

Engineering Department

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 and review of all private development and utility companies projects for conformance with Engineering Standards, i.e. stormwater management, sanitary 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, i.e. 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.

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 MSP, which is the regional MS4 Education Committee with St. Joseph County, City of South Bend, Bethel College, Ivy Tech, 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 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 smaller Public Works projects, the curb and sidewalk program, the summer street paving project, assigns all City addresses in conjunction with 911 emergency systems, and troubleshoots 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 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 is the City's coordinator for the City MS-4 Program, processing approval of Erosion Control Plans, and assuring their compliance during, and post construction.

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 project files and City As-Built records, sanitary sewer construction and connection applications, excavation and sewer permits, sewer insurance records, managing City telephone system repairs/service, and other duties as required.

The Office Coordinator from the Sewer Maintenance Department splits her time between the Sewer Department and the Engineering Department, which typically brings efficiency to both departments due to many similar sewer issues in both departments. The Sewer Maintenance Department has assumed the field locating duties from the Engineering Department for storm and sanitary sewers prior to any excavation in the public right of way. The Sewer Office Coordinator while in our office reviews Locate e-mails, updates Locate database, gathers historic sewer As-built information for the Sewer staff to locate in the field, and also assists with phone and front counter inquiries from the public. During the past years where the economy had been depressed, the number of locating requests was low compared to the historical high values set in

the last 15 years. However, 2013 has shown an increase in non-municipal utility company requests for permits and project locating in addition to the increase of the private development sector locating requests. The increase in 2013 has impacted the response time to where the 2014 budget will add a full-time Locate/Permit Coordinator to staff, which will allow the Sewer Office Coordinator to return to the Sewer Department. The job of utility locating will remain an element of the Sewer Department. Depending upon the number of locates going forward, they may impact the amount of maintenance work performed by the Sewer Department and may require reconfiguration of responsibilities if requests continue to increase.

During the last two years the Department operated with a part time staff member to assist with excavation and sewer permits, process sewer insurance applicants, and issue address assignments. In addition the part-time staff answered telephones and responded to contractors and citizens that walk in the office. During the year, the part-time help was reassigned to another department.

Realizing the value of having a regular part time staff member and the projection of additional projects in the future, a full-time office staff member will be added in 2014. This will also offer greater flexibility for the full time staff members who often work their schedules around office management duties during lunch and illness.

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



Engineering ensures contractor and individual compliance with the City of Mishawaka

Excavation and Public Works Bonding Ordinances and permitting requirements. The Engineering Department issues and tracks permits for excavation, street cuts for all City streets and public rights of way. Excavation Permits are important for protecting the motoring public and the existing infrastructure, plus ensuring proper restoration of street cuts. The Engineering Department provides engineering assistance for municipal utility projects on request and on other major public works capital improvement projects.

Our office receives copies of accident reports involving City property damage, such as guardrails, traffic signs, traffic signals, trees, and other City property for restitution of damaged property through insurance claims or personal payment plans. In 2013, \$4,189.67 was collected for damaged public property at four locations.

MS-4 (Municipal Separate Storm Sewer System)

In November of 2011, the MS4 program underwent its second in a series of three audits of the program. This audit focused on the management of our construction run-off program. In preparation for the audit, MS4 procedures were evaluated and streamlined. City personnel worked diligently to ensure that the City's projects were complying with local and State regulations. The overall result of the audit was favorable as none of our program areas received an unsatisfactory rating. However, as with any regulatory inspection of a comprehensive program, the inspector found a few documentation items that need to be addressed. During 2012, the City addressed the concerns by revising Erosion Control Standards and working with IDEM to implement the required changes to resolve most of the issues. In 2013, the MS4 program enlisted



legal counsel to assist in satisfactorily addressing two remaining concerns. A formal response was prepared and submitted to IDEM in December 2013, and we are awaiting IDEM's response.

IDEM conducted its final audit of the City's second NPDES permit term in September 2013. The audit focused on the detection and elimination of illicit discharges to our storm sewer system. To comply with the requirements of our NPDES permit, and to prepare for the audit, the MS4 program concentrated on the illicit discharge detection and elimination (IDDE) requirements of our permit. In anticipation of the audit, which was originally scheduled for 2012, the City enlisted Lawson Fisher Associates to GPS locate the City's storm water outfalls, create an adaptive GIS layer, and sample at several dry weather outfalls to characterize the nature of discharge. The MS4 program continued to refine and update the GIS layer with the most recently available data. All storm water outfalls, storm water conveyances, and open ditches were GPS located and added to the GIS. The GIS was further enhanced to include the locations of industries that may have a high potential for impacts to storm water. The GIS layer will serve as a tool to help the City target areas for enhanced monitoring of illicit discharges, and will also be a useful screening tool if an illicit discharge is detected. The City also developed a formal

IDDE plan that was revised and updated throughout 2013. To date, no illicit discharges have been detected in the City.

The City continued its participation in 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. In June of 2013, the MSP held an educational seminar highlighting a newly completed green infrastructure project utilizing wetlands for storm water treatment and management in the LaSalle Area of South Bend. Additionally, the City continued its partnership with St. Joseph County for Storm Water Pollution Prevention Plan (SWPPP) reviews.

2013 marked the final year of the City's second 5-year NPDES permit term. An application for renewal of the current permit was submitted to IDEM in November of 2013. IDEM has indicated that their MS4 permit program may undergo restructuring that may bring changes to local MS4 programs, including the potential for revised permit requirements during the next five-year permit term. Program efforts throughout 2014 will focus on resolving IDEM audit concerns and making any necessary adjustments to the City's MS4 program that result from program changes made at IDEM.

Review of Industrial, Commercial and Residential Developments

2013 experienced an increase in private property proposed developments in addition to a specific sector in commercial development, i.e. senior assisted living facilities. Only one developer submitted sanitary sewer main modifications of previously approved improvements for 2013; Stonebridge Villas applied for a third revision to its configuration. The City experienced a more balanced combination than in recent years between rehabilitation of existing sites and new construction. A few examples of new commercial development projects approved in 2013 are North Woods Village Alzheimer's Memory Care (1409 E. Day Road), Longterm Care (5805 Fir Road), Tanglewood Senior Living Addition (530 Tanglewood Drive), Centier Bank (255 E. Day Road), Hampton Inn & Suites (7347 Heritage Square Drive), Evil Czech Bar & Restaurant (3703 N. Main Street), McDonalds (3520 Bremen Highway), Well Pet Addition (1101 W. 11th Street), and Fed Ex Addition (5521 N. Home Street).

Fats, Oils, and Grease (FOG)

The Common Council approved revisions to the Sewer Use Ordinance to cover fats, oils, and grease (FOG) in the summer of 2010. These changes established maintenance requirements and provide a regulatory framework for recovering costs incurred by the City to deal with problem facilities. The program is evaluated at the end of each calendar year so that any necessary modifications can be implemented the following year. In a continued effort to educate restaurant operators about the City's expectations, the Wastewater, Sewer, and Engineering staff updated an educational pamphlet for distribution at the 2013 January restaurant license renewal. Additionally, permit applications and letters detailing program requirements were updated and provided to the Controller's office for distribution throughout 2013.

Excavation and Sanitary Sewer Connections

Sanitary Sewer connection fees are designed to assess a fee on the developer's site based on the size of the property and the impact the proposed development will have on the capacity of the sanitary sewer collection system and the Wastewater Treatment Plant. The money collected is used for oversizing and extending sanitary sewers, as well as making improvements at the Wastewater Treatment Plant.

In 2013 Engineering issued 453 Excavation Permits with fees totaling \$14,630.00 for all categories of excavation, such as telephone, cable, gas, electric, boring, street, sewer, water, and irrigation. This is an increase from 2012 when \$11,930.00 was collected from 702 Excavation Permits. Notice the large difference in number of permits issued and value increase for 2013 which exemplifies the type of permit requests being for more advanced projects and in this case weighted by non-municipal utility requests. In addition, there were 102 Sanitary Sewer Connection and Inspection Permits obtained in 2013 that totaled \$ 76,985.33 verses \$137,180.59 collected from 109 permits in 2012.

Sewer Insurance Program

The Engineering Department maintains all sanitary and storm sewer records and provides administrative assistance to the Sewer Lateral Insurance Program. This program, which began in 1986, 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 the \$250 deductible fee for the sewer lateral repair. The Sewer Insurance Fund pays all costs in excess of the \$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. The costs of removal and replacement of public streets, curbs, and sidewalks as a result of the repair are included. The monthly fee for residential sewer insurance was increased to \$1.50 per month in 2008.

The fund is also used to replace existing sewer laterals that are located within sewer main replacement projects to minimize the need to repair a sewer lateral in a newly reconstructed street. Money collected in 2013 totaled \$233,536 with expenses of \$276,142. In 2013, the Sewer Department received 254 complaints of sewer problems where 67 residents signed up for the Sewer Insurance Program. Of the 67 residents, there were 45 residential contractor repairs performed with an ending balance in the fund of \$185,811.

