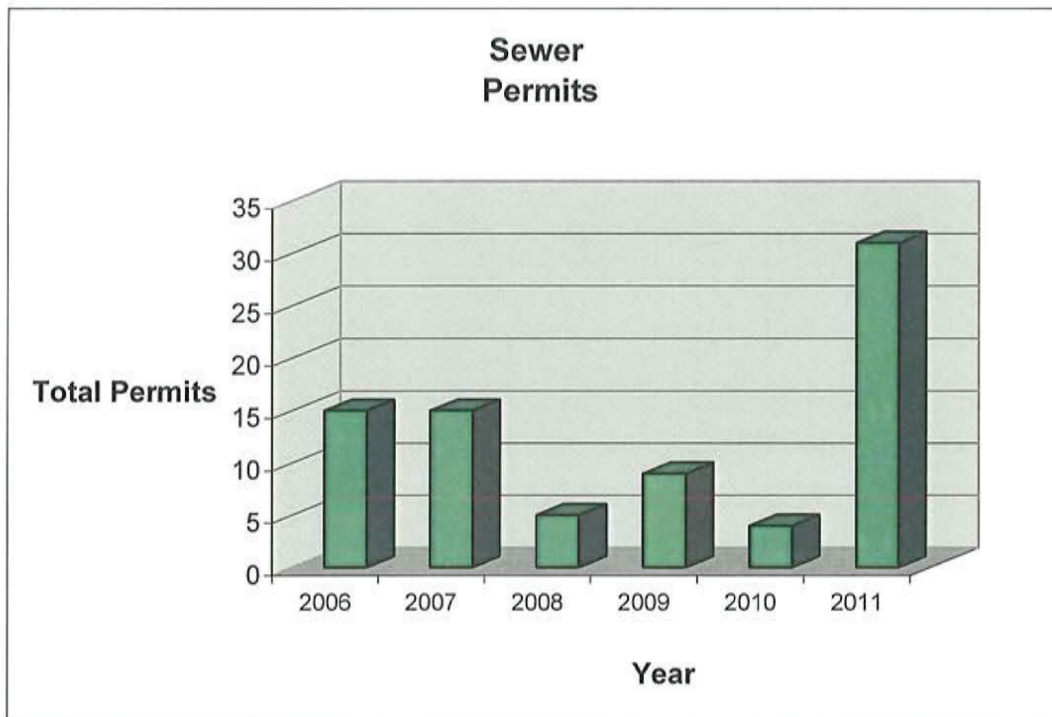


Water leaks continue to be consistent due to the age and deterioration of the current infrastructure. Many leaks occurred on water mains originally scheduled for replacement, but postponed due to budget shortfalls.



