

DEPARTMENT OF PUBLIC WORKS
2013
ANNUAL
REPORT

**CITY OF SOUTH BEND, INDIANA
DEPARTMENT OF PUBLIC WORKS
2013
ANNUAL REPORT**

Table of Contents

Environmental Services Division	Page 3
Traffic and Lighting, Streets, and Sewers Division	Page 31
Solid Waste Division	Page 38
Engineering Division	Page 39
Water Works Division	Page 41
Central Services Division	Page 53
Energy Division	Page 68

City of South Bend Division of Environmental Services
2013 Annual Report Wastewater



OPERATIONS

MAINTENANCE

COMBINED SEWER OVERFLOW

ORGANIC RESOURCES

INDUSTRIAL PRETREATMENT

LABORATORY

ENVIRONMENTAL COMPLIANCE

SAFETY

LONG TERM CONTROL PLAN PROJECTS

INFORMATION TECHNOLOGY

ENERGY MANAGEMENT

FINANCE



The South Bend Wastewater Treatment Plant operates under a National Pollutant Discharge Elimination System permit. This NPDES permit, issued December 1, 2011 by the Indiana Department of Environmental Management, allows the plant to discharge treated wastewater to the St. Joseph River in accordance with permit conditions. The NPDES Permit was modified on May 1, 2013 to include a Streamline Mercury Variance and a Pollutant Minimization Plan.

In 2013, the South Bend Wastewater Treatment Plant treated a total of 11.203 billion gallons. This converts to an average daily flow of 30.69 million gallons per day.

Through the wastewater treatment processes of aerobic and anaerobic digestion, the solids that were removed during treatment were converted to high quality biosolids, rich in fertilizer and soil conditioning value. Through December of 2013, the wastewater plant produced 2489.8 dry tons of biosolids. This material is beneficially used through land application on farm fields saving the Division approximately a half million dollars in landfill costs.

cBOD = Carbonaceous Biochemical Oxygen Demand TSS = Total Suspended Solids

I. OPERATIONS

In 2013 the WWTP facility underwent construction upgrades. Engineering and the preparation for additional upgrades also took place. The projects included...

Primary Clarifier Rehabilitation

The primary rehabilitation project is underway. Tank 5 has been through its demolition phase and new concrete walkways and internal parts will be replaced early in 2014. The Grit Classifier has been replaced and is operational, resulting in significantly improved grit removal during high wet weather flow events.

Permit Parameter	Average Influent Concentration (mg/L)	Average Effluent Concentration (mg/L)	Permit Monthly Average Final Effluent Limit (mg/L)	Tons Removed in 2013 (Dry Weight Basis)	Average % Removed	% Compliance w/ NPDES
cBOD	91	3	20 (summer) 25 (winter)	4111	97	100%
TSS	103	5	20 (year round)	4578	95	100%
Phosphorus	2.1	0.5	1 (year round) & meet required % removal	75	75	100%
Ammonia	8.6	0.10	2 (summer) 2.9 (winter)	397	99	100%
E. Coli	N/A	13 average MPN/100mL	125 (Apr.-Oct) MPN/100mL	N/A	N/A	100%



Primary Digester #2 Upgrade

Digester upgrade and improvements are underway. PRV valves have been replaced, much of the digester basement demolition has occurred and the new boiler has been installed. Demolition and rebuild of the Digester 2 Control Building is underway.



Aeration Improvements

In 2013 the last three aeration tanks were converted to low pressure membrane diffusers. In November of 2013 the plant was able to completely institute the DO Control System, fondly called “George” by the operators. Energy use is now being tracked to establish the energy savings earned by going to an automated DO system. The drain valve in the aeration feed channel was also replaced which should allow for more frequent maintenance and cleaning of the feed channel.



Ferric Chloride Facility

In 2013 the engineering was completed for the permanent Ferric Chloride feed facility. The project was bid and awarded to Grand River, with construction to begin in the spring of 2014.