A summary of the 2013 Sewer Insurance Program follows:

Summary of 2013 Sewer Insurance Program					
Date Initiated	Job Number	Address	Action Taken	Total Cost	Work Completed
1/2/13	1221	1625 Homewood Ave	Line opened, guarantee provided	\$962	1/3/13
1/4/13	1222	815 Liberty Dr	Contractor repaired	\$4,197	1/10/13
1/10/13	1223	2213 E Fourth St	Contractor repaired	\$4,778	1/11/13
1/17/13	1225	222 Stanley St	Contractor repaired	\$2,560	1/24/13
1/30/13	1226	807 E Fourth St	Line opened, guarantee provided	\$235	1/31/13
2/1/13	1227	916 Lincolnway East	Line opened, guarantee provided	\$250	2/1/13
2/26/13	1228	721 E Fourth St	Contractor lined lateral	\$3,475	5/3/13
2/27/13	1229	127 W LaSalle Ave	Contractor repaired	\$2,018	3/6/13
3/1/13	1230	312 W Seventh St	Contractor lined lateral	\$3,148	4/5/13
3/8/13	1231	2732 N Main St	Contractor repaired	\$2,062	3/12/13
3/11/13	1232	542 W Eighth St	Line opened, guarantee provided	\$540	3/11/13
3/25/13	1233	2423 Division St	Line opened, no guarantee provided	\$426	3/26/13
4/1/13	1234	428 W Broadway	Contractor repaired	\$1,903	4/4/13
4/5/13	1235	502 Indiana Ave	Line opened, guarantee provided	\$250	4/8/13
4/8/13	1236	707 W Twelfth St	Contractor repaired	\$1,510	4/19/13
4/9/13	1237	236 E Donaldson Ave	Contractor lined lateral	\$8,413	5/3/13
4/23/13	1238	214 S Brook Ave	Contractor repaired	\$4,161	4/23/13
4/25/13	1239	642 Gernhart Ave	Contractor lined lateral	\$4,695	6/7/13
4/30/13	1240	1322 E Jefferson Blvd	Line opened, guarantee provided	\$540	5/2/13
5/1/13	1241	131 E Marion St	Line opened, guarantee provided	\$540	5/1/13
5/7/13	1242	120 E Edgar Ave	Line opened, guarantee provided	\$540	5/7/13
5/15/13	1243	802 E Fifth St	Contractor repaired	\$7,396	7/3/13
5/16/13	1244	620 E Battell St	Contractor repaired	\$4,286	6/11/13
5/17/13	1245	529 W Grove St	Contractor lined lateral	\$5,520	6/7/13
5/23/13	1246	2605 Milburn Blvd	Pending		5/23/13
5/29/13	1247	613 W Grove St	Contractor lined lateral	\$5865	7/5/13
6/7/13	1248	528 Dittman St	Line opened, guarantee provided	\$250	6/7/13
6/11/13	1249	609 N Oakland Ave	Contractor lined lateral	\$4,830	7/5/13
6/14/13	1250	418 W Jefferson Blvd	Contractor lined lateral	\$7,149	11/8/13
6/17/13	1251	1704 S Main St	Contractor repaired	\$1,780	6/21/13
6/21/13	1252	119 E Colfax Ave	Contractor repaired	\$7,417	7/11/13
6/21/13	1253	306 W LaSalle Ave	Contractor repaired	\$1,939	6/28/13
6/26/13	1254	225 W Eighth St	Line opened, no guarantee provided	\$1,474	6/28/13
7/3/13	1255	713 S Mill St	Contractor repaired	\$22,696	10/31/13
7/3/13	1256	903 Homewood Ave	Contractor repaired	\$2,927	8/1/13
7/8/13	1257	717 S Mill St	Contractor repaired	\$3,670	7/17/13
7/16/13	1258	1218 Union St	Contractor lined lateral	\$3,735	8/2/13
7/22/13	1259	223 E Donaldson Ave	Line opened, no guarantee provided	\$393	7/22/13
7/26/13	1260	1001 Carlton St	Contractor lined lateral	\$1,750	8/2/13
7/30/13	1262	119 E Ninth St	Contractor lined lateral	\$8,532	8/9/13
8/16/13	1263	228 E Grove St	Contractor lined lateral	\$9,075	9/27/13
8/20/13	1264	309 N Cedar St	Contractor repaired	\$5,867	8/23/13
8/27/13	1265	112 E Twelfth St	Contractor repaired	\$4,281	9/6/13
9/11/13	1266	1918 N Merrifield Ave	Contractor repaired	\$5,514	10/11/13
9/13/13	1267	1010 E Broadway	Line opened, no guarantee provided	\$612	10/4/13
9/18/13	1268	220 E Sixteenth St	Contractor repaired	\$2,370	10/4/13
9/19/13	1269	426 W Battell St	Contractor lined lateral	\$7,295	10/25/13
9/23/13	1270	909 W Donaldson Ave	Contractor lined lateral	\$6,350	10/25/13
9/25/13	1271	139 Leyte Ave	Contractor lined lateral	\$4,220	10/11/13
9/27/13	1272	622 Wilson Blvd	Contractor lined lateral	\$5,350	10/11/13
10/15/13	1274	902 E Marion St	Contractor repaired	\$17,223	10/31/13
10/30/13	1275	1908 Maplehurst Ave	Contractor lined lateral	\$9,060	11/8/13
11/7/13	1276	938 E Fourth St	Contractor repaired	\$6,336	12/9/13
11/12/13	1277	1825 Linden Ave	Pending		11/12/13
11/12/13	1278	608 S Middleboro Ave	Pending		11/12/13
11/13/13	1279	212 E Seventh St	Pending	\$245	11/13/13
11/13/13	1280	213 W LaSalle Ave	Contractor lined lateral	\$5,200	11/22/13
11/15/13	1281	1008 E Fourth St	Contractor lined lateral	\$6,880	11/29/13

11/21/13	1282	116 Orange Ave	Contractor lined lateral	\$2,450	12/6/13
11/22/13	1283	219 Hendricks St	Line opened, guarantee provided	\$367	11/22/13
11/26/13	1284	1033 Geyer Ave	Pending	\$246	12/26/13
12/3/13	1285	217 S Columbia St	Contractor lined lateral	\$4,160	12/20/13
12/4/13	1286	302 N State St	Contractor lined lateral	\$5,501	12/20/13
12/20/13	1287	1111 Division St	Line opened, no guarantee provided	\$942	12/20/13
12/23/13	1288	1406 Calhoun St	Contractor repaired	\$2,210	12/24/13
12/27/13	1289	215 Ray St	Line opened, guarantee provided	\$315	12/27/13
12/31/13	1290	902 Mishawaka Ave	Pending		12/31/13

Traffic Engineering Services

Traffic Engineering is responsible for operation and maintenance of all of the 60 City-owned traffic signals, 13 school warning devices, as well as two intersections with four-way red flashers and two with all-way yellow warning flashers. Traffic Engineering received several requests for additional or modified signage through the Mishawaka Police Department, concerned motorists, and citizens. All requests are investigated by Engineering. In 2013, these requests resulted in the issuance of 30 work orders for the installation or modification of signage and pavement markings.

Traffic Signal and Flasher Maintenance

In 2013, 142 traffic signal repairs were completed. Also maintained were luminaries, guardrails, and all 60 signal cabinets where, due to open air vents, dust and dirt can accumulate. Therefore, to protect cabinet electronics, an annual cleaning is completed, which includes replacement air filters, evaluating the bulbs and battery back-up system. 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 were adopted by the Federal Highway Administration (FHWA). These changes were established for the aging population to promote safety while providing sufficient flexibility for agencies to choose a compliance method that best fits their specific conditions. MACOG has provided a reflectometer and will soon be training on its use to identify signs that do not meet new guidelines.

Indiana Safe Routes to School Program (SRTS)

The purpose of these projects, funded from the Indiana Department of Transportation's (INDOT) SRTS Program, is to provide school aged children a healthy and safe route to walk or bike to school. 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 children will walk or bike to and from school. The City of Mishawaka is an all walk-on school system with minimal bus transportation for the students. Each school within Mishawaka has been examined to identify a safe route for that particular school. A different elementary school is targeted each year throughout the life of this program.

Specifically, sidewalk improvements are performed along the route most utilized by the students to access schools and include ADA-compliant curb ramps, replacement of deteriorated sidewalks, signage, pavement markings at crosswalks, and provide educational materials to the children in connection with the DARE officers of Mishawaka. In 2012 the project for Battell School was 95% complete. In 2013 new curb ramp and sidewalk were installed at the northwest corner of Battell Street and Cedar Street and new pavement markings (crosswalks and stop bars) were installed throughout the project limits. The contract was substantially completed in June 2013. The final contract amount was \$351,201.68, with \$250,000.00 being paid by the grant.



However, in 2013 INDOT modified its SRTS program where MACOG was able to provide TAP funds to continue the program in the modified form. The City applied for TAP funding for Beiger School and Twin Branch School for 2014 construction to continue these improvements totaling approximately \$900,000. The City will continue to apply for this program in the future and incorporate these improvements in conjunction with other City projects.

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 Federal guidelines as outlined in the Indiana Manual on Uniform Traffic Control Devices for all schools in Mishawaka.

Traffic Studies and Activities

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.

The Engineering Department issued 27 dumpster permits in 2013. The Engineering Department also received requests for additional signage from the Street Department and the Mishawaka Police Department in various neighborhoods. There were four Speed Limit signs added, two on Catalpa Drive, one on Normandy Drive, and one on Sixth Street along with two No Trucks signs, one on Bennington Drive and one on Downey Street. There were also four requests for No Parking signs.

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 (Church/Union Street improvements) during the 2013 construction year, excessive truck traffic occurred on non-truck route streets. Police enforcement assisted in curbing these truck problems in residential areas.

Michiana Area Council of Governments (MACOG) partners with the City to gather traffic count data for various Mishawaka locations. This data assists in documenting changes in traffic volumes and may possibly be used to justify changes in infrastructure.