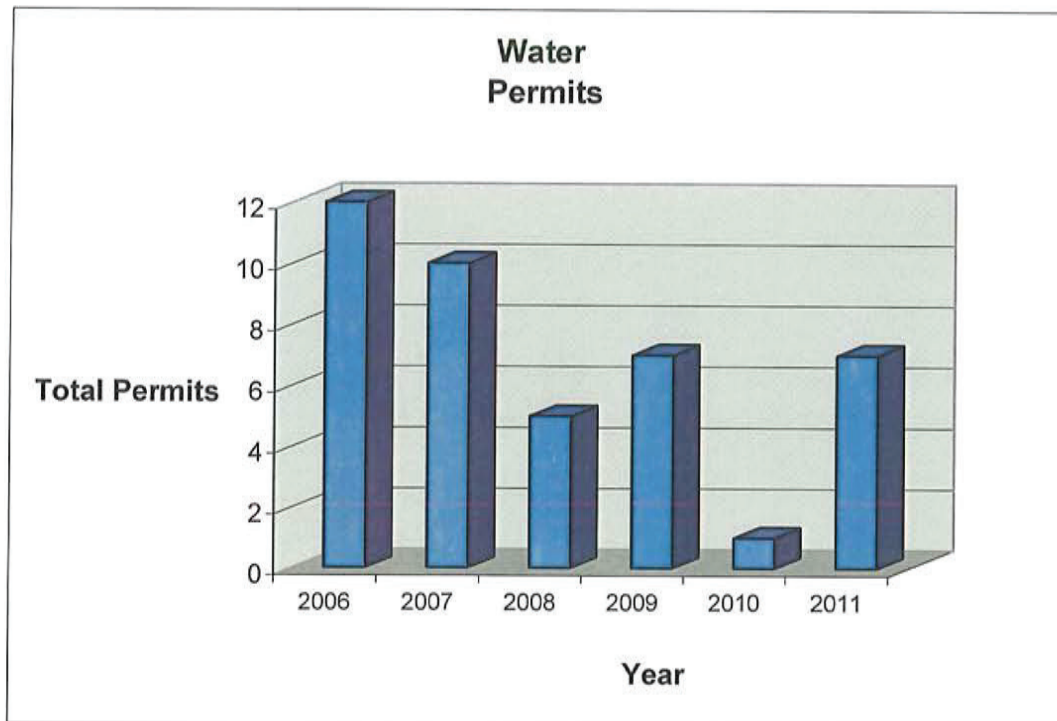
### Sewer Permits

Year	Number
2005	9
2006	15
2007	15
2008	5
2009	9
2010	4
2011	31



## Water Permits

Year	Number
2003	7
2004	14
2005	7
2006	12
2007	10
2008	5
2009	7
2010	1
2011	7

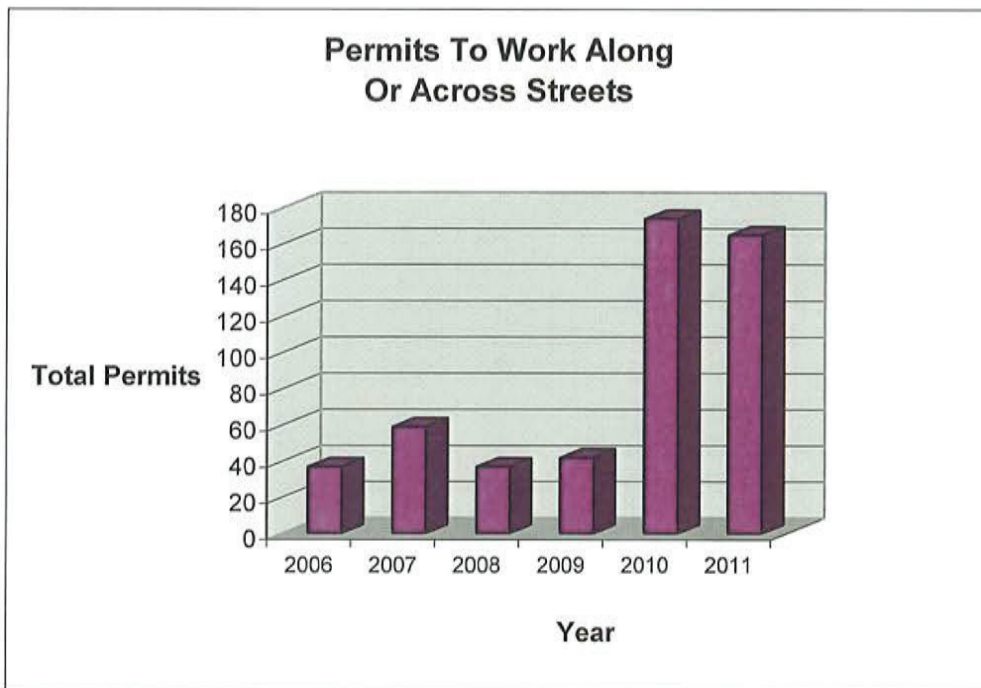


The majority of water permits issued for 2011 were for replacement of existing, deteriorated waterlines.



