

DEPARTMENT OF ENGINEERING

Gary E. West, Director

The Engineering Department is responsible for planning, designing, bidding, funding and the construction management for all Public Works Projects within the City of Mishawaka. Responsibilities also include review of all private development and utility company projects for conformance with Engineering Standards including stormwater management, sanitary sewer construction and connection, and right-of-way access and improvements. Our office also manages the Traffic Signal System, Traffic Cameras, right-of-way records and As-Built records for locating right-of-way infrastructure such as the City fiber-optic system, and the storm and sanitary sewer systems.

Engineering Staffing

The Engineering Department staff includes the Director and Assistant Director of Engineering, a Construction Manager, a Project Manager and Traffic Manager and a Project Coordinator as well as an MS-4 Coordinator and two part-time secretaries. Two full-time positions were not replaced when those individuals retired and included the Locator and Office Manager.

The Director of Engineering is responsible for the day-to-day management of the Engineering Department. The Director also serves at the City's representative on the following boards and committees:

- President of Board of Public works and Safety/Utility Board
- Technical Advisor & Member, City of Mishawaka Plan Commission
- Technical Advisor & Member, City of Mishawaka Traffic Commission
- Member of the City's Solid Waste Committee
- Member of the Transportation Task Force, St. Joseph County Chamber of Commerce
- Member of the Transportation Technical Advisory Committee, Michiana Area Council of Governments
- Mayor Wood designated the Director of Engineering as Deputy Mayor
- Northern Regional Director of the Indiana Association of City Engineers

The Assistant Director of Engineering conducts all site plan reviews, including storm water management, site access, sanitary sewer connections, and construction plan reviews. These plan reviews include new residential and industrial subdivisions documenting compliance with storm water regulations, subdivision infrastructure requirements, sanitary sewer engineering standards, and to ensure that adequate sanitary sewer capacity is available to serve the proposed development. The Assistant Director also:

- Reviews storm water management calculations and plans submitted by developers.
- Reviews construction plans and specifications for development of improvements of public streets, sewers and drainage within proposed subdivisions.
- Administers the sanitary sewer use ordinance for connection of county residents.
- Coordinates with Wastewater Treatment staff, Consultant Lawson-Fisher Associates of South Bend, Indiana, and Bethel College staff in the development and implementation of the MS4 Program. Participates in the Michiana Stormwater Partnership, which is the

regional MS4 Education Committee with St. Joseph County, City of South Bend, and Soil and Water Conservation District.

- Works with consultants to complete design plans and construction cost estimates for various public infrastructure projects. This delegation of responsibilities generates a more timely response to developer, engineer and contractor inquiries while enabling the Director of Engineering to focus on planning, right of way and funding for future Public Works Projects.

The Construction Manager oversees all City construction projects within the two Tax Incremental Financing (TIF) Districts to ensure compliance with construction documents and addresses construction concerns reported by the public.

The Project Manager oversees all Public Works projects, the curb and sidewalk program and the summer street paving project, assigns all City addresses in conjunction with 911 emergency system, and trouble shoots citizen complaints. The Project Manager also shares responsibility with the Project Coordinator for the Department's purchase orders, processing of claims for consulting services, and all construction projects. The Project Manager also coordinates the allocation of funding from multiple fund sources to ensure adequate monies are available to complete smaller local construction projects.

The MS-4 Coordinator is responsible for compliance with the IDEM/EPA Rule 5 and Rule 13, and also is the City's coordinator for the City MS-4 Program, processing approval for Erosion Control Plans and their compliance during and post construction.

Traffic Engineering is responsible for operation and maintenance of all of the 56 City-owned traffic signals, 13 school warning devices, 2 four-way red flashers, and 2 yellow warning flashers. The Traffic Manager oversees the operation of the City's traffic signal system and coordinates repairs by the City's maintenance contractor. The Traffic Manager is also responsible for signal timings, traffic studies, and traffic work orders for sign installation as well as for the management of emergency vehicle pre-emption systems and twelve City traffic cameras.

The Project Coordinator is responsible for coordinating and maintaining all project files and City As-Built records, sanitary sewer construction and connection applications, excavation and sewer permits, sewer insurance records, management of the City telephone system repairs and service, and other duties as required.

The Office Manager from the Sewer Maintenance Department splits her time between the Sewer Department and the Engineering Department, which brings efficiency to both departments due to many similar sewer issues in both departments. The Mayor's office provides their secretary on a part-time basis on afternoons, as schedules permit, to answer telephones and type correspondence.

The Sewer Maintenance Department has assumed the field locating duties for storm and sanitary sewers prior to any excavation in the public right of way for the Engineering Department. However, because the economy is depressed, the number of locating requests is low compared to

historical values set in the last 15 years and depending upon the number of locates, they may impact the amount of maintenance work performed by the Sewer Department.

Engineering Services

In addition to engineering public works projects such as curb, sidewalks, street improvements, traffic signals, school warning devices and sanitary and storm sewers, the Department also ensures compliance with job-site safety, maintenance of traffic and erosion control issues. Follow-up inspections ensure proper site restoration. The Engineering Department also reviews plans for construction of proposed development projects to ensure compliance with developmental guidelines, access and drainage requirements of the City.

The Department also investigates and works to address all drainage complaints that are received from residents throughout the city to resolve concerns within their neighborhood including local and area wide drainage, traffic, and parking issues.



Engineering is also responsible for the underground public works utility locate service for the City. The facilities and services located include the sanitary trunk sewers, lateral connections, storm sewers, fiber optic interconnects, traffic signal control systems, and the Metronet shared conduit system.

Another responsibility is ensuring contractor and individual compliance with the City of Mishawaka Excavation and Public Works Bonding Ordinances and permitting requirements. The Department of Engineering issues and tracks permits for excavation and street cuts in all city streets and public right-of-ways. Excavation Permits are important for protecting the motoring public and the existing buried infrastructure including sanitary sewers, sewer laterals and storm sewers, the city's fiber optic network and traffic control facilities plus ensuring proper restoration of street cuts. The Engineering Department provides also engineering assistance for municipal utility projects on request and other major public works capital improvement projects

The Engineering Department receives copies of accident reports involving City property damage, such as guardrails, traffic signs, traffic signals and other City property for restitution through insurance claims or personal payment plans. In 2010 \$2,755 was collected for damaged property from three accidents with \$1,066 pending for one accident in December.

