



## Mishawaka Utilities – Reliable and Safe Hometown Service

Mishawaka's ranking as one of the best places to raise kids is due to many factors. Successful, livable cities are built upon a foundation of unseen infrastructure. Hundreds of miles of water main, storm and sanitary sewers, and electric lines provide our citizens with clean and safe drinking water, reliable and efficient wastewater treatment, and dependable and affordable electric service. Communities without sound utility infrastructure cannot grow and prosper. Mishawaka's electric and water utilities have been providing service for over 100 years. The wastewater utility began protecting the health of the community 58 years ago.

Continued growth, prosperity, and quality of life depend on maintaining up to date public utilities. Mishawaka's kids benefit in ways they probably never think about. The lights turn on, water comes out of the faucet, and the wastes produced by daily living are treated to assure healthy neighborhoods and a clean river. The Utility's crews are local and can be dispatched quickly to respond to problems and emergencies. Interruptions in service are quickly remedied by a utility worker who just might be a friend or neighbor. Mishawaka Utility's 138 employees provide hometown service that our businesses, families and kids can count on 24 hours a day, 7 days per week.

## Business Office

The Mishawaka Utilities Business Office is the hub of the utility operation. The office provides services to the operating divisions including billing, customer service, account management, work order scheduling, and answering customer questions. The business office is where many citizens first contact Mishawaka Utilities and where a human face is placed on the organization. Whether



Office space *Business office employees track customer accounts*

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visiting the office or calling by telephone, a fellow citizen is there to assist customers.

The Business Office is staffed by 24 employees who have worked hard to increase efficiencies and expand customer services. Three Business Office positions were eliminated in 2009 resulting in an annual savings of \$140,000. The accounting staff was moved into the Controller's Office in City Hall. This move resulted in less paperwork being shuffled between buildings and cross training of accounting staff will increase the overall efficiency of the Controller's Office. Trash collection billing is now handled by the Business Office and is part of the monthly utility bill. This means one less check that must be written by customers for their utility needs and saves administrative costs.

Customers can pay in person at the Business Office or at the drive-thru window. A drop box is available to make payments when the office is closed. Additionally, customers may now pay their utility bill on-line, or by a new interactive voice response system. These services save the Utility the costs associated with in-house Credit/debit card transactions. On-line transactions have streamlined the processing of payments by eliminating the need to open and post mailed payments. *...customers may now pay their utility bill on-line* Many customers with local banks may now choose to pay their utility bill by a direct debit from their bank account. These various payment options offer convenience to suit the lifestyles of busy residents. To further reduce costs, the Utility is no longer paying interest on customer deposits.

Beginning in 2009 billing statements are now bar coded to aid the postal service in handling the mailings. Bar coding also saves time and reduces the amount of labor needed to serve customers. A savings of over \$22,000 was realized by instituting this system. Pickup and metering of outgoing mail was contracted out, which resulted in a discount on postage as well as being able to eliminate costly postage metering machines in the Business Office. Annual savings are expected to be nearly \$4,000.



New software is being reviewed and evaluated by the Business Office to digitize reports, records, and statements. This will result in less paper use, printing cost, and postage. It will also streamline record keeping and data recovery.

As members of the community, the staff of the business office takes an active role in helping local organizations that are in need. In 2009, through volunteering and donations, the Business Office staff supported the Food Pantry, Toys for Tots, and the Five Star youth program. Customers of Mishawaka Utilities can count on efficient and personal service. The employees of Business Office are the face of Mishawaka's hometown utility.

## **Electric Division**

The employees of the Electric Division are committed to providing the residents of the community with the best, most reliable electric service possible. Mishawaka's residents enjoy electric rates that are below average for similarly sized cities in Indiana.