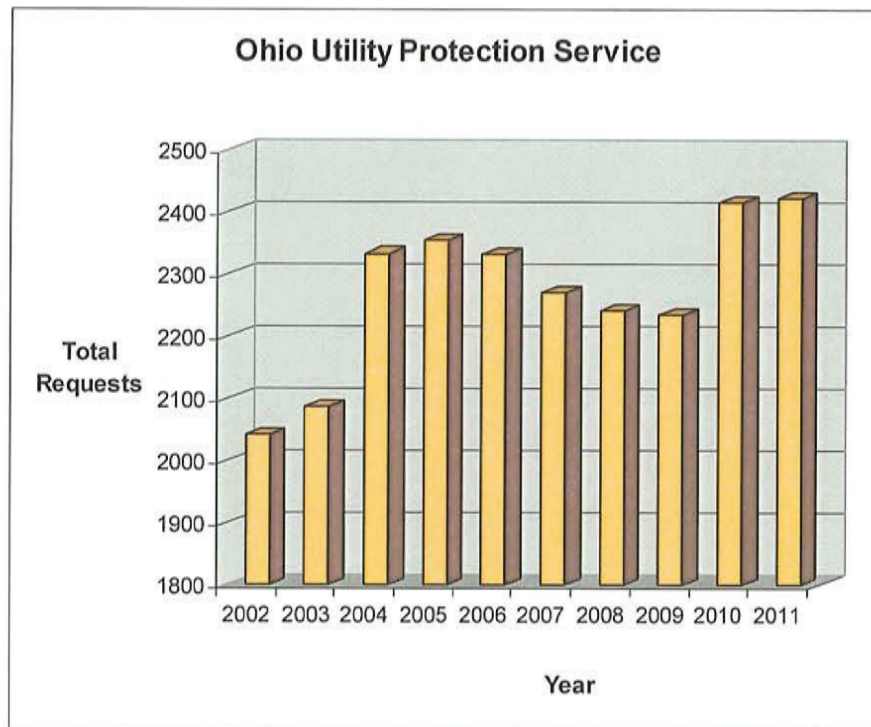
**Permits To Work Along  
Or Across Streets**

<u>Year</u>	<u>Number</u>
2005	27
2006	37
2007	59
2008	37
2009	42
2010	174
2011	165



**Ohio Utility Protection Service**  
**Location Requests**

Year	Number
2002	2043
2003	2087
2004	2334
2005	2356
2006	2332
2007	2270
2008	2241
2009	2235
2010	2417
2011	2423





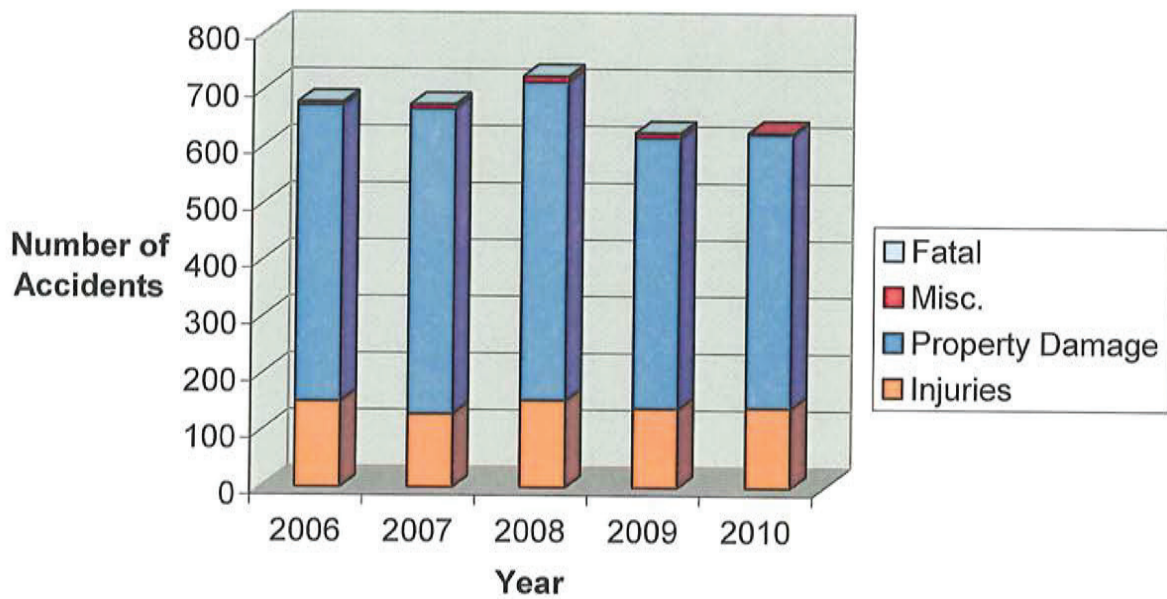
*Division of Engineering  
City of Wooster  
2011 Annual Report*