Excavation and Sanitary Sewer Connections for 2010

Sanitary Sewer connection fees are designed to assess a fee on developers based on the size of their property and the impact on the capacity of the sanitary sewer collection system and the

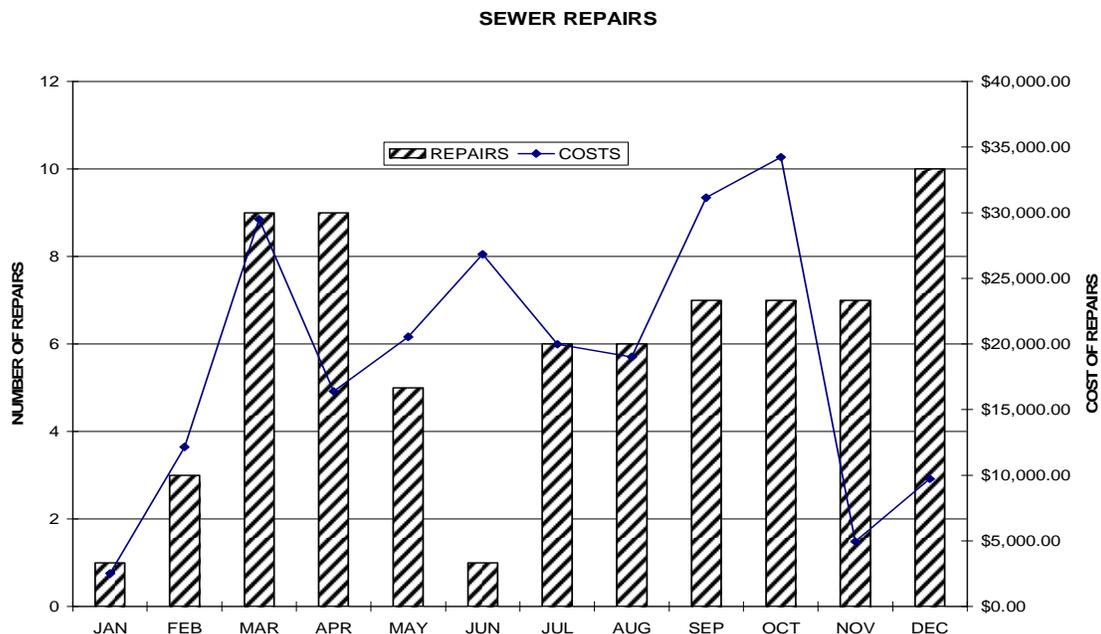
Wastewater Treatment Plant. The money collected is used for over-sizing and extending sanitary sewers and improvements at the Wastewater Treatment Plant.

In 2010 Engineering issued 624 Excavation Permits with fees totaling \$12,012 for all categories of excavation i.e. telephone, cable, gas, electric, boring, street, sewer, water, irrigation. This is a reduction from 2009 when \$16,195 was collected for 832 Excavation Permits. In addition, there were 182 Sanitary Sewer Connection Permits obtained in 2010 that totaled \$79,992.19 versus \$140,593.96 collected from 126 permits in 2009.

Sewer Insurance Program

The Engineering Department provides technical assistance for the maintenance of the city sewer system by updating all sanitary and storm sewer records and administrative assistance to the Sewer Lateral Insurance Program that began in 1986. The monthly fee for residential sewer insurance was increased to \$1.50 per month in 2008 to fund this program that protects single family residents from paying catastrophic sewer lateral repair costs. The homeowner is responsible for paying all routine sewer lateral cleaning costs, and if the line cannot be opened, the homeowner pays a \$250 deductible fee for the sewer lateral repair. The Sewer Insurance Fund pays all costs in excess of \$250 that are required for the repair of a private sewer lateral connection from the foundation wall of the home to the trunk sewer main. Included are the costs for the removal and replacement of public streets, curbs and sidewalks as a result of the repair. The fund is also used to replace existing sewer laterals that are located within sewer

...this program that protects single family residents from paying catastrophic sewer lateral repair costs



main replacement projects to minimize the need to repair a sewer lateral in a newly reconstructed street. Money collected in 2010 totaled over \$237,000 with expenses of over \$259,000. Complaints of sewer problems were received from 83 residents in 2010.

Review of Industrial, Commercial and Residential Developments in 2010

Developers did not submit any sanitary sewer main improvements or extensions for 2010. However, the City experienced mostly rehabilitation of existing sites with a few new commercial and residential homes constructed in existing subdivisions, for example the Cancer Care Partners facility at 301 Day Road formerly Dr. Del Pilar's practice and Tractor Supply at 330 Ireland Road.

MS4 Municipal Separate Storm Sewer System

In August 2010, the MS4 program underwent its first comprehensive audit by the Indiana Department of Environmental Management. In preparation for the audit, the MS4 program developed a stormwater pollution prevention education presentation that was aimed at municipal facility managers. In March 2010, the MS4 program, with assistance from Lawson-Fisher, provided an opportunity for department managers and their designated personnel to learn about stormwater pollution prevention requirements at City facilities. This fulfilled the MS4's requirement to provide stormwater pollution prevention education, and provided an opportunity to address issues that could potentially arise during the audit.



**Erosion control silt fencing catches
polluted run-off**

While the IDEM auditor was visiting the City, she planned to take the opportunity to monitor compliance with Rule 6 requirements for material handling facilities. Such facilities have been required to have Stormwater Pollution Prevention Plans (SWPPPs) in place since the passage of Rule 6. To assist other City entities, the MS4 program with the assistance of Lawson-Fisher assessed where such plans were applicable and provided education and assistance in plan preparation. As a result of these efforts, ten city facilities underwent self inspections to assess compliance. Several facilities updated their existing SWPPPs, and new plans were created by the Sewer Department, Central Services, the Fifth Street Recycling Center, and Eberhart Golf Course.

In addition, City facilities pro-actively corrected potential threats to storm water that were found during the self inspections. These included the purchase of spill kits at Central Services and the WWTP, inlet protection near the fueling station at Central Services, and a modification of traffic paint clean up and lawn maintenance procedures at Central Services. The self inspections and resulting changes proved to be important, as the IDEM inspector chose to inspect the Central Services, Sewer Department, Fifth Street Recycling, and the Eberhart facilities. Overall, she was very pleased with the audit and noted a few minor issues.

The City is a member of the Michiana Stormwater Partnership (MSP), which is a consortium of MS4s within St. Joseph County. To ensure consistent messaging and to pool resources, the MSP works collectively to implement the public education and outreach programs required by each

entity's NPDES permit. To simplify the audit process, the City's public education and outreach efforts were evaluated during a separate audit of the MSP. The results of this audit were extremely favorable, with the MSP being chosen for recognition at IDEM's annual MS4 meeting in 2011.

The City is currently working under its second 5 year NPDES permit term. To fulfill the requirements of the NDPEs permit, a biennial report was filed in October 2010. The report summarized the activities of the MS4 program over the previous two years.