During the 2013 construction season, the Engineering Department worked with the Main Street Phase VI Contractors during the installation of Centracs, the new traffic control/monitoring system. This system provides controls to better manage traffic flow on the Main Street/Church Street corridor. This system continues to be added to other corridors as we upgrade those intersections. Once completed, Centracs will have the ability to make slight timing alterations to signals based on traffic flow and volume. The goal of Centracs is to allow traffic to flow more consistently while minimizing stopping on major traffic corridors.

Disabled Parking Approvals

With the assistance of the Mishawaka Police Traffic Division, the Engineering Department coordinates the application process for designated disabled parking spaces on public streets. In 2013 the Board of Public Works and Safety approved the designation of seven new disabled parking spaces and the removal of four spaces that were no longer required.

Construction Projects

Engineering is responsible for plan development and construction management of Public Works Projects. These construction projects are funded from several sources. In 2013 projects under construction were funded with Long Term Control Funds, Tax Incremental Funds, Cumulative Sewer, Redevelopment CDBG Funds, Local Road and Street Funds, Sewer Maintenance Funds, and INDOT/FHWA including SRTS Grant/TAP funding, HSIP, and LPA Funds. Construction completion in 2013 totaled approximately \$22.7 million. Specific details of the 2013 construction projects are highlighted in the following sections. In addition, projects that were in the design and land/easement acquisition phase during 2013 are also discussed with the intent to construct in 2014.

Northwest TIF Projects

Main Street, Phase VI – Ardennes Avenue to Day Road

Construction resumed on this project in the spring of 2013. The major work on this project was primarily constructed in 2012 and included full removal and reconstruction of the street to add a center turn lane, new storm sewer, concrete curb & gutter, 12” concrete pavement, sidewalk, two new traffic signals, and a new north-side traffic control/monitoring system (Centracs). The

remaining work included completing intersection improvements at Main Street and Edison Road, asphalt resurfacing of Main Street between Edison Road and the Juday Creek Bridge north of Day Road and Edison Road between Main Street and Grape Road, and structural lining of the sanitary manholes. Project close out items were also completed during 2013, and the total investment was \$5,910,986.

Main Street White-topping from Indian Ridge Boulevard to University Drive

The City of Mishawaka received a 2013 Outstanding Concrete Achievement award for this infrastructure project from Indiana Ready Mixed Concrete Association. This project consisted of 7 inches of concrete pavement over the existing asphalt base on Main Street between Indian Ridge Boulevard and University Drive. Due to the presence of curbs and the desire to keep the existing drainage in place, the existing asphalt roadway was milled 7 inches and then replaced with 7 inches of new concrete pavement. The project also included replacing over 20 existing drywells and rehabilitating approximately 700 feet of storm and sanitary sewer piping, inlets, and structures in the project area. Constructed by Selge Construction, the total City investment for this project was \$1,188,641. The whitetopping will extend the longevity of this section of Main Street for 15 to 20 years and will eliminate the need for multiple asphalt overlays during this time period, thereby saving the City significant future infrastructure costs.



First Street Area Improvements

This project was the second phase of a multi-phase project and was substantially complete in late fall of 2012. Much of this work was in coordination with the construction of the Main Junior Apartments to provide sidewalk, ADA compliant ramps, drainage, and lighting. The primary project scope consisted of the reconstruction of First Street from West Street to Main Street, West Street from Lincolnway West to First Street, Hill Street from Lincolnway West to First Street, and Spring Street from First Street to the Front Street round-a-bout. Work elements included hot mix asphalt roadway, concrete curb and sidewalk, storm and sanitary sewer, water mains, and street lighting. Project closeout items were completed during 2013. This City's total investment for the project was \$1,604,140.



Battell Street Storm Sewer and CSO 016 Erosion Repair

Construction operations began in September 2012 and were complete in July 2013 due to



extensive sheet piling and river level delays. Construction operations in 2013 included installation of storm sewer, sanitary sewer, reconstruction of CSO 16 and storm sewer outfall due to extensive river bank erosion. The project also included reconstruction of Merrifield Avenue and Battell Street with full depth bituminous pavement and concrete curbing, sidewalks, and driveway approaches. Construction and project final closeout paperwork are 100% complete with the final City investment totaling \$889,615.

West Street Area Sewer Master Plan and Storm Sewer Improvements

The West Street Area Sewer Master Plan includes an evaluation of the existing storm, sanitary, and combined sewer systems within a 365 acre area bounded by Spring Street, Lincolnway West, Logan Street, and Dragoon Trail. The Master Plan includes recommendations on rehabilitation of the existing sewers and construction of separate storm sewer system to address basement flooding and surface flooding experienced in certain areas. The phases for the West Street Area are shown in the chart below and Exhibit A.

Division Name	Project Description	Schedule/Status
Phase IA: <i>First Street to Lincolnway West</i>	54" storm sewer constructed as part of the First Street Area Improvements project.	Completed 2012
Phase IB: <i>Front Street to First Street</i>	54" (equivalent) trunk storm sewer connecting to existing 90" outfall.	Completed 2013
Phase II : <i>Lincolnway to Sixth Street</i>	The extension of the 54" and 42" storm sewer from Phase IA including a bore and jack under the railroad. Reconstruction of West Street including pavement, curb, and sidewalk.	Construction started 2013, to be complete 2014.
<i>Additional Phases</i>	From Sixth Street to Rose Park 15 th and 16 th Streets around Rose Park 8 th Street from West Street to Logan	TBD

Construction of Phase IB commenced in the spring of 2013 and involved the installation of storm sewer pipe, concrete manhole structures, and asphalt/concrete pavement reconstruction on West Street and Front Street. Also included in this project was sanitary sewer replacement and water main installation. The project construction operations were completed in July 2013, and the final City investment totaled \$507,775.



Southern Railway, and pavement reconstruction on West Street between Lincolnway West and Sixth Street. Work completion is scheduled for the summer of 2014, with the current contract price of \$2,136,306 at 42% complete.

Hospice Site Infrastructure

This project was comprised of constructing Comfort Place, reconstructing Madison Street and Pine Street to accommodate the new Center for Hospice facility in the Central Park area. It also included new sidewalks, installing and rehabilitating the sanitary sewer system through CIPP, and extension of the Central Park Riverwalk pedestrian system. All walkways were brought into compliance with current ADA standards, reconstructing and developing parking areas for Central Park, installation of water main, and relocating the existing overhead utility lines underground and placing conduits for future utilities. Beautification of the area was an important element to make the surroundings inviting for all Mishawaka residents. This project began in 2012 and was completed in 2013. The total project investment was \$1,646,460.



Edgewater Northside Interceptor CIPP Sewer Rehabilitation

Prior to construction of the new Hospice Center, the condition of the large diameter 36" north-side interceptor sewer was noted to be deteriorating and significant groundwater infiltration was observed. The interceptor carries combined sewer flow from a large area south and east of the St. Joseph River, and failure could be catastrophic.

Further investigation revealed that both the 18" contributing to the large diameter 36" interceptor and the interceptor warranted rehabilitation. Structural cured-in-place pipe (CIPP) lining was the

chosen method to avoid open cutting in this confined Edgewater Drive corridor; it has deep pipe located below the water table and open-cut was determined to be cost prohibitive.

Structural CIPP would give the pipe an additional estimated 50 years life and reduces or eliminates the groundwater infiltration. Manhole rehabilitation and void remediation were also included in the project. Bypassing the flow was necessary to allow the work to be performed; however, the wet weather proved to be an extreme challenge for Inland Waters Pollution Control. With the completion of this project, the City's interceptor system from CSO 016 to CSO 009 has been rehabilitated protecting this essential part of the overall collection system. The project was completed in 2013 with a project investment of \$670,000.



Church/Union Street Improvements

The Church Street Improvements project is a continuation of the projects in the Main/Church/Union Corridor. Highlights of this project include the addition of left turn lanes, repair of the underpass underdrains, and the construction of a shelf at the back of the curb to facilitate snow removal under the railroad overpass. In June 2013 the contractor began relocating existing sanitary and storm sewers on Fourth Street between Main Street and Race Street to accommodate a small section of the proposed LTCP storage-conveyance tunnel.



Following completion of sewers, initial work began on the microtunneling operation for construction of the LTCP storage-conveyance tunnel. During installation of the dewatering wells at the microtunneling launching shaft, contaminated groundwater was discovered, which resulted in the suspension of the microtunneling operation. Work on the remainder of the project continued despite the suspended microtunneling operation.

Once construction on Race Street and Third Street was completed, the work on Church Street finally began in September. By early December, all new concrete pavement between Fourth Street and Lincolnway East was completed, including new turn lanes, driveways, sidewalks and curb ramps. However, due to the weather, only the northbound pavement along the underpass was finished prior to shutting down for the winter. The microtunneling operation is tentatively scheduled to resume in March 2014, while the remainder of the southbound pavement, including the final pavement markings, will start in April 2014. The project is estimated to be substantially complete by the end of June 2014 with an estimated total City investment \$7.7 million.

Union Street Traffic Signal Modernization

The Union Street Traffic Signal Modernization project, utilized Congestion Mitigation & Air Quality (CMAQ) funding to upgrade traffic signals and install ADA compliant sidewalk and ramps at seven intersections on Church and Union Street between Lincolnway East (SR 933) and Dragoon Trail. In addition, the west bound approach of Twelfth Street between Union Street and Dodge Street was reconfigured with improved radius, new concrete curb and gutter, pavement and ADA compliant sidewalk and ramps. To further improve the traffic flow through the intersection of Union Street and Twelfth Street, the west bound approach of Thirteenth Street at Union was converted to a cul-de-sac. This project was completed at the end of 2013 with 100% of the construction funding for this project provided by the Federal Highway Administration for a final investment \$1,636,638.