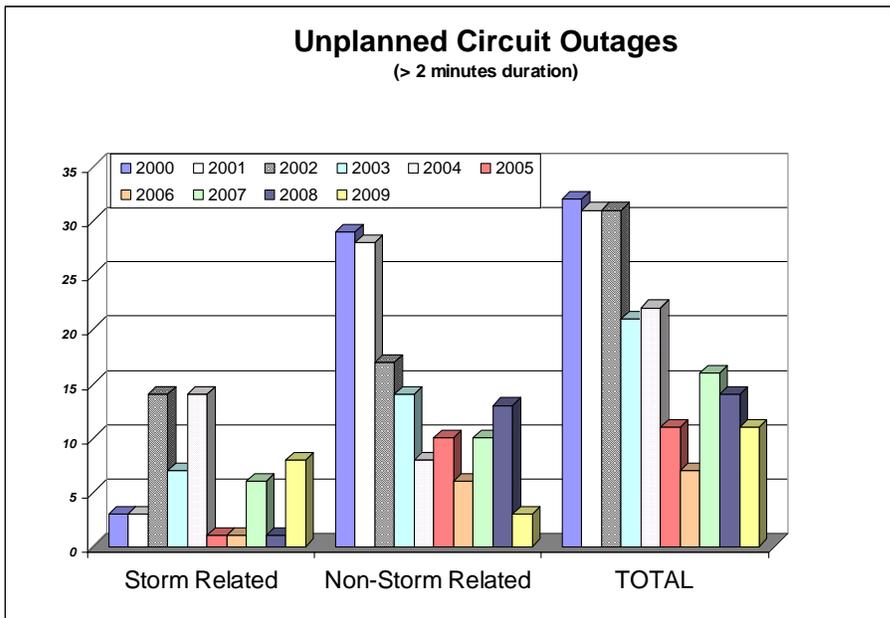
To reduce personnel costs the Electric Department reduced staff by three full time and two part time positions. Tim Erickson was promoted to Electric Department manager in 2009. As a result of this appointment, his former position of Superintendent was not filled. The promotion of a lineman to Construction Foreman resulted in an unfilled Lineman position. Further, the position of Substation Technician was eliminated. Part time street light inspector and custodian positions were eliminated. This reduction in staff resulted in a savings of over \$260,000.

The Mishawaka Utilities electric distribution system serves over 27,000 meters and is the second largest municipal utility in the state. The heart of the system is the eleven substations located at strategic points throughout the City. The employees of the Electric Division provide engineering, construction and maintenance of the City's 300 miles of electric distribution lines consisting of both overhead and buried cables. The system provides electricity to over 47,000 residents.



Although power outages are a rare occurrence in Mishawaka, when a customer loses power nothing else matters. The routine of daily life is instantly affected. In 2009 there were 11 unplanned circuit outages for a cumulative total of 10.82 hours. Only three of the outages were not related to storm damage. This impressive record of reliability is due to ongoing review and analysis of system and operational issues, and making improvements to address system vulnerabilities.

The quick response to outages is due to the ability to dispatch local crews who can diagnose problems and make repairs in less time than it takes many utilities to



gather far flung crews and equipment. The Mishawaka Utilities Electric Department is a leader in the State in the least number of outages, the least outage duration time, and the fastest restoration

time. Mishawaka's families know that even if there is an electric outage, their local electric utility is going to quickly restore power.

In 2009 the Electric Division completed inspections of all energized equipment and records of inspection have been entered into a database. All equipment that must be secured and labeled with warning signage has been catalogued. All equipment will receive periodic inspections. The integrity of the equipment and public safety is priority number one.

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The arrival of the new St. Joseph Regional Medical Center required establishing redundant electric feeds to ensure power to the hospital at all times. A new feed from the Clover substation was constructed and the hospital can be fed from either the Grape or Clover substations with automatic switchover in the event of a failure. Both MU substations are fed from separate AEP substations making this most reliable configuration possible. Reliability was also enhanced by linking circuits at the University substation to serve Hearth Living Center, Douglas Meadows Living Center and the WSBT complex from two different breakers. In the event of a failure or upgrade, this improvement will allow switching to another circuit while repairs are completed.

The Electric Division installed and tested 32 miles of fiber optic cable that is ready to be used as an economic development tool for the City. In the future this network will also connect to all City departments as well as the 11 electric substations to provide real-time data to the Utility as well as its largest customers. The fiber optic network will lead to a reduction in cost for phone and internet service and may enable future the implementation of automated meter reading for the Electric Department.



**High wire act** *Linemen transfer high voltage lines to new pole*

New E-View software was installed allowing circuit maps of the electric system to be viewed over the internet. Contractors and utility locators can be given secure passwords to access the system maps from remote job sites. This ability saves time and expense by making the information available without having to visit the Electric Department just to see maps.

The Department trained its employees in computer aided design (CAD) which allowed in-house changes to be made to electric system design drawings and schematics. This ability reduced contractor expenses and drawing turnaround time. Contractor expenses have been reduced by \$8,000 annually.