Fats, Oils, and Grease (FOG)

In the summer of 2010, the Common Council approved revisions to the Sewer Use Ordinance to cover fats, oils, and grease (FOG), as requested by the Wastewater Treatment Plant, Sewer Maintenance Department and the Department of Engineering. The changes to the existing Sewer Use Ordinance address maintenance requirements and provide a regulatory framework for recovering costs incurred by the City to deal with problem facilities. A pamphlet regarding the changes and City's expectations was distributed with the 2010 January restaurant license renewal in anticipation of the program's implementation upon the 2011 renewal.

Construction Projects

With the Engineering Department being responsible for plan development and construction management, we often have projects under construction that are funded from several sources. In 2010 projects under construction were funded with Long Term Control Funds, Tax Incremental Funds, Cumulative Sewer, Local Road and Street Funds. In 2010, we had a one-time use of Stimulus Funding for (SRF) and ARRA (American Recovery Reinvestment Act) Funds. In 2010 these various construction projects totaled approximately \$39.2 million. These projects are highlighted below:



Northwest TIF Projects

City's consultant completed the preliminary engineering plans for the widening and the addition of a center left turn lane on Main Street between Donaldson and Day Road. This work has been divided into sections for construction.

In 2010 these various construction projects totaled approximately \$39.2 million

N. Main Street, Donaldson to Guam, Phase IV

The Construction of Main Street from Donaldson to Guam began in April 2010 and was completed in December 2010. The first of the five lanes to be completed were the southbound lanes. All traffic was then shifted to these lanes for the construction of the northbound lanes. The paving of the center lane was the final phase of this construction program. The existing asphalt pavement on



McKinley Avenue between Schumacher and Christyann was milled and resurfaced. Main Street north of McKinley to Guam was also milled and resurfaced. Dual left turns at McKinley and Main for all legs of the intersection were also added. This project also included new sidewalks, water mains, new storm sewer as well as a new traffic signal at Main and Omer.

N. Main Street, Mishawaka Avenue to Battell Street, Phase III

The reconstruction and widening of Main Street from Mishawaka Avenue to Battell Street in



addition to the reconstruction of Grove Street began in August 2010. New storm sewer was installed along Grove Street to outlet Main Street storm water to the tunnel at Sarah Street. New asphalt pavement, concrete curbs and sidewalks were reconstructed on Grove Street. Two-way traffic was maintained on the existing northbound lanes of Main Street while the southbound lanes were reconstructed. New water mains and storm sewers were installed

from Mishawaka Avenue to Battell Street in the west side of Main Street. New concrete southbound lanes were opened to traffic in December 2010. The reconstruction of the northbound lanes will resume in the spring of 2011.

N. Main Street, Ardennes to Edison Lakes Parkway, Phase VI

The section of Main Street from Ardennes to Edison Lakes Parkway includes a center left turn lane, extension of storm sewer, relocation of deceleration lanes, and many utility relocations. It also requires additional right-of-way due to the construction of the center left turn lane. Consultants have completed right-of-way requirements and identified land owners for acquisition. Legal descriptions, plats, and land acquisition will be completed in 2011 and anticipate construction for the 2012 season.

N. Main Street, Edison Road/Edison Lakes Parkway to Day Road, Phase VII

The design to add a protected center left turn lane from Edison/Edison Lakes to Day Road within Main Street has been completed including storm sewer extension and utility relocations. The additional right-of-way has been identified and the associated legal description and plats were completed in 2010. The land acquisition phase is planned for completion in 2011 and anticipate construction completion in 2012.

Trinity Place, Phase I

The construction of Trinity Place will be completed in two phases and will connect Holy Cross Parkway to Fir Road. The first phase included 28 foot concrete pavement, sidewalks, curb, storm, sanitary sewer and a water main, which began at Holy Cross Parkway and ended at Juday Creek for a distance of 1,405 lineal feet. The second phase is scheduled for 2011.



Mill Street Improvements and Municipal Parking Lot.



shrubs, perennials and ornamental grasses and street lights were also included in this project.

The reconstruction of Mill Street occurred between First and Front Street, which included two lanes of concrete pavement, curb and gutter, sidewalk and 32 diagonal parking spaces. The municipal parking lot was constructed east of Mill Street and included new concrete curbs and gutter, pavement, and 88 perpendicular parking spaces. Therefore, this project added a total of 120 parking spaces to the downtown area. The planting of deciduous and ornamental trees,

*...this project added a total of
120 parking spaces to the
downtown area*

Holy Cross Parkway Lift Station and Forcemain Project

A regional sanitary sewer lift station was constructed to service the new hospital and also the anticipated growth of the area. With the completion of the Lift Station and all phases early in 2011, this new facility will enable two existing lift stations (Autumn Lakes Apartments and Douglas Road at WSBT) to be eliminated. This will reduce operating and maintenance costs. A second project will reroute the discharge from the University Park Lift Station into this new facility. When these projects are complete the combined flow removed from the North Main Street Trunk Sewer will provide additional capacity for growth in the area north of SR 23. Specifically, the phases are as follows and please see attached Exhibit.

Holy Cross Parkway Lift Station, Phase IB (Juday Creek-Frank Park)



This lift station is located on north side of Holy Cross Parkway approximately 400LF east of the intersection of Edison Lakes Parkway and Holy Cross Parkway. This is the City's largest regional lift station and forcemain system. The Average flow is expected to be 1,030 gallons per minute (gpm) with a peak flow of 3000gpm paired with a 24" HDPE 18,000 LF Forcemain. Phases IA (for the lift station wetwell), IIA and IIB (forcemain) were completed in 2009 during the construction of Holy Cross Parkway from Douglas Road to Edison Lakes Parkway.

Holy Cross Parkway Lift Station, Forcemain Phases IIC and IID

Phase IIC included the installation of approximately 2,012 lineal feet of 24" HDPE forcemain using horizontal directional drilling from Henry Frank Park to Catalpa Avenue. The directional drilling construction method was selected due to a confined corridor and the desire to have minimal surface impact.



Phase IID installed approximately 4,582 lineal feet of 24” HDPE using horizontal directional drilling from Catalpa Avenue to Russ Street and Chestnut. The installation method of drilling was selected for the same reasons as Phase IIC, but was also the best method to address the compounding issues generated from being on the edge of the City’s Municipal Well Field and Liberty Elementary School.



Holy Cross Parkway Lift Station, Forcemain Phase IIE

This phase involved the installation of 3,900 lineal feet of 24” forcemain using horizontal directional drilling on Christyann Street from the railroad tracks to McKinley Avenue, on Russ Street from Christyann to Chestnut Street and also on the south side of McKinley Avenue from Sarah to Division Street. All installations were completed in 2010; however, the roto-milling and resurfacing of Russ Street from Division to Chestnut Street will be completed in the spring of 2011.