## **Traffic Statistics – Section 4**

**City of Wooster**  
**Traffic Accidents**

Year	Injuries	Property Damage	Misc.	Fatal
2005	175	568	7	
2006	151	521	5	1
2007	129	537	7	1
2008	153	560	10	1
2009	139	477	8	1
2010	141	482	3	

**Total Traffic Accidents**  
**City of Wooster**

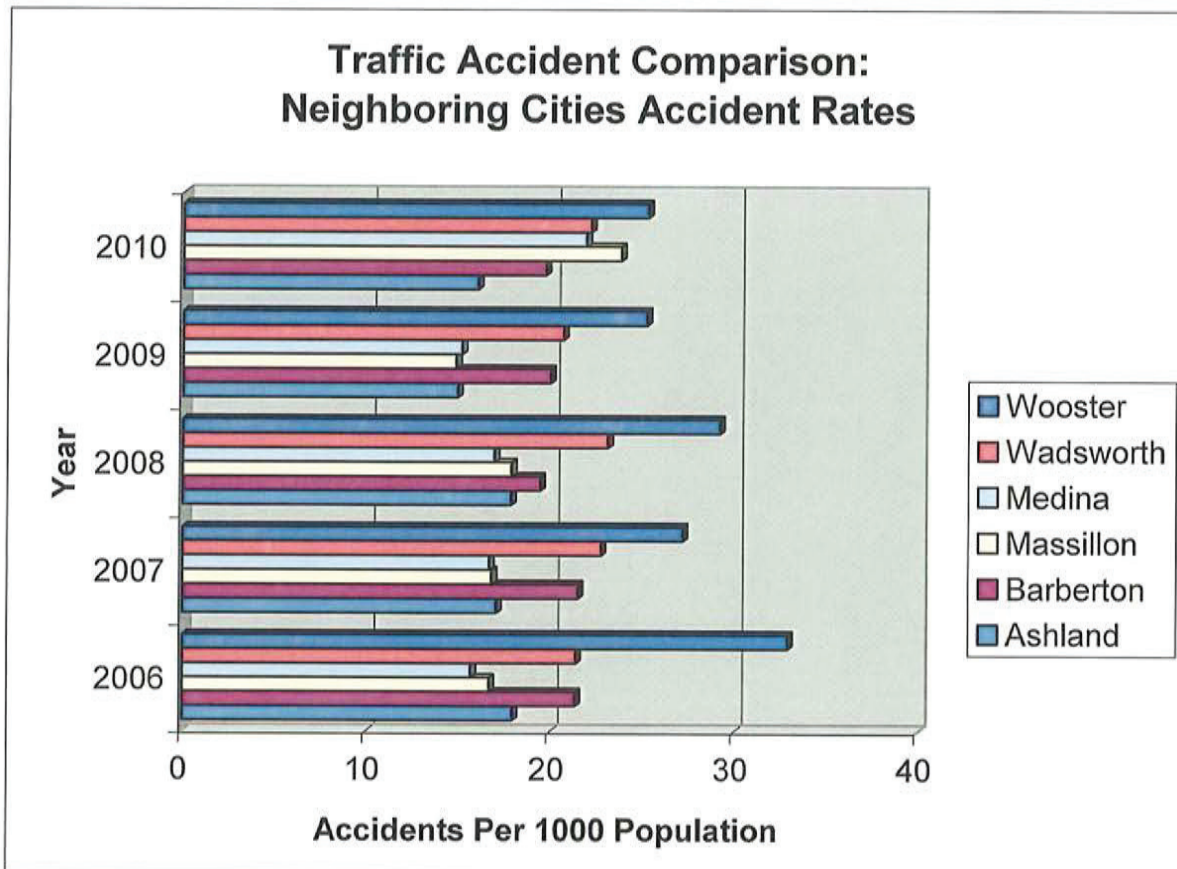




**Traffic Accident Comparison**  
**Rates By Neighboring Cities**

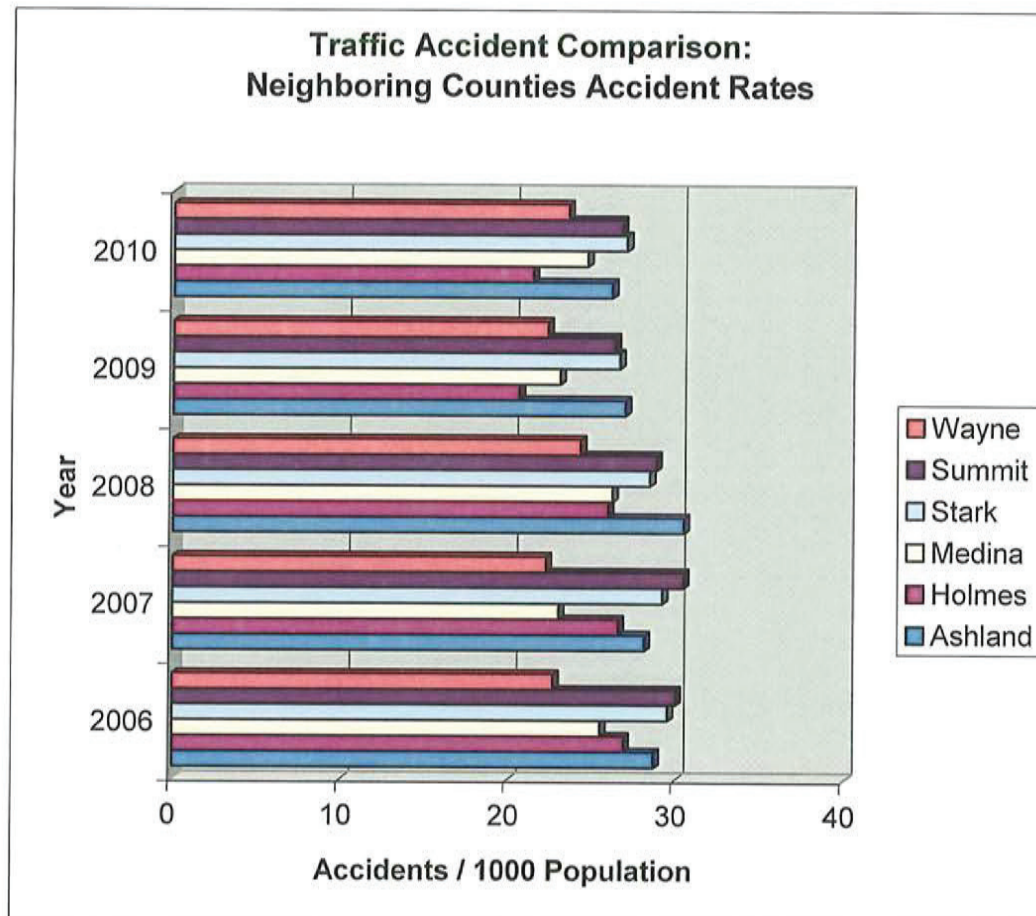
Accidents Per 1000 People

Year	Ashland	Barberton	Massillon	Medina	Wadsworth	Wooster
(2000 Pop.)	21,249	27,899	31,325	25,139	18,437	24,811
2005	17.79	23.41	16.50	17.14	23.38	30.23
2006	17.93	21.33	16.66	15.67	21.37	32.89
2007	17.04	21.47	16.79	16.67	22.73	27.17
2008	17.84	19.43	17.88	16.95	23.11	29.18
2009	14.92	19.96	14.84	15.16	20.66	25.19
2010	16.00	19.68	23.78	21.88	22.13	25.23