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**The Douglas Road and Holy Cross Parkway area is a new and inviting corridor serving the development in and around the medical center. Dark sky lighting was installed down Holly Cross Parkway and west on Douglas Road to the City limit. A total of 138 lights were installed with upgraded copper service wire. Along with the city landscaping in this area this work makes the parkway a very scenic and well lit drive. Dark sky fixtures limit the amount of light that is directed upward and reduces urban light pollution.**

**A vendor managed inventory system (VIM) was instituted in 2009. Inventory items are bar coded for ease of ordering. Less inventory is purchased and kept on hand, reducing inventory costs. The inventory management vendor has many storehouses and Indiana Municipal Electric Utilities can quickly replenish stock through the vendor network. In the event of an emergency such as an ice storm or tornado damage, VIM customers are given preferred status. Orders are filled ahead of non-VIM customers, and emergency orders are guaranteed to be filled within 24 hours.**

**Mishawaka Utilities purchases its power on a wholesale basis from American Electric Power (AEP). The purchased power cost consists of energy charges, demand charges, fuel adjustment charges and power factor charges. In 2009 the Electric Division changed the way the system operates to improve the quality of power to its customers and to virtually eliminate power factor charges. This new operating strategy resulted in a savings of \$14,000.**

**In 2009 the National Electric Safety Code required utilities to conduct arc flash safety assessments to protect employees who work on or near energized equipment. The Electric Department conducted this assessment in-house, saving \$15,000 in contractor services cost.**

**Mishawaka's Electric Division is distinguished as one of the most reliable power companies in Indiana. Its staff is proud of their achievements and takes great pride in serving the community with an eye on continuous improvement.**



## Water Division

Mishawaka's families can count on clean, safe drinking water due to the efforts of the Mishawaka Utilities Water Division. Water is supplied to over 17,000 metered connections serving 46,000 customers. Providing drinking water that meets or exceeds Federal and State standards is a source of pride for the Division. The Division's 31 employees are continuously striving to increase efficiencies and to ensure a safe and reliable source of water to the community's industry, businesses, families and kids.

In order to increase economy and efficiency the Water Division reduced staff by 20 percent in 2009. Four management and six hourly positions were eliminated. Most of the positions that were eliminated were in the Construction Group. With the slowdown in new development caused by the downturn in the economy, the level of staffing in the Construction Group had to be reduced. The savings generated by the reductions in staffing exceed \$560,000 per year. Additionally, five vehicles and one large mobile air compressor were eliminated from the Department's fleet.

The quality of water throughout the distribution system is monitored by over 18,000 tests annually. The Division's Water Quality Group is responsible for sample collection and analysis and for maintaining the proper function of the three water treatment plants. Independent laboratories are also used to confirm that Mishawaka's drinking water is safe. An Annual Drinking Water Quality Report is provided to the to the Utility's customers by July 1 of each year. Mishawaka enjoys an abundant source of high quality groundwater that is the source of the community's drinking water. Although abundant, the underground aquifer that provides drinking water is a fragile resource.



Involving kids *St. Monica sixth grade students tour the Division St. Water Plant*

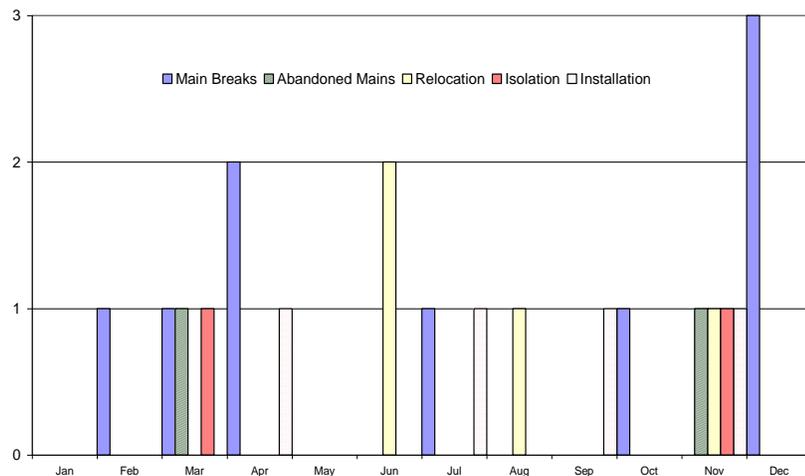
Protecting the quality of the underground source of water is the responsibility of the Wellhead Protection Group. In 2009, the Wellhead Group worked to refine a database of over 4,000 potential sources of groundwater contamination and to integrate this data into the City's GIS system. This effort included locating abandoned wells, identifying commercial and industrial activities that have the

potential to contaminate groundwater, and active participation on the St. Joseph County Water Resource Area Board.

The Backflow/Cross Connection group is responsible for testing the thousands of backflow prevention devices located throughout the water distribution system. The purpose of backflow devices is to protect the water supply from back-siphoning of potentially harmful contaminants from commercial, industrial or irrigation activities. Backflow prevention devices are required on commercial and industrial buildings and on all irrigation systems that receive water from Mishawaka Utilities. Over 2,500 backflow devices were tested in 2009.