Holy Cross Parkway Lift Station, Forcemain Phase IIF

This phase was completed in the summer of 2010 and involved the installation of 2,052 lineal feet of 20” forcemain using open cut construction. This method of construction allowed storm and sanitary sewer separation and street reconstruction for one block of Grove Street between Sarah and Christyann Streets and six blocks of Christyann Street. The project therefore included the traditional items of tree removals, new curbs, full depth pavement, and sidewalk where appropriate. A control structure was built in Central Park which will better utilize the old and new river crossing pipes in the future.



River Crossing No. 2 Expansion and Modification of CSO 19



This project involved three 24” HDPE river crossing barrels and associated headworks and tailworks structures that will serve to accept the flow from the Holy Cross Parkway Lift Station Forcemain. The project connects Central Park control structure from IIF to the junction chamber at the Police Station, which was constructed through the Front Street Reconstruction Project which interconnects it with the existing River Crossing No. 2. With this in place and connected, as the other systems

are separated or abandoned with the city as part of the Long Term Control Plan, the combined sewer overflows will be eliminated from CSO #19. This project has been completed except for the final grading and seeding, which is scheduled for the spring of 2011

**Public Works Projects
Summer Street Paving Program**

The Engineering Department assisted in the overseeing 20,625 lineal feet of street milling and resurfacing projects and 2,107 linear feet of alley paving. The summary of the Summer Street material bid prices are detailed in the table below:

2010 Summer Street Unit Prices

Materials:			Reith Riley Construction Company, Inc	
Description	Qty	Unit	Unit Price	Extension
Bituminous Materials:				
Hot Mix Asphalt Pavement, Surface 9.5MM	4,000	TON	\$50.00	\$200,000.00
Hot Mix Asphalt Pavement,	4,000	TON	\$50.00	\$200,000.00
Hot Mix Asphalt Pavement,	1500	TON	\$65.00	\$97,750.00
HMA Surface - Alley Paving (2")	200	TON	\$36.00	\$7,200.00
HMA Surface - Alley Paving (2")	400	TON	\$75.00	\$30,000.00
HMA Surface Patching - Local Streets	400	TON	\$75.00	\$30,000.00
HMA Surface Patching - High Volume	500	TON	\$80.00	\$40,000.00
HMA Pavement, Surface - Type B.F. Slag	1000	TON	\$80.00	\$80,000.00
HMA Pavement, Intermediate 19MM	250	TON	\$51.00	\$12,750.00
HMA Pavement, Intermediate 19MM FOB	100	TON	\$40.00	\$4,000.00
HMA Pavement, Intermediate, 9.5MM	100	TON	\$35.00	\$3,500.00
HMA Pavement, Base 25MM	200	TON	\$35.00	\$7,000.00
HMA Pavement, Base 25MM FOB	100	TON	\$30.00	\$3,000.00
Bituminous Material Tack	20	TON	\$1.00	\$20.00
Bituminous Material Crack Pouring FOB	2,000	GAL	no bid	0
Materials:				
Bituminous Material Dust Palliative FOB	2,000	GAL	no bid	0
Bituminous Patch Material FOB	500	TON	\$75.00	\$37,500.00
Emulsified Asphalt FOB	20,000	GAL	no bid	0

AGGREGATE:				
Course Aggregate #73 stone or slag	150	TON	\$21.00	0
Course Aggregate #73 stone or slag FOB	150	TON	\$15.00	0
Course Aggregate #73 Gravel	150	TON	\$15.00	0
Course Aggregate #73 Gravel FOB	150	TON	\$9.00	0
Course Aggregate #11 or #12 LS or Slag Chips	150	TON	\$26.00	0
Course Aggregate #11 or #12 LS or Slag FOB	150	TON	\$20.00	0
Fine Aggregate #23 or #24	150	TON	\$20.50	0
Fine Aggregate #23 or #24 FOB	150	TON	4.50	0
ROTO-MILLING:				
Contractor Retain Materials 0"-2"	15,000	SYD	\$2.25	\$33,750.00
Contractor Retain Materials 2"-4"	500	SYD	\$2.30	\$1,150.00
Contractor Retain Materials 4"-6"	500	SYD	\$2.40	\$1,200.00
City Retain Materials 0"-2"	15,000	SYD	\$2.30	\$34,300.00
City Retain Materials 2"-4"	500	SYD	\$2.40	\$1,175.00
City Retain Materials 4"-6"	500	SYD	\$2.50	\$1,200.00

MISCELLANEOUS ITEMS:				
Street Excavation	300	TON	\$10.00	\$3,000.00
Bituminous Curbs	500	LF	\$8.00	\$4,000.00
TOTAL BID:				\$832,520.00

The following table summarizes the streets that were resurfaced in 2010. All were either edge milled 6 feet along the curb line or the entire surface removed to retain as much curb exposure as possible.

2010 Street Resurfacing Summary

Street Name / Section	LENGTH
Bennington Drive – Fern Hill Drive to Dudley Drive -portion	600
Bennington Drive – Marrett Drive to Waverly Court - portion	500
Bennington Drive – Shelton Drive to Rosemont Place - portion	450
Benton Street – Mishawaka Avenue to Wilson Blvd	700
Bittersweet Road – Lincolnway East to Vistula - portion	700
Borley Avenue – Calhoun Street to Webster Street	300
Borley Avenue – Christyann Street to Division Street	250
Bradford Street – Byrkit Avenue to Dead End	700
Calhoun Street – Mishawaka Avenue south 300'	300
Calhoun Street – Wilson Blvd intersection	100
Chestnut Street – Lowell Avenue to 100' south of Edgar Avenue	425
Clay Street – Jefferson Blvd to Fairmount Avenue	350
Clay Street – Railroad to Lawrence and Battell Street Intersection	1500
Cleveland Street – Eighth Street Intersection	100
Colfax Avenue – Division Street to Chestnut Street	650
Donaldson Avenue – Christyann Street to Division Street	250
Fifth Street – Merrifield Avenue to Byrkit Avenue	1450
Fulmer Road – Wild Cherry Ridge West – west 700'	700
Grove Street – Liberty Drive to Charlotte Street	450
Homewood Avenue – Beiger Street to Virgil Street	650
Main Street – Sixth Street to Eighth Street	600
Mishawaka Avenue – Calhoun Street to Logan Street	400
Ninth Street – Main Street to Spring Street	700
Oak Street – grove Street to Lawrence Street	300
Omer Street – Division Street to Chestnut Street	650
Park Place – Edison Lakes Parkway to 100' west of Park Place West	700
Park Place – Filbert Road – west 800'	800
Third Street – Race Street to Cedar Street	1200
Virgil Street - Third Street to Fourth Street	350
Wenger Street – Lincolnway East to Mishawaka Avenue	1600
West Street – Fourteenth Street to Sixteenth Street	700
Total Linear Feet	20,625