Fir-Capital Connector and Fir Road Widening Projects



The Fir-Capital Connector was designed as a new gateway into the City from Capital Avenue at the Toll Road Plaza. In 2013, the contractor completed clearing the full right of way, excavation of the two drainage basins, installation of the new 12” water main, 12” sanitary sewer, and storm sewer with structures. The auxiliary 2” and 4” conduits, along with the 2” conduit and structures for Metronet, are nearly 90% complete. The project activities were suspended for winter, but not before completing approximately 70% of the new roadway sub base, and 50% of the new concrete roadway, curb eastbound and westbound before the winter weather set in. In spring 2014, crews will resume work on this project with its anticipated completion in July 2014 with a total City investment of approximately \$3,500,000.

The Fir Road Widening project was awarded in April 2013. NIPSCO and AT&T utility relocations were not complete until November 2013, which delayed other components of this project. The contractor was able to install new storm sewer, extend the existing sanitary sewer and water main, and relocate a fire hydrant along the east side of Fir Road. Clearing and grading along the east side of Fir Road was started for the widening. This project is expected to be completed in June 2014 and cost approximately \$1,000,000.

The Fir Road Widening project was awarded in April 2013. NIPSCO and AT&T utility relocations were not complete until November 2013, which delayed other components of this project. The contractor was able to install new storm sewer, extend the existing sanitary sewer and water main, and relocate a fire hydrant along the east side of Fir Road. Clearing and grading along the east side of Fir Road was started for the widening. This project is expected to be completed in June 2014 and cost approximately \$1,000,000.

Traffic Signal Progression Study for Grape Road, Main Street, and Douglas Road

With the 2013 implementation of the north side traffic control/monitoring system upgrades completed within the Main Street Phase VI project, it provided an opportunity to update the traffic progression plan for the Grape Road, Main Street, and Douglas Road corridors. As a result, a progression study was completed for Grape Road from SR 23 to McKinley Avenue, Main Street from SR 23 to McKinley Avenue, and Douglas Road from the western City limits to the eastern City limits. Traffic counts, including turning movements at each intersection, were

obtained and modeled with the goal of providing new signal timings that would result in more efficient traffic progression through the corridors. In November 2013, the new Grape Road corridor signal timings were uploaded into the control system with an improved result for the north-south progression in the corridor. Additional data was also collected for the holiday season with anticipation of additional small corrections. The modeling for the Main Street and Douglas Road corridors was delayed with implementation estimated for completion in 2014.



2012/2013 Design Projects

University Drive Service Area Update

The University Drive Lift Station Upgrade and Forcemain Re-route design was completed in 2012. However, with the addition of the Memorial/Beacon parcel development on University Drive in 2013, the forcemain route needed to be reconfigured to accommodate a proposed commercial development. Specifically, this lift station's existing 6" forcemain currently terminates in the Juday Creek Lift Station service area and will be rerouted to Douglas Road, Holy Cross Lift Station Service Area, through a new 12" HDPE forcemain. The forcemain corridor is approximately 5,100 linear feet extending from University Drive under the Toll Road and parallel to the east City Limits terminating in Douglas Road's 18" gravity sewer main.

Easement acquisition is needed for one parcel at University Drive to complete the forcemain corridor. Construction bidding will commence in February of 2014 with bidding process to include a pre-qualification for drilling contractors. It is anticipated that construction will be completed in July of 2014 at an estimated cost of \$1.4 million. It will provide additional capacity in the Juday Creek Lift Station Service Area, which includes the Main and Grape Road sewer main corridors, and utilize the full design capacity of the University Drive Station. The service area for the University Drive Station incorporated the area bounded by Capital Avenue at the east City limit. The Golata, 1st Source, and Memorial/Beacon parcels were annexed into the City in 2008, 2011, and 2012 respectively. Development interest in these parcels is renewing with land owners dedicating right-of-way for street and utilities construction. Therefore, it is prudent to provide additional sanitary sewer capacity for the impending private development of the Fir Road Connector corridor.

University Drive and Fir Road Intersection

University Drive and Fir Road Intersection Upgrade design is at 95% complete with the land acquisition phase completed in 2013. The project includes additional turn lanes on Fir Road at the intersection with University Drive, signal upgrade, fiber optic and Metronet cabling, and new lane transition to the improved intersection at Cleveland and Fir Road completed by the County in 2011. Construction is anticipated in 2014 with an investment estimated at \$1.5 million.

Third Street from Cedar Street to Wenger Avenue: Design

The Project includes construction of a separate storm sewer, rehabilitated sanitary sewer, new concrete curb and sidewalk, and pavement with an estimated cost of \$2.7 million. This project is in anticipation of the future LTCP storage/conveyance tunnel proposed for the Fourth Street corridor. The surrounding streets and alleys will realize additional traffic pressure throughout the prolonged construction of the LTCP storage tunnel, and therefore these improvements are prioritized for 2014 construction.

Church/Union Street Improvements Phase 2 – Design

This project will continue the five lane street south of Seventh Street through the south approach of Ninth Street. The pavement section will include four through lanes and one center left turn that will transition to protected left turn lanes at intersections. The addition of the center left turn lane will allow vehicles traveling on Church/Union Street to make left turns at the Eighth Street and Seventh Street intersections. Right turn lanes will be added at the Union Street and Eighth Street intersection. The existing barrier wall will be removed and a new retaining wall will be constructed at the southeast corner of the intersection of Church Street and Fourth Street, which will allow the addition of an exclusive right turn lane for southbound traffic at the Church Street and Fourth Street intersection. The existing concrete pavement will be replaced along with curbs and sidewalks along both sides of the roadway. Lighting and landscaping will be incorporated into the design.

Traffic signals at the intersections of Seventh Street and Eighth Street will be modified to add a 5-section signal head for the left turn lanes and lighting will be added to the signal poles. Lighting will also be added to the signal poles at the Third Street and Fourth Street intersections. Retaining walls will be constructed behind the existing sidewalk along the west side of Church Street, north and south of the railroad bridge, and along the east side of Church Street, north of the bridge, to terrace the existing slopes. The existing retaining walls along the east and west side of Church Street south of the railroad bridge will be refaced with an architectural finish. The pattern for the retaining walls will match the new modular block retaining walls constructed to terrace the slopes. Landscape plantings will be placed between the sidewalks and the retaining walls to improve the aesthetics of the corridor. Exhibits B and C show the layout of this project. The project is scheduled for the 2014 construction season with an estimated cost of \$4.5 million.

South TIF Projects

Bremen Highway South Gateway and Fulmer Road Area Drainage Improvements



The City of Mishawaka began work on the south gateway into the City in the summer of 2013. The south side gateway improvements required two projects, the Bremen Highway project and Fulmer Road Area Drainage Improvements.

The Bremen Highway Project removed two lanes of asphalt pavement as well as an old concrete road underneath from the north side of the US 20 Bypass bridge abutment to Fulmer Road. The project constructed a new four lane concrete street including concrete curb and gutter, storm sewer, pavement underdrains, and additional right and left turn lanes. In addition, new landscaped channelization islands have been constructed to separate northbound and southbound traffic and provide a roadway consistent with downtown and Main Street.

Additional travel lanes and new turn lanes provide access to the existing Autumn Lakes apartment complex, the Meijer store and gas station, Bruno's pizza, and a hair salon as well as the new McDonald's restaurant that is planned to be constructed in the spring of 2014 at the southeast corner of Fulmer Road and Bremen Highway. The new turn lane added on Fulmer Road for westbound traffic at the Bremen Highway intersection allows for right hand turns and results in reduced wait times at the signal. New double left turn lanes have been provided for southbound traffic onto Meijer Drive for Meijer shoppers and Autumn Lakes residents. The project also includes new LED lighting at the intersections and new street lighting along the corridor.

Traffic signals were upgraded at both the Meijer Drive and Fulmer Road/Ireland Road intersections. As part of this project, fiber optic cable was installed from the Dragoon intersection in order to connect both intersection signals with the rest of the City's signal system. The project layout is shown in Exhibit D. The project was intended to be complete by end of 2013; however, difficulties with relocating various utilities slowed the progress and will require the contractor to finalize the work in the spring of 2014. The total investment is estimated to be \$2,500,000 at project completion.



The Fulmer Road Area Drainage project was initiated in early 2013 and prior to the start of Bremen Highway to complete significant drainage improvements for the area. Improvements include drainage capacity for the Bremen Highway improvements, Autumn Ridge neighborhood, future Meijer and Autumn Lakes outlot development, and the two hundred plus acres west of Bremen Highway that drains into the Euztler Legal Drain. The drainage enhancements focused on enlarging the Meijer basin with improvements to the outflow structure to control release rates and provide flood routing. Also, new underdrains were added to both Bremen Highway and Meijer Drive to replace collapsed pipes, eliminating the “weeping pavement”, and providing a more efficient outlet. The project was completed in 2013 with a total investment of \$785,375.



Public Works Projects

Fairmount Area Rehabilitation

This project was unique in that it combined resources of both the Sewer Maintenance Department and the Redevelopment Department. The Sewer Maintenance Department funds were used to rehabilitate the trunk sewer main by use of CIPP, sanitary laterals were replaced, and manhole structures were lined. Redevelopment Department funds were used to rehabilitate surface features, such as pavement, curb, and sidewalks, bringing the area into compliance with current ADA standards. Fourteen sections of pipe identified as critical by Sewer Department inspections in eight areas received main line CIPP and manhole rehabilitation. Failing laterals were replaced utilizing open cut construction practices followed by surface restoration on Fairmount Avenue from Forest Avenue to Webster Street. All work was completed in 2013 with the total City investment of \$640,506.