The Water Division Maintenance Department keeps the three water treatment plants and

2009 Water Main Activity



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associated well fields in proper operating condition. They are also responsible for maintaining the booster pump stations, pressure control vaults, and the City's landmark elevated water towers.

Keeping existing assets in a well maintained condition is the key to efficient operation. In 2009, the heating, ventilating, and air conditioning systems in all the Water Division facilities were reviewed to improve their operating efficiencies. The result will be better performance and comfort for building occupants, as well as lower operating costs. During the year the boiler at the *...providing clean, safe and abundant drinking water* Virgil Street Water Plant failed. Fortunately, the maintenance group, with assistance from a consultant, was able to repair it avoiding over fifty thousand dollars in replacement costs. Further savings were achieved by building a replacement backwash control panel for the Division St. Treatment Plant. The original control panel was located in the same room as the sand filters and chlorine vapors caused severe corrosion in the panel. The new panel is located outside the sand filter room, away from the effects of the chlorine. Constructing this panel in-house saved over twenty-five thousand dollars.

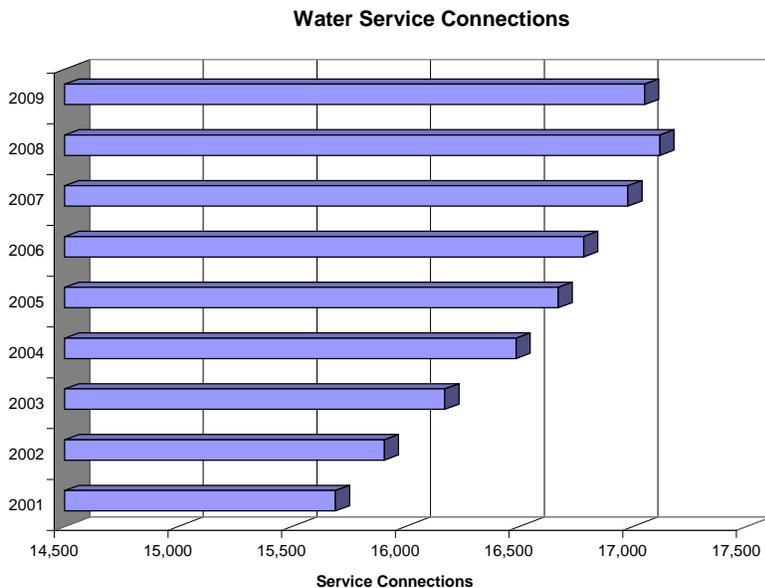
The Water Division Meter Department coordinates closely with the Utility Business Office to schedule the installation, removal, and testing of water meters. Most meter service is done on a pre-scheduled basis but a significant number of meter work is not pre-planned and the Department must respond by radio dispatch as needed. Customer calls for after hours service account for much of the Meter Department's efforts. Water meters are necessary to allow the utility to bill customers for water use and for wastewater discharges. Meter readings also help to determine the types of service required and trends in water consumption. Over 5,400 work orders were completed by Meter Department personnel in 2009.

Water distribution system maintenance and construction is handled by the Construction Department and 2009 was a busy year. Quality of work and productivity are main goals of the department. Over 90% of all work orders processed originated in-house. Water main breaks, leaking service lines, broken distribution line valves, and assistance to contractors working for the City were

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examples of services provided to customers. State regulations require that when lead service lines fail or are exposed during construction they must be replaced by non-lead service lines. Fifty-six lead service lines were replaced by the Water Division in conjunction with various construction projects throughout the city.



The Water Division Construction Department installed 5,000 feet of new 16-inch water main along Fir Road between Douglas Road and the Indiana Toll Road. This major addition to the distribution system was vital to improve fire protection in that

area. The new water main also provides important redundancy to help prevent or minimize loss of service to nearby customers.

The new Fir Road booster station became operational in 2009 serving the Saint Joseph Regional Medical Center and the surrounding area. This key addition to the water distribution system enables the delivery of water from the main water pressure district to the area north of Day Road. Water from the main district is filtered to reduce iron and manganese, enhancing the water quality. The new booster station also helps to provide increased water flow rates for fire protection in the hospital and surrounding areas.