Alley Paving Program

The Alley Paving Program provides a 50/50 split of costs with residents for placement of 2 inches of bituminous pavement 10 feet in width. Typically, upon request, a field inspection of each alley is conducted to determine the feasibility of paving the alley. A list of all property owners adjacent to the alley is obtained from the County Assessor's Office. This information is provided to a designee of the property owners who is responsible for collecting the cost per linear foot assessment from each property owner along the alley. The residents along the alley benefit from this work because of the reduction of the dirt and dust generated by traffic. The Street Department also benefits by not having to grade or oil the paved alley for at least ten years. There are 256,178 LF or 48.52 total miles of alley that are open to the public, and a significant number of these have been paved by property owners. The table below lists the alleys that were paved as part of this 2010 program:

2010 Alley Paving Program

Direction	Location	Length
E/W	Lincolnway East, Virginia, Manor, South Shore Drive	290
N/S	North of BJ Street East of Merrifield	2
E/W	Mason, Gernhart, Mishawaka, Grove	260
E/W	11th, 12th, South West Street, Wells	620
N/S	Linden Avenue, Byrkit, State, Mishawaka Avenue	600
N/S	3rd , 4th, Melville, Virgil	325

Curb and Sidewalk Program

Two areas were identified by the Engineering to make improvements to existing curbs and sidewalks. This year a total of \$85,562 was spent in neighborhoods on curbs and sidewalk



improvements. West and Center Street received approximately 300 linear feet of curb and sidewalk replacement. Ten residents participated in the 2010 curb and sidewalk program. This program allows Mishawaka homeowners to share the cost of replacing their curbs, sidewalks, and drive approaches with the City at 50 percent of the total expense. The following tables summarize the costs the Sidewalk and Curb Program for

Curb appeal residents can take advantage of the curb and sidewalk program

2010.

Sidewalk and Curb Program, 2010 Unit Prices

Project (1)				Selge Construction Company	
Item	Undistributed Description	Qty	Unit	Unit Price	Amount
1	Sidewalk Removal	500	SYD	\$6.50	\$3,250.00
2	Sidewalk Removal, Segments 20' or Less	100	SYD	6.50\$	\$650.00
3	Concrete Sidewalk 4"	200	SYD	\$32.30	\$6,460.00
4	Concrete Sidewalk, 4" Segments 20' or Less	50	SYD	\$33.50	\$1,675.00
5	Curb Removal	250	LFT	\$6.50	\$1,625.00
6	Curb Removal Segments 20' or Less	50	LFT	\$7.00	\$350.00
7	Curb & Gutter Removal	250	LFT	\$7.50	\$1,875.00
8	Curb & Gutter Removal Segments 20' or Less	50	LFT	\$8.00	\$400.00
9	Concrete Curb	250	LFT	\$25.00	\$6,250.00
10	Concrete Curb Segments 20' or Less	50	LFT	\$26.00	\$1,300.00
11	Combination Concrete Curb & Gutter Type A	250	LFT	\$23.00	\$5,750.00
12	Combination Concrete Curb & Gutter Type A Segments 20' or Less	100	LFT	\$24.00	\$2,400.00
13	Combination Concrete Curb & Gutter	125	LFT	\$22.00	\$2,750.00
14	Combination Concrete Curb & Gutter Segments 20' or Less	50	LFT	\$23.00	\$1,150.00
15	Integral Curb & Sidewalk	250	LFT	\$29.00	\$7,250.00
16	Integral Curb & Sidewalk Segments 20' or Less	100	LFT	\$30.00	\$3,000.00
17	Concrete, Plain 6"	150	SYD	\$45.00	\$6,750.00
18	Concrete, Plain 10"	100	SYD	\$46.00	\$4,600.00
19	Mulched seeding	500	SYD	\$1.00	\$500.00
20	Pavement Removal	250	SYD	\$18.00	\$4,500.00
21	Topsoil	75	CYD	\$20.00	\$1,500.00
22	Sodding	100	SYD	\$8.00	\$800.00
23	Unsuitable Material Removal	75	CYD	\$21.00	\$1,575.00
24	Concrete Curb Capping	500	LFT	\$5.00	\$2,500.00
25	Street Excavation, 6"	250	SFT	\$7.00	\$1,750.00
26	Street Excavation, 8"	500	SFT	\$7.00	\$3,500.00
27	Street Excavation, 10"	500	SFT	\$7.00	\$3,500.00
28	Street Excavation, 10" (High Volume)	250	SFT	\$7.00	\$1,750.00
29	Concrete Curb Ramps	50	SYD	\$120.00	\$6,000.00
	Project (1) Total				\$85,360.00

Table of 2010 Sidewalk and Curb Program, 2010 Unit Prices (Davis Bacon)

Project (2) DAVIS BACON				Selge Construction Company	
Item	Undistributed Description	Qty	Unit	Unit Price	Amount
1	Sidewalk Removal	500	SYD	\$5.50	\$3,500.00
2	Sidewalk Removal, Segments 20' or Less	500	SYD	\$6.00	\$4,375.00
3	Concrete Sidewalk 4"	200	SYD	\$31.00	\$5,800.00
4	Concrete Sidewalk, 4" Segments 20' or Less	200	SYD	\$32.00	\$6,900.00
5	Curb Removal	250	LFT	\$6.50	\$1,562.50
6	Curb Removal Segments 20' or Less	250	LFT	\$7.00	\$1,937.50
7	Curb & Gutter Removal	250	LFT	\$7.50	\$1,625.00
8	Curb & Gutter Removal Segments 20' or Less	250	LFT	\$8.00	\$1,937.50
9	Concrete Curb	250	LFT	\$23.00	\$4,962.50
10	Concrete Curb Segments 20' or Less	250	LFT	\$24.00	\$6,962.50
11	Combination Concrete Curb & Gutter Type A	250	LFT	\$21.00	\$5,250.00
12	Combination Concrete Curb & Gutter Type A Segments 20' or Less	125	LFT	\$22.00	\$2,875.00
13	Combination Concrete Curb & Gutter	125	LFT	\$21.00	\$2,625.00
14	Combination Concrete Curb & Gutter Segments 20' or Less	125	LFT	\$22.00	\$2,875.00
15	Integral Curb & Sidewalk	250	LFT	\$29.00	\$6,625.00
16	Integral Curb & Sidewalk Segments 20' or Less	250	LFT	\$30.00	\$7,812.50
17	Concrete, Plain 6"	150	SYD	\$45.00	\$5,850.00
18	Concrete, Plain 10"	100	SYD	\$46.00	\$4,400.00
19	Mulched seeding	500	SYD	\$1.00	\$875.00
20	Pavement Removal	250	SYD	\$18.00	\$4,000.00
21	Topsoil	75	CYD	\$20.00	\$1,762.50
22	Sodding	100	SYD	\$8.00	\$1,000.00
23	Unsuitable Material Removal	75	CYD	\$21.00	\$1,875.00
24	Concrete Curb Ramps	100	SYD	\$100.00	\$9,500.00
	Project (2) Total				\$95,700.00

Lynn Street

In 2010 engineering completed the design and construction of storm sewer, curb, sidewalk and street improvements on Lynn Street from Borley Avenue to McKinley Avenue and Edgar Avenue from Lynn Street east to the dead end as the fourth and final phase of the Borley Avenue Improvement Area.