Summer Street Paving Program

The Engineering Department assisted in prioritizing and overseeing 41,115 linear feet of street milling and resurfacing. The summary of the Summer Street material bid prices are detailed in the table below:

2013 Summer Street Unit Prices				
Materials:			Walsh & Kelly, Inc	
Description	Qty	Unit	Unit Price	Extension
BITUMINOUS:				
Hot Mix Asphalt Pavement, Surface 9.5MM Type "A"	4,000	TON	\$52.50	\$210,000.00
Hot Mix Asphalt Pavement, Surface 9.5MM PG, Type "B"	4,000	TON	\$52.50	\$210,000.00
Hot Mix Asphalt Pavement, Surface 9.5MM - PG, Type "C" Polymer Additive	1500	TON	\$57.00	\$85,500.00
Hot Mix Asphalt Pavement, Surface 905MM, Type "A" Limestone FOB	200	TON	\$48.00	\$9,600.00
HMA Surface - Alley Paving (2")	400	TON	\$70.00	\$28,000.00
HMA Surface - Alley Paving (2") Resurfacing	400	TON	\$70.00	\$28,000.00
HMA Surface Patching -Type "A" Local Street	500	TON	\$73.00	\$36,500.00
HMA Surface Patching -Type "B" High Volume	1000	TON	\$75.00	\$75,000.00
HMA Pavement, Surface - Type "A" B.F. Slag	250	TON	\$65.00	\$16,250.00
HMA Pavement, Type "A" Intermediate 19MM	100	TON	\$48.00	\$4,800.00
HMA Pavement, Intermediate 19MM FOB	100	TON	\$44.00	\$4,400.00
HMA Pavement, Type "A" Base 25MM	200	TON	\$46.00	\$9,200.00
HMA Pavement, Base 25MM FOB	100	TON	\$42.00	\$4,200.00
Bituminous Material Tack	20	TON	\$1.00	\$20.00
Bituminous Material Crack Pouring FOB	2,000	GAL	No Bid	
Bituminous Material Dust Pallative FOB	2,000	GAL	No Bid	
Bituminous Patch Material FOB	500	TON	\$90.00	\$45,000.00
Emulsified Asphalt FOB	20,000	GAL		
AGGREGATE:				
Course Aggregate #73 stone or slag	150	TON	No Bid	
Course Aggregate #73 stone or slag FOB	150	TON	No Bid	
Course Aggregate #73 or #53 Gravel	150	TON	No Bid	
Course Aggregate #73 or #53 Gravel FOB	150	TON	No Bid	
Course Aggregate #11 or #12 LS or Slag Chips	150	TON	No Bid	
Course Aggregate #11 or #12 LS or Slag FOB	150	TON	No Bid	
Fine Aggregate #23 or #24	150	TON	No Bid	
Fine Aggregate #23 or #24 FOB	150	TON	No Bid	
ROTO-MILLING:				
Contractor Retain Materials 0"-2"	85,000	SYD	\$1.25	\$106,250.00
Contractor Retain Materials 2"-4"	500	SYD	\$2.25	\$1,125.00
Contractor Retain Materials 4"-6"	500	SYD	\$2.75	\$1,375.00
City Retain Materials 0"-2"	15,000	SYD	\$1.25	\$18,750.00
City Retain Materials 2"-4"	500	SYD	\$2.25	\$1,125.00
City Retain Materials 4"-6"	500	SYD	\$2.75	\$1,375.00
MISCELLANEOUS ITEMS:				
Street Excavation	300	TON	\$15.00	\$4,500.00
Bituminous Curbs	500	LF	\$10.00	\$5,000.00
TOTAL AMOUNT OF BID:				\$905,970.00

2013 Street Resurfacing Summary

The following table summarizes the streets that were resurfaced in 2013. All streets were either edge-milled six feet along the curb line or the entire surface removed 1” to 1.5” to retain as much curb exposure as possible.

Street Name / Section	Length (Feet)
Barrows Court - Vistula to Lincolnway East	1000
Behney Avenue – Pleasant Point Court to Cottage Avenue	1300
Bittersweet Road – Vistula South 1000 feet	1000
Borley Avenue – Logan to Calhoun	350
Borley Avenue – Webster Street to Clay Street	400
Brook Avenue – Homewood Avenue to Lincolnway East	300
Brook Avenue – Marshall Drive to Ninth Street	900
Byrkit Avenue – Jefferson Blvd to McKinley Avenue	2600
Byrkit Avenue – Mishawaka Avenue to Prospect Drive	500
Colonial Drive – Bennington Drive to Marrett Drive	800
Cottage Avenue – Harding Avenue to Dead End	1800
Day Road Windingbrook Drive to 200 feet east of Savannah Pass	3300
Delorenzi Avenue Third Street to Railroad tracks	640
Dittman Street – Pleasant Point Court to Cottage Avenue	1700
Doyle Court - Margaret Avenue to Dead End	100
Eleventh Street – Penn Avenue to Merrifield Avenue	825
Fern Hill Drive – Bennington Drive to Shelton Drive	1000
Flora Street – Dittman Street to Dead End	300
Grape Road – State Road 23 to 700 feet south of State Road 23	700
Greenlawn Avenue – Capital Avenue to Deadend	700
Homewood Avenue – Roosevelt Avenue to Brook Avenue	650
Homewood Avenue – Virgil Street to Miami Club Drive	950
Jefferson Blvd – Merrifield Avenue to Byrkit Avenue	2600
Kensington Place – Cantondale Lane to Hampton Road	1200
Liberty Drive – Battell Street to Broadway	400
Linden Avenue – Beiger Street to Home Street	750
Main Street – Douglas road to Indian Ridge Blvd	850
Margaret Avenue – Merrifield Avenue to Merrifield Avenue	1700
Marrett Drive – Colonial Drive to Bennington Drive	700
Marshall Avenue – Stickler Avenue to Downey Avenue	900
Medford Lane – Cantondale Lane to Hampton Road	1700
Merrifield Avenue – Fifth Street to Sixth Street	400
Michigan Avenue – Tenth Street to Twelfth Street	800
Mishawaka Avenue – Calhoun Street to Charlotte Street	700
Misty Harbor Court – Breezewood Drive to Dead End	700
Politt Court – Margaret Avenue to Dead End	100
Prospect Avenue – State Street to Wenger Avenue	1200
Shelton Drive – Bennington Drive to Fern hill Drive	800
Sixth Street – Logan Street to Smith Street	1400
South Street – Seventh Street to Eighth Street	400
Vistula Road – Bittersweet Road to Cedar Road	2400
Windy Cove Court – Breezewood Drive to Dead End	700
Total Linear Feet	42,215
Total Cost of Resurfacing	\$677,966.48
Total Cost of Milling	\$180,810.68
Grand Total for Summer Street Paving Program	\$858,777.16

Alley Paving Program

The Alley Paving Program pays half of costs of paving alleys with residents who request their alley be paved. Typically, a field inspection of the 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 and is provided to a designee of the property owners who is responsible for collecting the 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. There are 256,178 linear feet, 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. In 2013 no alleys were paved as all funding was directed to street paving; however, there is interest shown for 2014.

Curb and Sidewalk Program

Instituted in 1986, this program encourages single-family homeowners to repair or replace deteriorated public curb and sidewalks adjacent to their property and provides for a 50/50 split of the repair cost of curbs, sidewalks, and drive approaches between the homeowner and the City. Since the beginning of this program, the cost for reconstruction of approximately 91,953 linear feet of new curb and sidewalk has been shared by the City and its residents. Additionally, several areas of sidewalk and curb were replaced due to drainage issues or damages. This year a total of \$191,612.14 was spent in neighborhoods on curb and sidewalk improvements.

Sidewalks/ADA Transition Plan

In 2011, the City of Mishawaka completed the self-evaluation of all City facilities outside of the public right of way, programs, and procedures and prepared a Transition Plan that outlines the necessary steps to be fully compliant with the requirements of Title II of the Americans with Disabilities Act (ADA). The City's goal is to include annual budgetary allotments to make required improvements that will eventually make the various City facilities fully accessible, with emphasis given to the improvements that most impact the ability of persons with disabilities to access facilities or programs. In addition to City facilities, the self-evaluation reviewed existing City policies and procedures within each department. Following this review, recommendations were made to improve accessibility of programs for each department.

It is the intent of the City to make facilities for all services, programs and activities fully accessible within 30 years, though this will be largely dependent on a number of economic factors and future changes to the ADA Accessibility Guidelines (ADAAG) or other unforeseen requirements that would necessitate additional improvements to City facilities. The results of the self-evaluation identified a number of barriers at City facilities. The estimated cost to correct these deficiencies is \$3,536,000 plus public right of way. The degree to which these barriers limited accessibility and their priority for corrective action was subjectively categorized as "high", "medium", or "low". The actual implementation schedule, budgeting, and prioritization is up to the administration and is likely to be impacted by complaints, new regulations and

requirements, and availability of funding. The City Common Council adopted the plan April 2, 2012.