**Traffic Accident Comparison**  
**Rates by Neighboring Counties**

Accidents Per 1000 People						
Year	Ashland	Holmes	Medina	Stark	Summit	Wayne
2005	32.67	32.09	27.06	32.55	32.42	28.1
2006	28.71	26.91	25.52	29.54	30.01	22.7
2007	28.14	26.57	23.03	29.22	30.46	22.28
2008	30.48	25.96	26.21	28.45	28.83	24.3
2009	26.96	20.62	23.08	26.62	26.33	22.33
2010	26.14	21.44	24.66	27.02	26.72	23.54





*Division of Engineering  
City of Wooster  
2011 Annual Report*

## **Engineering Design Statistics – Section 5**

**DIVISION OF ENGINEERING**

2011 Annual Report - Project Summary

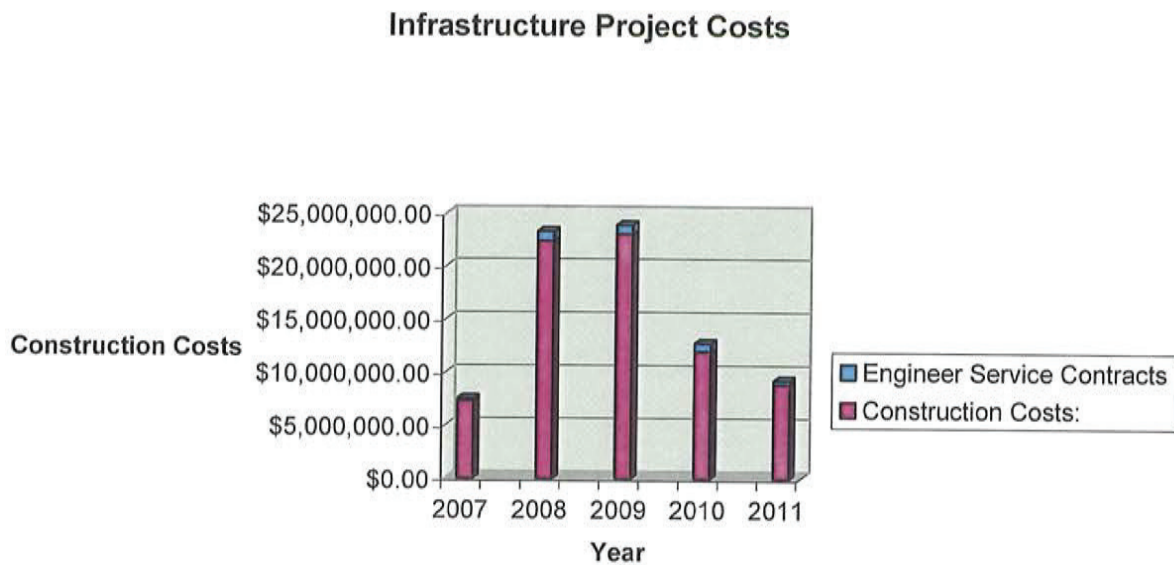
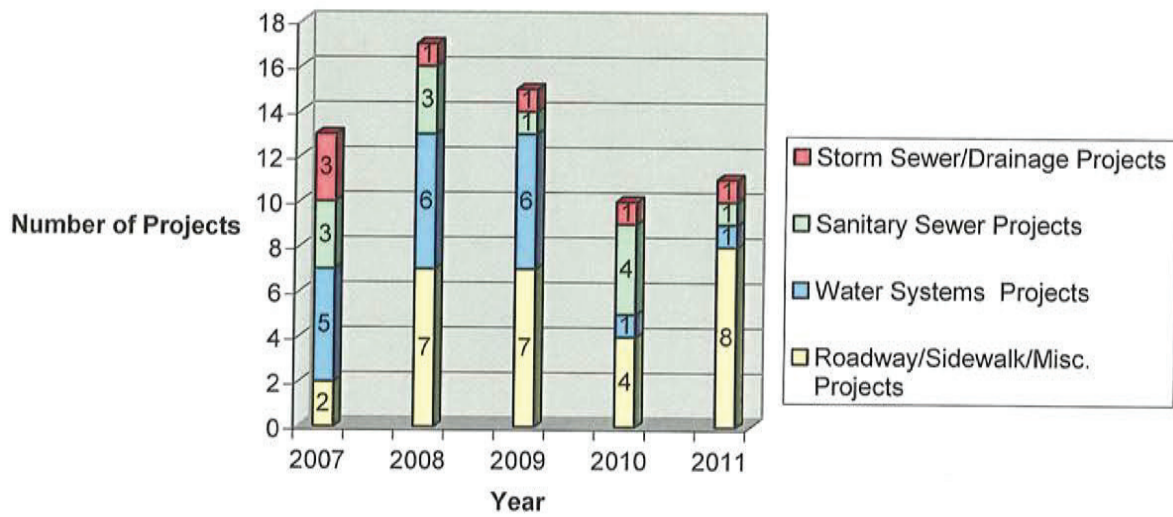
(Projects Designed or Constructed in 2011)