This project is approximately 2700 feet in length and provided improvements to over 50 residents, including 2,200 linear feet of storm sewer, 5,400 linear feet of curb and gutter, 2,600 linear feet of sidewalk, concrete drive approaches and construction of a full depth asphalt street 28 feet in width. This contract was awarded to Walsh & Kelly, Inc. in the amount of \$655,405.90 on March 23, 2010 and completed by the end of the 2010 construction season.



Long Term Control Projects

The City's Long Term Control Plan (LTCP) was designed to improve wastewater treatment and the sewer collection system to reduce the overflows from 50 per year in 2008 to less than 1 per year upon the plan's complete implementation. Improvements were previously completed at the Wastewater Treatment Plant and 2010 concentrated on a portion of the collection system that diverts 350 million gallons of combined sewer overflow (CSO) to the St Joseph River.

Milburn Boulevard Area Sewer Improvement Projects

The first area identified was the Milburn Area which is bounded by Logan Street, Ironwood Drive, Dragoon Trail/Panama Street and the St. Joseph River. This area is 348 acres with approximately 1,300 residents. The projects involved a design of a new separate storm system while utilizing the existing combined sewer as the sanitary sewer system after cured in place pipe (CIPP) lining rehabilitation. A new underdrain system was included to protect homes from foundation issues resulting from sealing the ground water from the historical outlet it found from the deteriorated sewer system. The following table details each of the areas, which is scheduled for completion by 2015



with adequate funding. An estimated eight construction projects, each costing approximately \$2

to \$3.5 million were necessary to complete the entire area. The Division G Project - River Avenue Area bound by the St Joseph River, Railroad and Ironwood Drive, and the CIPP Lining Projects have yet to be completed.

Milburn Boulevard Area Improvement Projects

Division Name	Project Description	Schedule/Status
Div. A, Ph I: Lincolnway, (Family Children's Center to Alabama St.) and Sixth St (Meridian to Alabama St.)	60" Storm outfall at river for new storm sewers and 18" underdrain in Alabama, Lincolnway and Sixth St. Includes 72" & 24" borings under RR, new curb, pavement, and portions of sidewalk for Alabama and Sixth St. Lincolnway pavement was completed with INDOT project and funding	Completed spring 2009
Div. A, Ph II, Lincolnway, (Byerly to Alabama)	New 30" storm sewer, underdrain, replaced sanitary sewer, new curb. Lincolnway pavement was completed with INDOT project and funding.	Completed fall 2008
Div. B, Southwest I	New 30" storm sewer, 18" underdrain, sanitary lining, new curb and gutter for Milburn and Delaware, new curb for portions of Geyer and Russell. All new surface.	Completed fall 2010
Div. C, Meridian/Panama	New 30" storm sewer, 18" underdrain, sanitary lining, new curb and gutter for Panama from Logan to Reddick, new straight curb for Meridian from Panama to Sixth St. All new pavement.	Completed fall 2010
Div. D, Southwest II	New 30" storm sewer, 18" underdrain, sanitary lining, curb and gutter for Milburn and Delaware, new curb for portions of Hubbard and Russell. All new surface	Completed fall 2010
Div. E, Dale from Sixth St to Panama / Delaware from Dale to Reddick.	New 30" storm sewer, 18" underdrain, sanitary lining, curb and gutter for Panama from Grand to Reddick, new straight curb for Dale from Panama to Sixth St. All new pavement.	Completed fall 2010
Div. F, Eastern	New 24" & 30" storm sewer, 18" underdrain, sanitary lining, curb and gutter for Milburn and Delaware, new straight curb for Burdette from Milburn to Panama. All new pavement	Completed 2010
Div. G, River Avenue	Flow Monitor and upgrading lift station	Bid 2014
Div. H, Central Section	New storm sewer, 18" underdrain, sanitary lining, curb and gutter for Milburn and Delaware, new straight curb for portions of Sixth St. and Panama. All new surface.	Completed fall 2010
Milburn CIPP Linings Phases I and II	Sanitary sewer linings for Divisions A, B, D, E, F, H and streets not disturbed in previous projects.	Bid Early 2011

Juday Creek Force Main Rehabilitation (SRF Funds)

This Project was selected by the IDEM SRF Loan Program to be partially funded with a grant from the Federal Stimulus Package and the balance with the SRF Loan Program. Approximately 11,086 lineal feet of 18" Ductile Iron Forcemain was rehabilitated with structural Cured in Place (CIPP) lining from the Juday Creek Lift Station to Lowell Avenue. In addition, 1,888 lineal feet of 18" forcemain was replaced with a 24" gravity sewer main along Lowell and Clay Street. This project requires extensive bypass pumping to accommodate the flows currently handled by the



lift station and therefore upgraded existing pumps to VFD's and associated controls within the Juday Creek Lift Station. About 60 percent of this project has been completed with the remainder to be completed by the fall of 2011.

Northwest Trunk Gravity Sewer Rehabilitation (Wastewater Funding)

This project involved the cleaning and rehabilitation of approximately 2,600 lineal feet of 30" and 36" reinforced concrete pipe in Benton Street from the CN Railroad to River Crossing No. 4 as well as the cleaning of River Crossing No.4. This pipe was lined with Cured in Place Pipe (CIPP), and the manholes have been rehabilitated by coating them with a structural polyurethane product. The project is complete with the exception of the final cleaning and inspection of the river crossing barrels. The anticipated completion is scheduled for the spring of 2011.

Utility Coordination/Relocation Agreement with INDOT for SR 331

In 2010 the Engineering Department completed the relocation of the Motel 6 Lift Station and Forcemain, which was required by INDOT for the reconstruction of Capital Avenue (SR 331). The cost will be reimbursed 100 percent by the State in the amount of \$94,248. In addition, the Sanitary Sewer on SR 933 at Mariellen was lowered for the State's project and will be reimbursed in the amount of \$51,023.44 for a 63.38 percent reimbursement of \$80,504.00 cost of this project.

Crawford Park Manhole No. 19 and CSO No. 14

This project adjusted the rim of Manhole No. 19, installed a new concrete collar, regraded, and seeded the surrounding area, which is located in the southwest portion of Crawford Park. In addition, a deteriorated 24" butterfly valve was removed from the outfall pipe of CSO 14.