Throughout 2012, the City utilized a consultant to complete the self evaluation of the public right-of-way portion, including approximately 240 miles of sidewalk, 1300 intersections, and 2880 curb ramps. The evaluation ranked the condition and design of the existing pedestrian access routes. The 2012 Transition Plan for City infrastructure within the public right-of-way was made available for public comment in January 2013. The actual implementation schedule, budgeting, and prioritization is up to the administration and is likely to be impacted by complaints, new regulations and requirements, and availability of funding. The City Common Council adopted the plan June 3, 2013.

Long-Term Control Plan Projects

The City's Long-Term Control Plan (LTCP) continues to evolve with the target to improve wastewater treatment and the sewer collection system to reduce the Combined Sewer Overflows (CSO) 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 expanding the capacity, and now attention is directed to the collection system, which currently diverts 50 million gallons of combined sewer overflow to the St. Joseph River annually during wet weather.



In 2010 construction concentrated on the Milburn Area Sections A, B, C, D, E, and F of the collection system. Work in 2011 concentrated on the Milburn Area cured-in-place pipe (CIPP) lining rehabilitation and design of Milburn Area Sections G and J – Phase I. In both 2011 and 2012 work concentrated on finalizing the Storage Tunnel sizing master plan in relation to constructability. In 2012 work concentrated on constructing Millburn Area Sections G and J – Phase I, designing Milburn Area Section J – Phase II, and designing Wilson Boulevard Area

with redirection of four CSOs to River Crossing 3. Work in 2013 concentrated on constructing Wilson Boulevard Area and Milburn Area CIPP Lateral Lining.

Milburn Boulevard Area Sewer Improvement Projects

The first element identified by the LTCP was the Milburn Boulevard Area, which is bounded by Ironwood Drive, Dagoon Trail/Panama Street, Logan Street, and the St. Joseph River. This area is 348 acres including approximately 1,300 residents. The study resulted in eight sections, A-H, and eleven projects, including main-line cured-in-place pipe (CIPP) lining to rehabilitate the remaining sanitary sewer system. The emphasis of the work in the Milburn Area was to provide a new storm sewer system to separate the storm flow from the sanitary flow. A new underdrain system was installed to provide an outlet for the ground water, which historically flowed into the deteriorated sewer system, providing protection from possible foundation issues. The streets and sidewalks were reconstructed providing compliance with current ADA standards.

Discoveries and investigations during the initial projects resulted in the need for additional projects to address deficiencies remaining in the main line sanitary sewer system and contributing laterals in addition to final separation of the storm inlets from the sanitary system. These additions included Sections J, K, L, M, N, P and R, and CIPP Lateral Lining for Lincolnway West and Phases I and II. Sections J, K, and M include the final storm inlet separation. Lateral replacements and surface restoration are included in all the remaining Sections.



64-Year Old Middleboro Lift Station

The completion of the originally defined projects has significantly reduced the wet weather flow to the Waste Water Treatment Plant from the Milburn Boulevard Area and virtually eliminated combined sewer overflow at the Middleboro Lift Station. Rehabilitation of the Middleboro Lift Station is also part of the overall plan. GPS data collection was added to assist the City in developing accurate maps of these underground facilities. The Water Department has also utilized this opportunity to replace lead water services with copper. Beautification of the Milburn Boulevard islands with trees and improved street lighting was added to the projects to showcase the area. The total investment to date in the Milburn Area is approximately \$25 million. Future investment is projected to be \$10 million. Exhibit E illustrates the extensiveness of this project area.

Milburn Boulevard Area Improvement Projects

Division or Project Name	Project Description	Schedule/Status
Divisions A - H Sixth, Milburn, Delaware, Panama, Meridian, Reddick, Carlton, Dale, River, Strathmoor, Monmoor; and portions of Burdette, Alabama, Somerset, Berlin, Russell, Geyer, Hubbard, and Middleboro	72" and 24" borings under railroad 60" storm outfall at St. Joseph River 41,000 linear feet new 12"-60" storm sewers and associated structures 13,000 linear feet new 12"-24" underdrain system and associated structures new pavement new curb new ADA compliant sidewalk main line CIPP for Sections C and G	Completed between 2007 and 2013
CIPP Main Line Lining Phases I and II	53,000 linear feet 10"-42" main line sanitary sewer and structure rehabilitation for Sections A, B, D, E, F, H, streets not disturbed in previous projects, and the Biosolids Force Main; Lateral investigation and GPS data collection for the whole project area	Completed between 2011 and 2012
CIPP Lateral Lining – Lincolnway West	Rehabilitation of 40 laterals protecting Lincolnway West from emergency repairs	Completed 2012
CIPP Lateral Lining Phases I and II	Rehabilitation of 262 laterals in Phase I and a projected 335 laterals in Phase II. This includes all laterals under streets rehabilitated in Divisions A-F and H. Interconnected laterals are separated as discovered.	Phase I completed in 2013, Phase II planned for 2014
Division J – Phase I Carlton and Reddick	New 12" storm sewer, replacement of the sanitary laterals, and reconstruction of the pavement, curb, and sidewalks	Completed 2012
Division J – Phase II Middleboro, Berlin, Grand, Cleveland	New storm sewer, replacement of the sanitary laterals, and reconstruction of the pavement, curb, and sidewalks	Planned for 2014
Divisions K, L, M, N, P, R	Sewer separation, lateral replacement, and pavement, curb, and sidewalk replacement	TBD
Middleboro Lift Station Improvement	Roof replacement, exterior brick replacement and tuck pointing, and pump, piping, electrical, and controls replacement	Began late 2013, to be completed 2014

Wilson Boulevard Area

The Wilson Boulevard Area is an element of the LTCP. This area contained four Combined Sewer Overflow (CSO) structures and associated outfall piping to the St. Joseph River along with an additional 12 storm outfalls from Logan Street to Forest Avenue. The project began in



2013 and included the removal of one CSO structure and the reconfiguration of the remaining three CSO structures. The reconfiguration of the CSO structures along with the extension and redirection of the sanitary sewer system will provide capacity to convey the design storm with zero overflows to the river in this area. Additionally a storm sewer system was developed along Wilson Boulevard to separate the storm flows and allow consolidation of the storm outfalls in the area. At completion, of the 16 original outfalls to the River, only five storm and

one CSO will remain. This project was 90% completed in 2013, and the remainder of the work will be completed in 2014. Project investment through 2013 is \$3,000,800. The project layout is shown in Exhibit F. The next phase of the project includes extension of the newly constructed 24" sanitary sewer to continue CSO consolidation, rehabilitation as required of the remaining outfall pipes, Battell Park upgrades, and beautification including trees within the overall area. Projected future investment is estimated at \$2.2 million.

Phasing and Implementation Plan for Remaining LTCP Elements

The preliminary engineering to identify major elements of the LTCP was completed in 2011. Following a more detailed assessment, it was determined that the several elements initially identified in the study required modification due to high groundwater, existing infrastructure conflicts, constructability due to grade limitations, and overall maintainability issues. Therefore, the following table outlines the phasing with brief descriptions of the revised Recommendation and Implementation Plan, which has been accepted by the USEPA and Department of Justice in December 2013 and received City Council endorsement in January 2014.

Long-Term Control Plan - Recommendation and Implementation Plan

Location	Project	Description	Capital Cost Estimate ¹ (\$Millions)	Size ²	Start Date ³	End Date ⁴
Milburn Boulevard Area	Divisions A thru G	Sewer separation and rehabilitation of the area south of the St. Joseph River, bounded by Ironwood, River Ave, and Lincolnway	2.6	N/A	2007	Dec 2026
Wilson Boulevard Area	Wilson Boulevard	Parallel interceptor to redirect flows from CSO 004, 005, 006, 007, and 008 and consolidate into one overflow location at River Crossing RC-4. Upgrade RC-4 if needed based upon flow monitoring upon completion of interceptor. Closure of RC-3.	5.0	N/A	Oct 2011	Dec 2020
River Center CSO 009	Fourth St. Storage/Conveyance Tunnel (Phase I)	Storage/Conveyance Sewer from Main St. to the WWTP	22.6	96"-120"	Feb 2012	Dec 2020
	Fourth St. Storage/Conveyance Tunnel (Phase II)	Storage/Conveyance Sewer from Merrifield Ave. to Main St.	18.7	72"-120"	Dec 2014	Dec 2022
	Fourth St. Storage/Conveyance Tunnel (Phase III)	Storage/Conveyance Sewer from Fourth Street to Merrifield Park (Linden Ave.)	5.7	60"-84"	Dec 2015	Dec 2023
East Area	Linden Area Sewer Separation (Phase I)	Sewer separation of approximately 152 acres north of Lincolnway East between Merrifield Park and Roosevelt Ave.	4.8	N/A	Dec 2014	Dec 2028
	Linden Area Sewer Separation (Phase II)		4.8	N/A	Dec 2016	Dec 2028
	Linden Area Sewer Separation (Phase III)		4.8	N/A	Dec 2018	Dec 2028
	Linden Area Sewer Separation (Phase IV)		4.8	N/A	Dec 2020	Dec 2028
	Alley Conveyance Sewer from Capital Ave. to Merrifield Ave.	Conveyance from the outfall of the Mariellen Lift Station to the storage/conveyance sewer along Merrifield Ave. at Fourth St.	5.8	30"-48"	Dec 2015	Dec 2028
	Northeast River Crossing to Merrifield Park (Linden Ave.)	Conveyance sewer which intercepts flow from the Daisy Road Lift Station Forcemain/Northeast River Crossing	2.3	42"-48"	Dec 2021	Dec 2031
Central Park Area	Daisy Road Lift Station, Forcemain, and RC-5 (Phase I)	Lift Station with 15.8 MGD capacity.	9.3	18"-24"	Jan 2021	Dec 2027
¹ Capital cost includes 20% contingency and 20% engineering, admin, and legal costs. ENR 8000						
² The final facilities will be sized within the stated ranges to achieve zero overflows during the typical year (1992). The sizes shown were preliminarily determined by subbasin flow monitoring during preliminary design of each project component.						
³ Engineer under contract to design the facility.						
⁴ Facility is operational.						