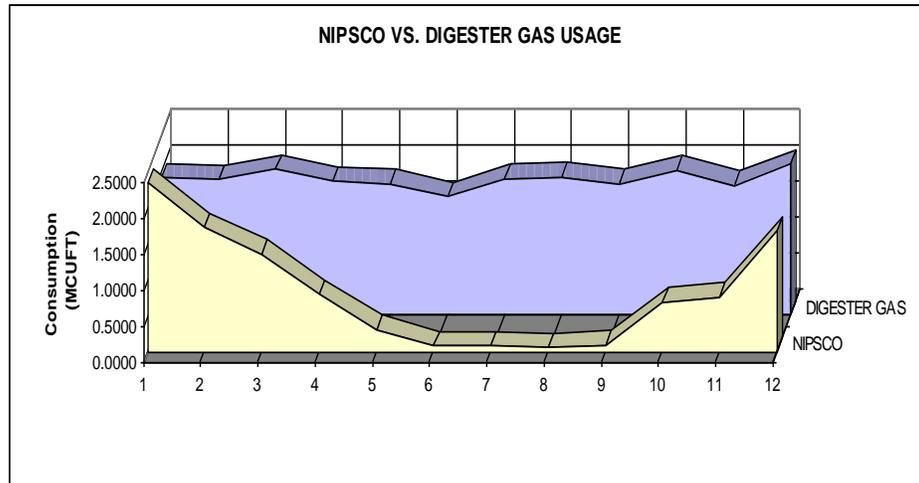
Fire hydrants are a key part of the water distribution system. Mishawaka has over two thousand hydrants. Although the most important function of the hydrants is to fight fires, they are also used to flush the distribution system to enhance water quality. Each hydrant is flushed annually and is checked for proper operation and



repaired as required. Fire hydrant flow data is acquired and is provided to engineering and insurance entities as requested.

The Water Division faced many challenges in 2009. Because the national economy suffered a severe downturn, development slowed and customers looked for ways to conserve

water. As with many businesses, revenues were reduced and increased efficiency and cost reduction were more important



than ever. The Water Division employees found ways to meet the challenges of the economic downturn while still maintaining their focus on customer service and to providing clean, safe and abundant drinking water.

## Wastewater Division

2009 was the first full year of operation after the conclusion of the \$42 million expansion of the Wastewater Treatment Plant. The plant was upgraded and expanded to provide capacity for continued growth in the community and to significantly reduce the volume of combined sewer overflow during wet weather. A city’s infrastructure, including wastewater treatment, must be maintained and expanded or growth will come to a halt. The city can now reliably meet increasing treatment capacity needs for a growing residential population, as well as continued commercial and industrial development.

Mishawaka’s wastewater plant is unique because of its location near downtown and within the Lincoln Park neighborhood. The facility is surrounded by houses,

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condominiums, apartments, parks and the Riverwalk. Much effort is expended to be a positive member of our community. The buffer once provided by the river disappeared as the section of Riverwalk between Kamm's Island and Kate's Garden was completed. As drawn closer to the housekeeping and become more ...over 7 million pounds of pollutants were removed the public is facility, maintenance have important than ever. Treatment plant staff has redoubled efforts to make the facility an attractive asset that the community can all take pride in. The landscaping at the treatment plant was featured in an article in the February 2009 issue of Treatment Plant Operator, a national trade magazine.

In 2009 the wastewater plant treated over 4.6 billion gallons, averaging 384 million gallons monthly and 12.6 million gallons per day. During the year over 7 million pounds of pollutants were removed in the treatment process and the quality of treated discharge to the Saint Joseph River was exceptional; 10 times cleaner than required by law. The



*Fitting in Aerial view of expanded wastewater plant in its Lincoln Park neighborhood*

total flow treated in 2009 was 600 million gallons less than in 2008. This was due to less total precipitation in 2009 and sewer separation projects in the Milburn Boulevard area. Separating sewers reduces the amount of rainwater and groundwater that reaches the treatment plant. This reduction in flow lowers the cost associated with pumping and treatment.

The upgraded facility has an average flow capacity of 20 million gallons per day (MGD) and a peak capacity of 42 MGD. The highest peak flow treated in 2009 was 57.6 MGD and the maximum total flow treated in one day during the year was 27.5

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million gallons. Treating flow in excess of the design capacity requires skillful operation and a well maintained facility. Pollutants removed during 2009 included 6.6 million pounds of organic compounds, 77 thousand pounds of phosphorus, and 440 thousand pounds of nitrogen.

The two end products of wastewater treatment are clean water and a solid residual called biosolids. Over 1,200 dry tons of biosolids are produced annually. Processing of this material occurs at the Biosolids Facility on South Logan St. where excess water is removed and the material is stockpiled for eventual application on area farm fields. The Biosolids Facility is staffed by one person.

Digester gas is generated in the anaerobic digestion treatment process. This gas is 65% methane and is captured and burned in the treatment plant boilers. The boilers supply heat to the facility's buildings and provide process heat. Approximately 60 thousand cubic feet per day is generated, saving over \$100,000 annually in purchased natural gas.