American Recovery Recovery Reinvestment Act (ARRA) Projects

McKinley Traffic Signal Modernization

In 2010 five signals on McKinley Avenue from Logan to Division Street were upgraded plus new six-foot sidewalks with handicap ramps and crosswalks at various locations were installed along McKinley Avenue. These improvements were funded with 69 percent ARRA funds. The approved federal split was \$1,340,000 ARRA funds and \$712,000 local funds. The modernization of these intersections will improve the traffic flow in the corridor and result in reduced air pollution caused by the stop and go traffic.

Traffic Signal Efficiency Upgrade

In 2010, the conversion of traffic signal incandescent bulbs to LED bulbs at 33 intersections was completed with \$312,367 of ARRA funds at no cost to the City of Mishawaka. This conversion will reduce the operational costs for Mishawaka's traffic signals by 53 percent or approximately a \$45,000 annual savings. Because the LED signals will not require the annual relamp as the incandescent bulb, this will result in an additional annual savings of \$11,000 and a ten-year savings of nearly \$560,000. In addition, all of the existing school safety flashers have been converted to LED bulbs as part of the Highway Safety Improvement Project which will increase the city's future electrical savings.

Large Overhead Identification Signs

Several large overhead identification signs have been replaced throughout the city in 2010, primarily on Union Street, Main Street and Lincolnway East and West with \$68,709 of ARRA funds at no cost to the City of Mishawaka.

Resurfacing Projects

Bremen Highway was resurfaced from Ireland Road to the US 20 Bypass with \$163,175 of ARRA funds at no cost to the City of Mishawaka.

Fir Road was resurfaced from McKinley to the railroad tracks with \$158,511 of ARRA funds at no cost to the City of Mishawaka.

McKinley Avenue was resurfaced from Division to Home Street with \$360,715 of ARRA funds at no cost the City of Mishawaka.

Highway Safety Improvement Program (HSIP)

The Engineering Department has implemented four projects as part of the Highway Safety Improvement Program through MACOG with federal funds. This Program is to achieve a significant reduction in traffic fatalities and serious injuries on public roads. The four projects regarding Guardrail placement, Delineator installation, Traffic Signal installation, and School Warning Flasher replacements are identified as follows:

Guardrail placement along the north side of Dragoon Trail will be installed as required from Russell Avenue to Spring Street with an elevation difference of up to 30 feet from the edge of pavement. The placement of this guardrail will protect existing residential homes, a public park, an athletic field and a utility pole line.

Placement of delineators along the north and south edge of pavement along Dragoon Trail from Russell Avenue to Clover Road, approximately 18,000 linear feet of roadway. These delineators will aid in the increase of driver preview time for changes in roadway alignment while providing continual guidance in all weather conditions along an unlighted street.

Installation of a new traffic signal at the intersection of Logan Street and Dragoon Trail includes the realignment of Logan Street into the intersection. A traffic analysis was completed and determined a warrant for a traffic signal was valid. The construction of the new athletic field has since added to the traffic volume in this area.

Replacement of ten out of twelve existing school warning flashers from incandescent to LED including a beacon located on the back of the assembly identifying to traffic they are traveling within a school zone. The change to LED will allow a brighter display during all weather conditions providing a greater distance of visibility. The greater distance allows for the vehicular traffic to have an advantage of recognizing the school zone and providing the highest level of protection for pedestrians. In addition to the safety advantages, the LED provides a longer life, less energy and a constant level of safety. The remaining two school warning flasher locations have been included in previous or scheduled City projects and offer this same level of safety.

Quiet Zones – Train Whistle Regulation

The Federal Railroad Administration (FRA) published its “Interim Final Rule” in December 2003 to establish standards that local communities must implement to silence locomotive horns



Mountable Median Channelization Devices

while improving safety at public highway rail-grade crossings. By employing a risk-based approach, communities with “grandfathered” whistle bans could maintain the quality of life they have become accustomed to while ensuring public safety at highway railroad crossings. The FRA “Use of Locomotive Horns at Highway-Rail Grade Crossings” Final Rule became effective on June 24, 2005. This rule will pre-empt existing state and local laws governing the sounding of locomotive horns. In accordance with Final Rule, Section 222.43, the City of

Mishawaka submitted the Notice of Intent (NOI) in 2008 to continue its pre-rule quiet zone and filed a detailed plan for quiet zone improvements. These proposed safety measures were presented to the public at a Public Hearing in 2009 and at a Public Hearing on a Resolution of the Common Council for the permanent closure of the Wells Street crossing on October 6, 2009. The City has also installed mountable median channelization devices at the S. Main Street crossing and the Jefferson Boulevard crossing. The City is currently awaiting the FRA’s review of our Quiet Zone Application.

Traffic Engineering Services

Traffic Engineering is responsible for the operation and maintenance of 56 city-owned traffic signals. In addition 13 school warning devices, two four-way red flashers (Jefferson & Merrifield; Twelfth Street and Merrifield Avenue) and two yellow warning flashers (Lincolnway East/SR 933 at Fire Station No. 4 and Mishawaka Avenue at Byrkit Avenue) are also under the responsibility of Traffic Engineering. Traffic Engineering received several traffic-related requests for additional or modified signage through the Mishawaka Police Department, concerned motorists, and citizens. All requests are investigated by Engineering. In 2010, these requests resulted in the issuance of 39 work orders for the installation or modification of signage and pavement markings.

Traffic Signal Equipment

Bittersweet Road & Vistula Road	Main Street & Broadway Boulevard
Bremen Highway & Meijer Drive	Main Street & Jefferson Boulevard
Bremen Highway & Ireland Road	Main Street & Omer Avenue
Church Street & Fourth Street	Main Street & Leyte Street
Church Street & Third Street	Main Street & Catalpa Drive
Church Street & First Street	Main Street & Edison Road
Church Street & Main Street	Main Street & Day Road
Day Road & Edison Lakes Parkway	Main Street & Edison Lakes Parkway
Day Road & Filbert Road	Main Street & Douglas Road
Day Road & Fir Road	Main Street & Indian Ridge Boulevard
Grape Road & Catalpa Drive	Main Street & University Drive
Grape Road & Edison Road	McKinley Avenue & Miracle Lane
Grape Road & Day Road	McKinley Avenue & Grape/Liberty
Grape Road & Edison Lakes Parkway	McKinley Avenue & Main Street
Grape Road & Douglas Road	McKinley Avenue & Division Street
Grape Road & Indian Ridge Boulevard	McKinley Avenue & Fir/Byrkit
Grape Road & University Drive	McKinley Avenue & Home Street
Indian Ridge Boulevard & Home Depot	Mishawaka Avenue & Cedar Street
Indian Ridge Boulevard @ Wilshire & Indian Ridge Plaza	Union Street & Dragoon Trail
Jefferson Boulevard & Liberty Drive	Union Street & Twelfth/Thirteenth Street
Jefferson Boulevard & Division Street	Union Street & Eighth Street
Jefferson Boulevard & Cedar Street	Union Street & Seventh Street
Jefferson Boulevard & Byrkit Avenue	University Drive & Fir Road
Logan Street & Milburn Boulevard	University Drive & Target
Main Street & Eighth Street	Byrkit Avenue & Twelfth Street
Main Street & Fourth Street	Home Street & Jefferson Blvd.
Main Street & Third Street	Holy Cross Parkway & Douglas Road
Main Street & First Street	
Main Street & Mishawaka Avenue	