PROJECT	DESIGNER/CONSULTANT	DESIGN COST	CONTRACTOR	ESTIMATED CONST. COST	BID PRICE	FINAL COST	Contract Balance	% Complete	Retainage
Burbank Road Waterline	Wooster Engineering	\$0	G.E. Baker	\$745,000	\$706,473	UC	\$308,842	49%	\$28,258
Frito Bidlower - Contract A	ATS	\$79,750	Workman Ind.	\$2,481,400	\$2,377,738	\$2,422,050	\$20,000	100%	\$20,000
Gasche St. Sewer Separation	Wooster Engineering	\$0	Stout	\$1,100,000	\$991,185	UC	\$12,000	95%	\$12,000
Larwill Street Resurfacing	Wooster Engineering	\$0	PCS Paving	\$80,000	\$84,991	\$81,650	\$0	100%	\$0
Melrose Drive Improvements	Wooster Engineering	\$0	Terra Valley	\$2,245,000	\$1,988,022	UC	\$1,941,402	3%	\$4,053.00
Oak Hill Park - Contract A	CDP/Wooster Engineering	\$23,300	Stout	\$490,000	\$458,514	\$538,444	\$0	100%	\$0
Oak Hill Park - Contract B	Wooster Engineering	\$0	Hilscher Clarke	\$80,000	\$10,632	\$19,732	\$0	100%	\$0
Pavement Rehab - Microsurface	Wooster Engineering	\$0	Strawser	\$175,000	\$179,002	\$169,260	\$0	100%	\$0
Portage Road Resurfacing	Wooster Engineering	\$255,555	Kokosing	\$280,000	\$228,310	\$240,355	\$0	100%	\$0
Akron Road - Phase 1	Engineering Associates	\$12,300	Stout	\$1,700,000	\$1,751,087	UC	\$402,244	78%	\$70,043
SR83/Friendsville Road Signal	Burgess & Niple	\$370,905	Lafayette Electric	\$132,000	\$142,990	UC	\$142,990	0%	\$0
<b>Subtotals</b>				<b>\$9,488,400</b>	<b>\$8,918,944</b>	<b>\$3,481,491</b>			
Friendsville Rd. Improvements	GPD	\$101,760	N/A	\$2,000,000	N/A	DC			
South Street	Edsall/Burgess & Niple	\$21,800	N/A	\$727,000	N/A	DC			
<b>Subtotals</b>		<b>\$21,800</b>		<b>\$2,727,000</b>					
Akron Rd. - Phase 2	Engineering Associates	\$385,000	N/A	\$2,800,000	N/A	UD			
Mechanicsburg Rd. SS	Wooster Engineering	\$0	N/A	\$200,000	N/A	UD			
North High Water Tank	Wooster Engineering	\$0	N/A	\$2,000,000	N/A	UD			
Melrose Booster Station	GGJ	\$48,900	N/A	\$644,500	N/A	UD			
Burbank Rd. Sanitary	Wooster Engineering	\$0	N/A	\$555,000	N/A	UD			
Merchants Block Parking Lot	Wooster Engineering / Wolfe	\$5,000	N/A	\$335,000	N/A	UD			
Fire Station #2	Architectural Resources Inc.	\$334,000	N/A	\$4,000,000	N/A	UD			
Spring St. W/L	Wooster Engineering	\$0	N/A	\$500,000	N/A	UD			
OARDC-SR 302 Crosswalk	Wooster Engineering	\$0	N/A	\$25,000	N/A	UD			
<b>Subtotals</b>		<b>\$772,900</b>		<b>\$11,059,500</b>					