LPA Construction Projects (20% Local Match)

Twelfth Street/Harrison Road Construction

In 2009 the City identified the Twelfth Street Corridor from Union Street to Blackberry Road, as needing upgrades to carry the increased traffic volumes through the corridor. Structure Point Consulting Engineering completed an environmental impact study and a location study for the entire corridor of Twelfth Street from Union to Blackberry. The environmental impact report was approved in 2010 which enabled the City to program Phase I for Federal funding through MACOG. Due to the construction costs for these phases, the City will continue to seek federal funding for subsequent phases.

Phase I of the improvements along Twelfth Street/Harrison Road between Lexington Boulevard and Blackberry Road was designed in 2012 and the R/W acquisition, including condemnation of one parcel, was completed in 2013. In late fall of 2013, this project was awarded to Selge Construction for \$3,834,896. This project consists of total reconstruction of Twelfth Street/Harrison Road along with partial construction to adjoining streets between Lexington Boulevard and Blackberry Road. Construction will include asphalt pavement, storm sewer, sanitary sewer, water main, concrete curb and gutter, concrete sidewalk, new lighting, traffic signal work, and two drainage basins. Utility relocation is set to begin in January 2014. Selge Construction plans to begin work in February or March 2014 as weather permits. The intermediate completion date is set for November 2014 and the final completion date is set for June 2015 for the project.

Wastewater Funds

Grape Road Emergency Repair

On the morning of Friday, August 9, a sink hole in the right hand, southbound lane of Grape Road was reported by a city employee to the Sewer Department. The Sewer Department, along with a local contractor and consulting firm, responded immediately to assess the situation. It was determined that a 24" influent sewer under Grape Road to the Juday Creek Lift Station (JCLS) had failed and was allowing soil to infiltrate into the pipe. Compounded by its close proximity to Juday Creek, this influent trunk sewer is 20' deep and approximately 15' below the water table. Within hours of the critical assessment, Wastewater's 8" portable pump was set up by a local contractor for bypass of the 24" flow as necessary and another local contractor was mobilizing equipment to install the necessary dewatering for the repair. On Saturday, August 10 the upper section of the manhole just west of Grape Road collapsed. JCLS has four influent lines in total which all discharge into this manhole just outside of the lift station. Management of the flow from all four lines was a significant challenge. Two local contractors worked Saturday and Sunday both in the field to stabilize the situation, and progress towards resolution installing



dewatering and contacting subcontractors and suppliers to determine the best available solution. Mishawaka Wastewater, Water, Electric, and Sewer Departments also assisted over the weekend



assessing their utilities and removing wires to allow work to progress. After further evaluation, it was determined the best solutions for restoration were trenchless technologies for both the pipe line and the lower portion of the manhole that was still intact.

While the bypass pumping and lane restrictions were in place, additional investigations were completed to assess other structures and pipelines in the immediate vicinity. It was determined the 18” influent sewer from the north, which traveled under Juday Creek, was also deteriorated. Taking advantage of the dewatering and bypass systems in place and through the use of CIPP, the City rehabilitated this section of pipe in addition to the 24” under Grape Road and the manholes on each side of Grape Road.

The Mishawaka Police Department assisted with short closures of Grape Road to help keep the workers and the traveling public safe. In two short weeks, working overtime and unconventional hours to complete the work and coordinate efforts, all rehabilitation was completed. All other structure and pipeline evaluations were completed and the comminutor pit at the lift station was cleaned to determine condition and slow deterioration. It is a noteworthy achievement that all public utilities as well as travel through this significant corridor were maintained without incident during this repair. This was accomplished by a team comprised of a local consulting firm, two prime contractors working together while borrowing equipment from a third contractor, two specialty subcontractors, at least four other subcontractors, and multiple City Departments. This emergency repair was a testament to the City of Mishawaka, including its relationship with contractors who live and work here, its integrity, and the unity amongst departments to accomplish a common goal for the good of the community it serves. The cost of this emergency repair was almost \$370,000.



Long Range Projects

<u>Project</u>	<u>Completion Date</u>	<u>Est. Cost</u>
<u>TIF Area</u>		
Church/Union Street Improvements – Phase II	Nov 2014	\$4,500,000
Gumwood Road Improvements – SR23 to North City Limits	Nov 2014	\$3,100,000
SR23 – Gumwood/Main Street to Leo Street	Nov 2015	\$4,600,000
Mishawaka Ave Storm Separation & Reconstruction	Nov 2014	\$3,020,000
Third Street Storm Separation and Reconstruction	Nov 2014	\$2,400,000
University Dr. Lift Station Upgrade & Forcemain	Aug 2014	\$1,400,000
West St. Storm Relief Sewer – 6 th St to 15 th Street	Aug 2015	\$2,450,000
West St. Storm Relief Sewer – 8 th St. (West to Logan)	Nov 2016	\$1,850,000
West St. Storm Relief Sewer – 15 th & 16 th Streets (Rose Park)	Nov 2017	\$3,200,000
Logan St. Improvements Design & R/W – Dragoon to Lincolnway	Nov 2016	\$1,900,000
Logan St. Improvements Construction – Dragoon to Lincolnway	Nov 2018	\$2,900,000
Fir Road Improvements – Capital Connector to SR23	Oct 2016	\$2,100,000
LTCP – Flow Control Structure at WWTP head-works	Nov 2015	\$3,250,000
LTCP – Storage/Conveyance Tunnel, WWTP to Main St	Oct 2019	\$29,000,000
LTCP – Storage/Conveyance Tunnel, Race St to Merrifield Ave	Nov 2020	\$25,000,000
LTCP – Conveyance tunnel, Merrifield Interceptor	Nov 2021	\$6,000,000
Division Street to Catalpa Extension	Oct 2017	\$1,657,500
Catalpa Extension – Division to Filbert Road	Nov 2018	\$607,500
McKinley Widening – Division Street to Went St.	Oct 2016	\$1,622,500
McKinley Widening – Cedar Street to Elder Road	Nov 2017	\$8,950,000
McKinley Overpass Over CN RR – Design/RW/Permits	July 2015	\$9,575,000
McKinley Overpass Over CN RR – Construction	Aug 2018	\$18,850,000
<u>LPA Projects (FHWA w/ 20% Local Share)</u>		
Twelfth/Harrison Construction – Lexington to Blackberry Rd	Nov 2014	\$3,834,890
Twelfth St Design & R/W Acquisition – Downey to Campbell	Oct 2015	\$2,150,000
Twelfth St Construction – Downey to Campbell	Nov 2016	\$6,250,000

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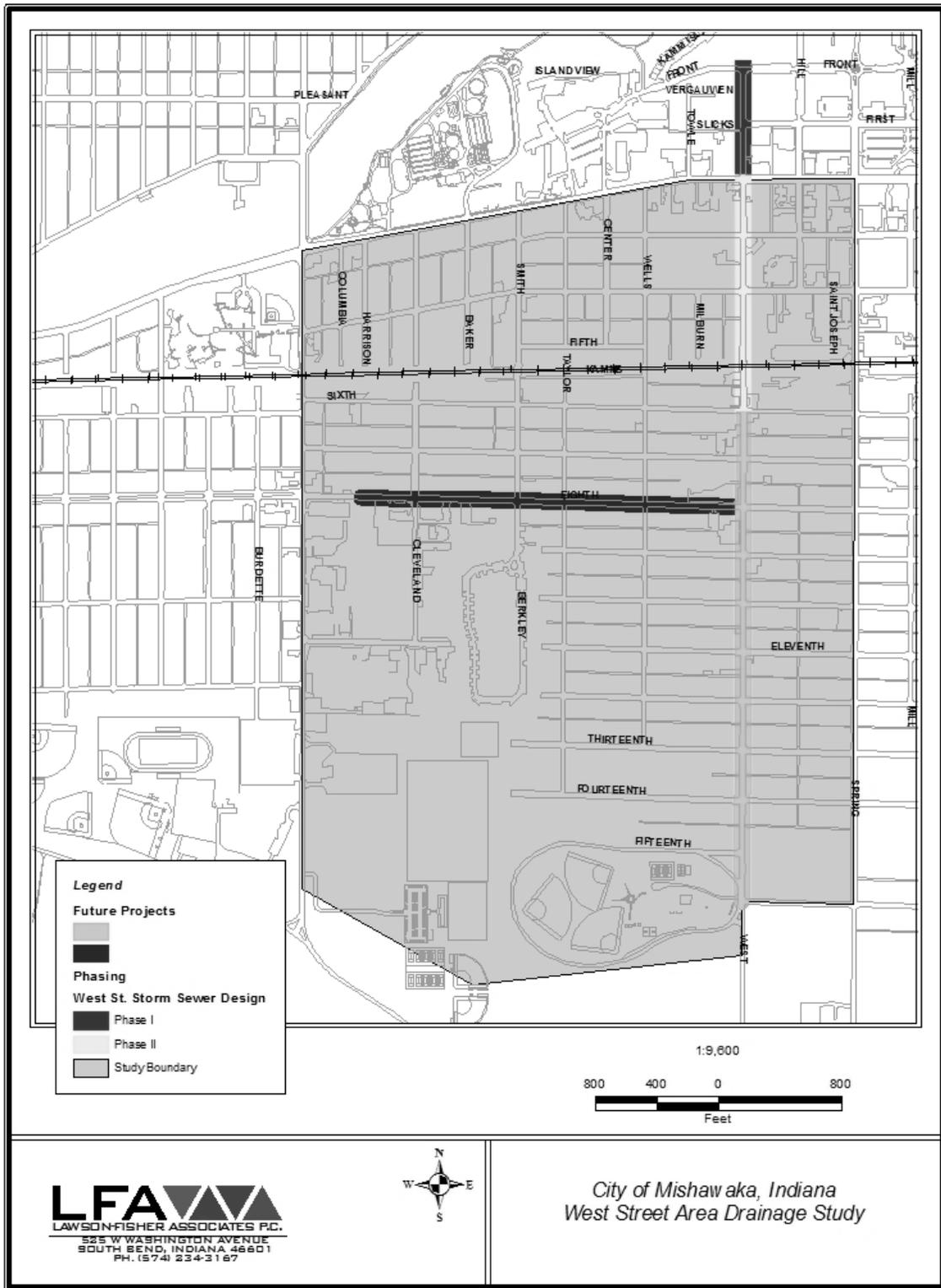