Traffic Signal and Flasher Maintenance

In 2010 the Engineering Department saved the City of Mishawaka and estimated \$1,204.00 through improved management of the maintenance repair costs for city traffic signal equipment. This savings involved 111 repairs of traffic signals, luminaries, and guardrails, and included simple maintenance to all 56 signal cabinets that included changing filters, internal lights, and general cleaning of all equipment. This maintenance had been previously performed under the Annual Signal Relamp Maintenance Program.

The Engineering Department also resolved numerous 4-way flash problems involving the resetting of traffic controllers and conflict monitors.

Signage

New sign retro-reflectivity standards are being required by the Manual of Uniform Traffic Control Devices. The Federal Highway Administration (FHWA) believes that this proposed change will continue to promote safety while providing sufficient flexibility for agencies to choose a maintenance method that best matches their specific conditions.

Indiana Safe Routes to School Program

Engineering continues to work with the State of Indiana to establish a healthy and safe environment for school children through the Indiana Safe Routes to School Program. Each school has been examined to identify a safe route for that school. In 2010, Emmons Elementary School was selected for this program with \$247,965.00 available for improvements to S. Main Street and E. Sixteenth Street in the Emmons Elementary School area. Working collectively with school officials, parents, and the Mishawaka Police Department, it is our intent to design a safe route that is well maintained so that kids may easily walk or bike to and from school. These improvements will include the replacement of damaged sidewalks and the removal of any brush or trees that may hamper the walkway to Emmons. Encouraging kids to walk or bike to school will reduce traffic congestion, fuel consumption and air pollution near our schools. Hopefully, this will lessen the growing health and obesity concerns for our children. A different elementary school will be targeted each year throughout the life of this program.

...establish a healthy and safe environment for school children...

School Signage

Every year the Engineering Department inventories all traffic control signage near public and private schools. This process involves replacing damaged, faded or missing signs and repainting school crosswalks. This enables Engineering to maintain safe and effective traffic control signage that follows the guidelines as outlined in the Indiana Manual on Uniform Traffic Control Devices for all schools in Mishawaka. A table of existing school flashers is listed below:

School Flashers

Location	School
Cedar Street & Battell Street	Battell School
Eighth Street & West Street	St. Bavo's School
Twelfth Street & Bennington Drive	Hums School
Lincolnway East (SR 933) & Wenger Street	Mishawaka High School
Lincolnway East (SR 933) & State Street	Mishawaka High School
Lincolnway East (SR 933) & Beiger Street	Beiger School
Lincolnway East (SR 933) & Ballard Ave.	Twin Branch School
Main Street & Fourteenth Street	Emmons School
McKinley Avenue & Division Street	Liberty School
Milburn Boulevard & Hendricks Street	LaSalle School
Liberty Drive & Lowell Avenue	John Young Middle School
Union Street & Thirteenth Street	Emmons School
Vistula Road & Ballard Avenue	Twin Branch School

Traffic Studies

Requests for four-way stops, time limit parking, restricted parking, etc. require a recommendation by the Traffic Commission and in many instances, action by the Mishawaka Common Council before implementation. The Engineering Department conducts a thorough investigation to determine the merits of each request. These studies are then presented to the Traffic Commission for review and recommendation and to the Common Council. Upon adoption of an Ordinance by the Mishawaka Common Council, the Engineering Department issues a work order to install the appropriate signage. In 2010 the Council approved the following changes that were recommended by the Traffic Commission: (1) All-way stop at Iowa

Street and Eleventh Street and (2) All-way stop at Michigan Avenue and Eleventh Street (3) Speed reduction on east Eleventh Street from Laurel to Union St from 30 to 20 mph (4) All-way stop at Delaware and Alabama Street (5) All-way stop at Panama and Meridian Street, and (6) converting Edgewater Drive to one-way south from Mishawaka Avenue to John Street.

The Engineering Department continues to work with the Mishawaka City Police Department to resolve truck problems. With several streets closed or in various stages of repair during the 2010 construction year, excessive truck traffic occurred on non-truck route streets. Police enforcement assisted in curbing these truck problems in residential areas.

MACOG (Michiana Area Council of Governments) continues to partner with the City to gather traffic count data at various Mishawaka locations. This data assists in tracking changes in traffic patterns and may possibly be used to justify changes in infrastructure. In 2010 various improved corridors in both the north and south regions of the City were selected for speed studies, which MACOG provided data for speeds and traffic accidents in addition to performing speed counts at locations outside of MACOG's data.

A CMAQ grant was approved in 2009 to update the traffic signals on Church/Union Street from Front Street to Dragoon Trail. Construction for this closed-loop traffic signal central control system is scheduled to begin in 2011 for this corridor.

Disabled Parking Approvals

With the assistance of the Mishawaka Police Traffic Division, the Engineering Department manages the application process for designated disabled spaces on public streets. In 2010 the Board of Public Works and Safety approved the designation of eight new disabled parking spaced and the removal of eleven spaces that were no longer required.

Future Projects

Project	Completion Date	Amount
Northwest TIF Area		
Main Street Improvements – Edison to Day, Center Left Turn	Oct 2011	\$1,250,000
Main/Church Reconstruction – South of Bridge to First Street	Nov 2011	\$3,775,000
Main Street Improvements – Ardennes Ave to Edison Rd	Nov 2012	\$1,690,000
Third Street – Merrifield to Laurel, Reconstruction, 1,200 lf, TIF	Nov 2011	\$550,000
Fourth Street - Merrifield to Spring (Tunneling) Reconstruction, 4,400 lf, LTCP	Nov 2012	\$11,000,000
South Side TIF		
Bremen Highway Gateway Master Plan	July 2011	\$150,000
Bremen Highway at Meijer Dr. Right-Turn Lane	June 2011	\$350,000
Twelfth Street Improvement Environmental Study	Nov 2009	\$75,000
Public Works Projects		
LWE at Capital Lift Station/SR331 Project 50/50/WWTP/INDOT	Oct 2011	\$2,500,000
LPA Projects		
Fir Road, Toll Rd Bridge to south of Cleveland	Nov 2013	\$1,600,000
Twelfth Street Improvements from Blackberry to Capital	Jun 2013	\$6,200,000