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

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





The City had \$8,918,944 of infrastructure projects in 2011 and associated engineering contracts of \$370,905. Industry averages for design fees are 8% to 11% of construction costs. The Division of Engineering staff designed 8 of the 11 projects providing an estimated savings of \$250,000 in design services.

# Engineering Value Calculations (Major Projects Only)

Project	Design Cost	2011 Design Costs Paid	2010 Design Costs Paid	2009 Design Costs Paid	Engineer's Estimate	Contractor	Bid Price	Final Cost	2011 Const. Payments	2010 Const. Payments
<b>Under Construction</b>										
Burbank Road Waterline	\$0				\$745,000	G.E. Baker	\$706,473	UC	\$397,631	\$0
Frito Biolower - Contract A	\$79,750				\$2,481,400	Workman Ind.	\$2,377,738	\$2,422,050	\$426,300	\$1,995,750
Gasche St. Sewer Separation	\$0				\$1,100,000	Stout	\$991,185	UC	\$466,685	\$588,967
Lanwill Street Resurfacing	\$0				\$80,000	PCS Paving	\$84,991	\$91,650	\$91,650	\$0
Melrose Drive Improvements	\$0				\$2,245,000	Terra Valley	\$1,988,022	UC	\$46,620	\$0
Oak Hill Park - Contract A	\$23,300	\$0			\$490,000	Stout	\$458,514	\$538,444	\$538,444	\$0
Oak Hill Park - Contract B	\$0			\$19,989	\$80,000	Hilscher Clarke	\$10,632	\$19,732	\$19,732	\$0
Pavement Rehab - Microsurface	\$0				\$175,000	Strawser	\$179,002	\$169,259	\$169,259	\$0
Portage Road Resurfacing	\$0				\$260,000	Kokosing	\$228,310	\$240,355	\$240,355	\$0
SR83/Friendsville Road Signal	\$12,300	\$10,159			\$132,000	Lafayette	\$142,990	UC	\$0	\$0
Akron Road - Phase 1	\$255,555	\$2,005	\$6,398	\$242,474	\$1,700,000	Stout	\$1,751,087	UC	\$1,348,843	\$0
	\$370,905	\$12,165	\$6,398	\$252,463	\$9,488,400		\$8,918,944		\$3,745,519	\$2,564,717
Value of Design Engineering* =	8.5%						\$758,110	Avg. =	\$340,502	\$256,472

<b>Under Construction (2011)</b>	
Value of Construction Engineering	10.00%
Design Value Provided in 2011 (3)	12.0%
	\$57,250

<b>Design Completed (2011)</b>	
Value of Design Engineering	8.50%
Value of Design Engineering	\$129,811
	\$2,727,000

<b>Under Design (2011)</b>	
Value of Design Engineering	8.50%
Value of Design Engineering	\$170,916
	\$544,500

<b>Planning (2011)</b>	
Value of Preliminary Engineering	3.00%
	\$238,350

<b>Total Engineering Services Provided in 2011</b>	
	\$968,714
	\$4,000,000
	\$1,200,000
	\$480,000
	\$1,580,000
	\$800,000
	\$8,195,000

Consultant Services Paid	% of Construction
\$281,025.64	10.31%
\$101,984.00	3.74%
\$461,866.08	6.20%
\$75,000.00	0.92%

\$919,875.72	10.95%
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<b>Notes:</b>	
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) Original quote for engineering services was \$103,300. City Engineering Division providing \$80,000 of services in 2009 & 2010.	
(2) This value represents the amount of design that occurred in 2010 only.	
(3) Sum of construction estimates from the 10 year infrastructure plan.	