Continually looking for ways to increase efficiencies, the Wastewater Division submitted an application for, and was awarded \$250,000 ARRA stimulus grant funding to purchase and install a new generation high efficiency "turbo aeration blower". This 300 horsepower blower supplies compressed air for the biological treatment of wastewater. This efficient blower qualified for stimulus funding as a "green project" and will save the utility over \$35,000 in annual electric costs. It is one of the first of its kind to be installed in Indiana.

Careful management of construction costs during the recent wastewater treatment plant expansion meant that there were sufficient SRF loan funds remaining to add back-up units for two critical treatment processes. A second gravity belt thickener and belt filter press were added to provide redundancy and increase future solids handling capacity.



## Combined Sewer Overflows

Although the water quality in the Saint Joseph River is better than at any time in our lifetimes, further improvement is required. During heavy rainstorms, when the capacity of the sewer system and treatment plant is exceeded, combined sewer overflows (CSOs) can discharge a mixture of stormwater runoff and wastewater directly to the river without treatment. CSOs prevent basement backups and street flooding. Mishawaka is one of 100 communities in Indiana with combined sewer overflows. There are over 900 CSO communities nationwide.

The reduction of CSO to the river during wet weather is required by federal law and continues to be one of the City's top priorities. Since 1990 Mishawaka has reduced annual CSO volume approximately 85% from 300 million gallons per year to less than 50 million. These significant reductions have been achieved by a combination of treatment plant expansions, sewer separation projects, and sewer system capacity upgrades. Mishawaka has developed a long term plan to address the remaining combined sewer overflow.

Mishawaka's computer model of the combined sewer system, first developed in 1997, was recalibrated in 2009. This required placing temporary flow monitors in the sewer system and rain gauges to measure rainfall. The measured total volume and peak flows during rain events were compared to what the model predicted. The parameters in the model were then adjusted so that the model results matched the actual flow monitor results. This recalibrated model is predicting wet weather flows between 15 and 20% less than what the old model predicted. This reflects the benefits of various sewer separation projects that have been completed since the last model calibration.

Federal law requires cities with CSOs to eliminate their impact on water quality. Cities must develop Long Term Control Plans to minimize combined sewer overflows. During 2009 the City continued negotiation with EPA, IDEM, and the Department of Justice over its Long Term Control Plan (LTCP). The City submitted its final draft in October for review by the agencies. The proposed plan will vastly reduce the occurrence of CSO from the current 50 overflows per year to zero



overflows in years with typical rainfall. EPA has commended Mishawaka for its proactive commitment to CSO control.

Final approval of the LTCP will occur in 2010. The plan is estimated to cost between \$140 and \$160 million and the City is will be allowed 20 years to complete the LTCP projects. Consistent with EPA policy, once the LTCP is approved it will be enforced in a federal consent decree. The decree will require LTCP implementation according to an approved schedule.

Funding the LTCP will require periodic rate increases. A 2008 cost of service study recommended adjustments to the City's sewer rate structure to ensure fair allocation of cost among the different user classes. The first rate increase was structured in three phases to be implemented in 2009, 2010, and 2011. This rate adjustment will provide revenue to fund approximately \$45 million of LTCP improvements. Mishawaka is a leader in the State in its commitment to control CSOs to enhance the water quality in the river and to assure healthy neighborhoods for all to enjoy.

Although the construction of the treatment plant was completed in 2008 the process of learning how to effectively operate the new equipment and systems continued throughout 2009. Efforts began on a labeling program that consists of affixing large vinyl identification labels on piping and equipment. Plant equipment was given prescribed names and pipes are being labeled with the contents of the pipe and the direction of flow. The hundreds of valves are being labeled with numbers. These efforts make writing standard operating procedures more clear and easy to follow.

Maximizing the efficiency of new and expanded systems was a goal for 2009. The expanded facility and trunk sewer brought increased wet weather flow into the plant reducing the volume of untreated combined sewer overflow. Maximizing treatment during wet weather is also required by the State operating permit. The operations staff needs to balance the distribution of flow through the two parallel treatment trains and the process needs to be protected from hydraulic overloading. Normal operating conditions can change drastically during times when the plant is



treating peak flows. Close monitoring of each process and quick reaction to changing conditions requires skilled and highly trained personnel.

A supervisory control and data acquisition computer system (SCADA) allows for monitoring and control of equipment and processes from a remote computer workstation. With the aid of the SCADA computer, the treatment process is able to be controlled by only two operators on each shift. Although the size of the facility has nearly doubled since 1993, the number of operating staff has not increased. In fact, there are two fewer employees overall than there were in 1993. The plant is staffed 24 hours per day, every day of the year.