Exhibit A

**CHURCH STREET IMPROVEMENTS
FOURTH TO SEVENTH STREET
CONCEPTUAL ROADWAY IMPROVEMENT AND PLANTING PLAN**



Exhibit B

**CHURCH / UNION STREET IMPROVEMENTS PHASE II
SEVENTH TO NINTH STREET
CONCEPTUAL ROADWAY IMPROVEMENT AND PLANTING PLAN**



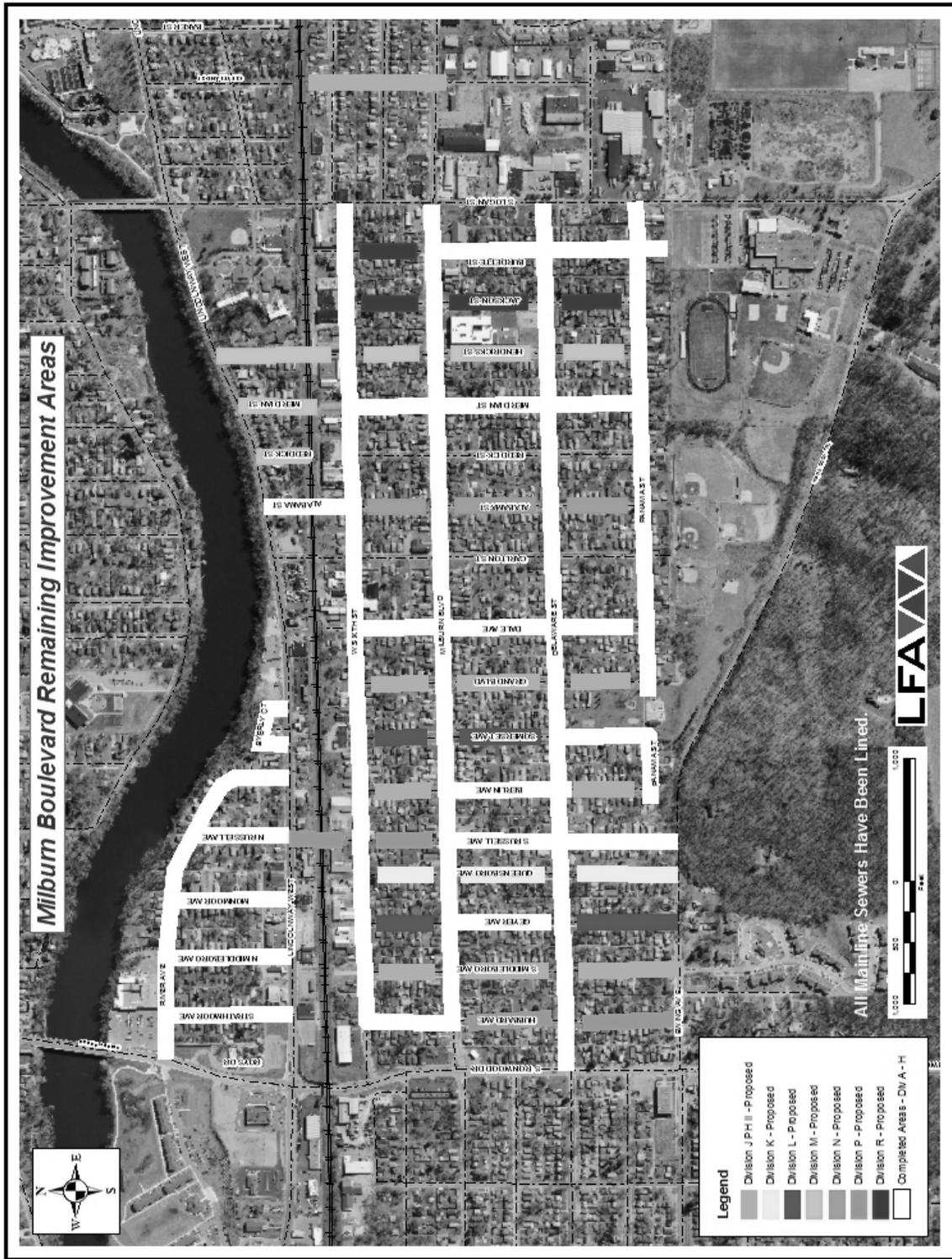
Exhibit C



BREMEN HIGHWAY
US 20 BYPASS TO IRELAND ROAD



Exhibit D



Milburn Boulevard Remaining Improvement Areas

Exhibit E

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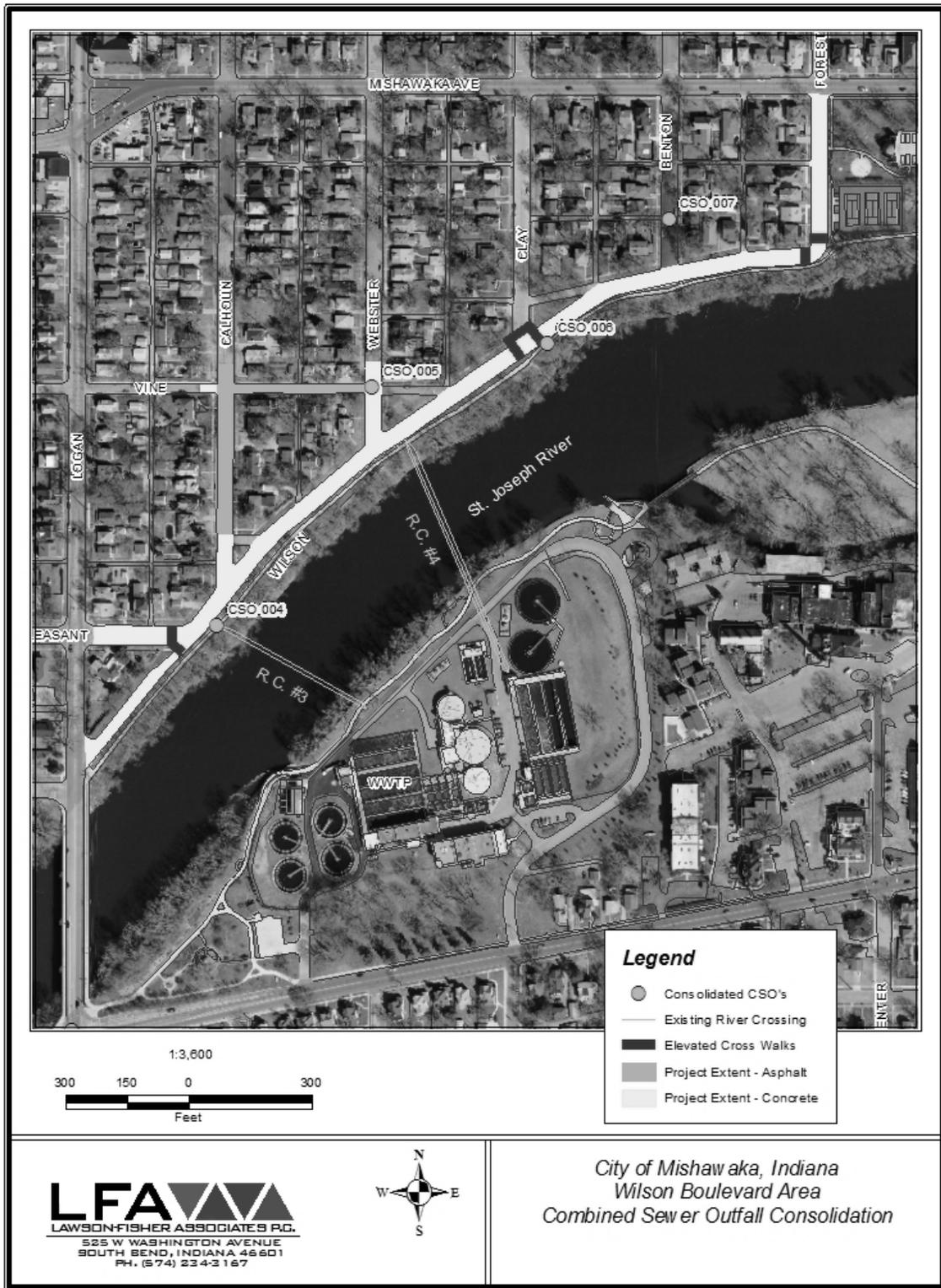


Exhibit F