Leading the team of operators is Chief Operator Robert Hall. Robert spent countless hours during the three year construction of the treatment plant expansion to learn the details of the mechanical and control systems. He became an invaluable



*On guard State of the art computer monitoring assists operators*

member of the team that started up new processes and is a patient teacher and trainer of the operations staff. The outstanding performance of the treatment facility is due in large part to Robert's ongoing efforts. Robert is a 25 year veteran of the treatment plant and has been its Chief Operator for 6 years. He holds a Class IV wastewater operator certification, the highest level of certification awarded by the State of Indiana.

The Maintenance Manager and his staff of 5 maintenance technicians are responsible for maintaining the wastewater treatment plant and the remote lift stations. Heavy emphasis is placed on preventive maintenance. A computerized maintenance management system generates work orders on a daily basis. The maintenance staff normally works Monday through Friday on the day shift but they are available for off-hours emergencies. Since most of the treatment plant equipment has redundant back-up



**in case of failure, the majority of emergency maintenance is associated with the remote lift stations.**

**At the end of 2009, Mishawaka has 31 lift stations in its collection system ranging in size from 150 gallons per minute (gpm) to 2,800 gpm. The oldest station was placed in service in 1952. The stations are continuously monitored by a radio based telemetry system. Alarms are dialed into the treatment plant by phone and also register on the lift station telemetry computer located in the operator control room.**

**To provide sanitary sewer service to the new hospital and to serve the anticipated growth of the area around it, a decision was made to construct a regional sanitary sewer lift station. This facility will enable the elimination of two existing lift stations which will reduce maintenance and operating costs.**

**Critical stations are equipped with stand-by generators and the remainders have transfer switches and receptacles to allow for portable generator operation. Since newer lift stations tend to be far from the treatment plant, in the outer reaches of the collection system, all new stations are required to have permanent stand-by generators. One large lift station that serves an area with numerous restaurants and hotels has an activated carbon odor control system to treat air emissions from the wet well. Almost all newly constructed lift stations are installed and paid for by private developers and then deeded to the City for perpetual maintenance. In order for the City to accept ownership of such stations, they must conform to the City's Lift Station Design Standards.**

**Significant effort was spent in 2009 entering equipment data from the treatment plant upgrade into the maintenance management system. Equipment source information, part numbers and recommended preventive maintenance schedules had to be entered. The maintenance department has lived up to the "do more with less" philosophy over the past 16 years. During this period, 13 lift stations, two odor control systems and a major plant expansion were added, while the number of Technicians was reduced from six to five.**

**The wastewater laboratory conducts analyses required in our NPDES operating permit. This includes over 18,000 samples annually to ensure optimum efficiency,**

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compliance with discharge limitations, and industrial samples to ensure compliance with Federal and local pretreatment standards. The laboratory is staffed by three Chemists.

Typical testing for the Wastewater plant includes carbonaceous biochemical oxygen demand (cBOD), suspended and volatile solids, ammonia, phosphorus and E. coli. The laboratory also conducts analysis for the heavy metals: cadmium, chromium, copper, lead, nickel and zinc. The laboratory annually collects samples for organic pollutants, biomonitoring and mercury. Although these tests are not done in-house, careful collection and handling by laboratory staff is critical.

Biomonitoring is a test for potential toxicity in the treated discharge. Organic pollutant monitoring screens the discharge for more than 200 individual organic compounds. The treated effluent showed no organics or toxicity for samples taken in 2009. There is no current discharge limit for mercury and only monitoring is required. However, it anticipated that the next discharge permit, to be issued in 2011, will contain a mercury limit of 1.3 parts per trillion. This will be the lowest discharge concentration for any parameter. 1.3 part per trillion is the equivalent of 1 inch in 12 million miles!

Every year the laboratory is required to participate in the EPA's Discharge Monitoring Report - Quality Control (DMR-QC) program. This Federal program measures laboratory competence by requiring the lab to analyze prepared samples



*Vigilance Process monitoring assures efficient operation*

with concentrations unknown to the laboratory. Analytical results from the wastewater lab are then compared to the actual concentrations for all of the parameters of the NPDES permit. In 2009, all the parameters were analyzed correctly.

Although Mishawaka is fortunate to have a state of the art wastewater treatment plant it is the staff that brings life to the concrete, pumps, piping, motors, and control systems. Wastewater treatment is a

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combination of physical, chemical and biological processes that must operate in concert and be controlled and maintained with precision and consistency. The 27 employees of the wastewater treatment division have a combined wastewater experience of 367 years. The outstanding quality of the treated discharge to the Saint Joseph River is a clear reflection of their efforts.

## Green Initiatives

Mishawaka Utilities recognizes its responsibility to be a “green” member of the community. The Water and Wastewater Divisions are large consumers of power. Construction activities associated with utility work can impact the environment. Energy efficiency, conservation of resources, and environmental protection are integrated into utility operations.

For the sixth consecutive year the Electric Division was recognized as a Tree Line USA Community. This distinction is earned by following strict standards for plant growth management. Proper tree pruning and protection of trees when digging or trenching nearby minimizes harm to existing trees.

Pruning trees to protect power lines is necessary to minimize the chances of damage from falling limbs, increasing system reliability. In 2009 twenty new trees were planted by the division to replace trees that had to be cut down and over 800 sapling trees were given to fifth grade students from Battell School at an Arbor Day celebration at Merrifield Park. This annual tradition has added countless trees to the City’s neighborhoods.

The Water Division contributed to the green initiative by switching chemicals used for disinfection of drinking water. In a move to increase safety and to eliminate the chance of hazardous chemical releases to the environment, the use of chlorine gas was discontinued. It has been replaced by liquid sodium hypochlorite which is far safer and easier to store and handle. Any accidental spill would have a minimal environmental impact.



Both the Water and Wastewater Divisions volunteered to participate in a two year Energy Management Pilot Project sponsored by EPA and IDEM to benchmark energy use and to identify further energy conservation measures. The pilot project will be used to develop state-wide energy conservation guidance for water and wastewater utilities. The divisions have formed energy management teams consisting of both salaried and hourly personnel to participate in the project.

The Wastewater Division captures digester gas that is generated in the anaerobic digestion process. This gas is 65% methane and is burned in the treatment plant boilers. The boilers supply heat to the facility's buildings and provide process heat. The use of this renewable energy source replaces over 14 million cubic feet of purchased natural gas annually. EPA estimates that 544 large treatment plants nationwide use anaerobic digestion in their process. Of these, only 106 capture digester gas to use as renewable energy. Mishawaka has been doing this since 1952.

Biosolids, the stabilized solid material resulting from the treatment of wastewater is land applied on area farm fields. In 2009 over 820 dry tons of biosolids were produced. Biosolids contain nitrogen and phosphorus, reducing the amount of commercial fertilizer that must be used. It also improves the quality of the soil. This is recycling in its truest sense.

The high efficiency turbo aeration blower being installed at the wastewater plant qualified for federal stimulus funding as a "green project". This blower will reduce electric demand by 430,000 kilowatt-hours annually. The reduced electric consumption will reduce the amount of carbon dioxide released to the atmosphere by 922,000 tons per year. Over the life of the blower the reduced carbon dioxide emitted is equivalent to planting 1,400 trees.

## Awards

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The outstanding work of the Utility employees was recognized by outside organizations in 2009. The professionalism of the Wastewater laboratory staff was acknowledged by receiving the Indiana Water Environment Association 2009 Laboratory Excellence Award. This is the 8<sup>th</sup> consecutive year that the laboratory has received this award. The Wastewater Division's annual report was judged the best in the state by the IWEA for the second straight year and the sixth time dating back to 1996.

In May the Wastewater Plant hosted the annual Wastewater Challenge. This competition includes both practical and written tests in laboratory, process control, safety, and solids handling. Over twenty teams from around the state competed. Mishawaka's team of Ted Hope, Mike Kubisiak, and Bob Haller were the Third Place Overall winners.

The Water Division adds a fluoride solution to the water supply for the purpose of building strong teeth and to reduce the occurrence of dental cavities in children. In 2009, Mishawaka Utilities received the Indiana State Department of Health Water Fluoridation Award for the fifth consecutive year.

The Electric Division entered two apprentices in the 2009 American Public Power Association Line Worker Rodeo in Austin, Texas. This is a nationwide event and over 60 teams competed. Dave Cochran finished third and Chuck Bailey finished thirty-seventh overall among apprentice linemen. Chuck Bailey went on to compete in the international rodeo that included over 300 teams. He distinguished Mishawaka Utilities by finishing sixty-third overall and third among U.S. apprentices. These two linemen reflect the quality of Mishawaka's world class apprenticeship program.

The employees of Mishawaka Utilities take pride in serving *their* community. Reliable, affordable electric power, clean and safe drinking water, and effective wastewater treatment add to the comfort and quality of life for Mishawaka's families. The Business Office provides local, personal service to its customers. The Utilities strive to help make Mishawaka one of the Best Places In Indiana To Raise Kids.

Working together to build the "Best Hometown in America" by delivering exceptional services, promoting safe and clean neighborhoods, elevating the quality of life, and inspiring pride in our community.