Operations Key Performance Indicators for 2013 are as follows:

NPDES Permit Violations	0
Operations Staff Work Requests Generated	446
Total Work Orders Complete	1,774

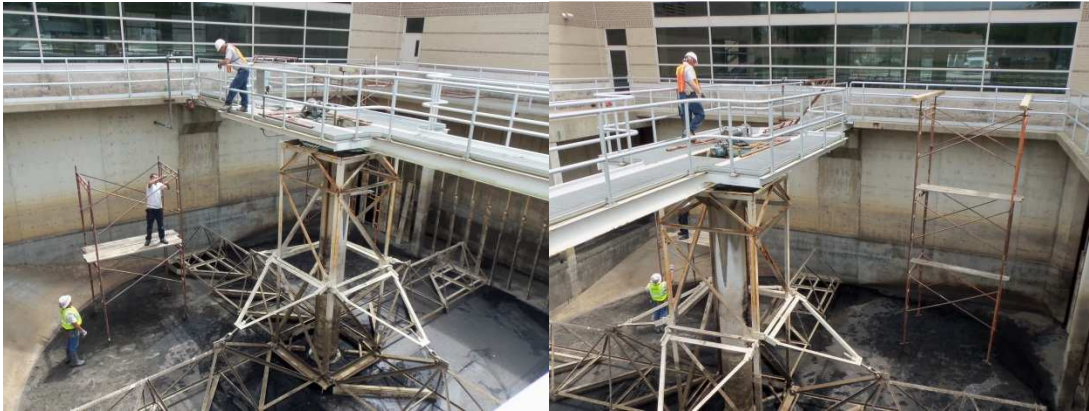
II. MAINTENANCE

In 2013, the South Bend Wastewater Treatment Plant continued efforts to improve and sustain the maintenance process for equipment reliability. The following items are highlights from the maintenance department.

Detritus Tank Drive Unit Replacement

The drive units on both detritus tanks were out of spec and showing rust and additional signs of deterioration due to the corrosive nature of the process. The City procured the new drives before the project to ensure the completion of the project prior to the typical wet weather season. These

new drives greatly improved the performance and reliability and allow for greater grit removal which protects downstream equipment from excessive wear.



Replacement of Right Angle Gear Drive for Raw Sewage Pump #2

In 2013 an inspection of the right angle drive for Raw Sewage Pump #2 revealed a cracked main shaft and bearing failure. A new unit was purchased and installed. This pump along with two other raw sewage pumps is vital to maximizing flow during wet weather.



HVAC Improvements

The engineering for the HVAC improvements in the Administration Building was completed, went to bid and was awarded in 2013. Work is scheduled to begin in early 2014 and should be completed by early February.

Mercury Compliance Inventory

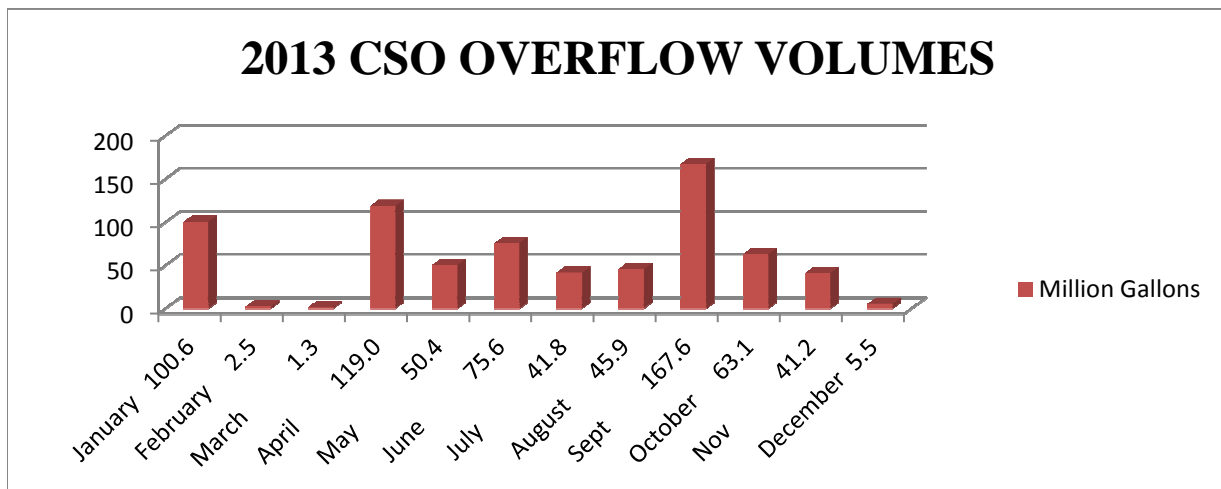
In conjunction with compliance and regulatory requirements a comprehensive inventory of any equipment, instruments or chemicals in use at the plant and lift stations that contained any amount of mercury was completed and documented.

Maintenance KPIs' include:

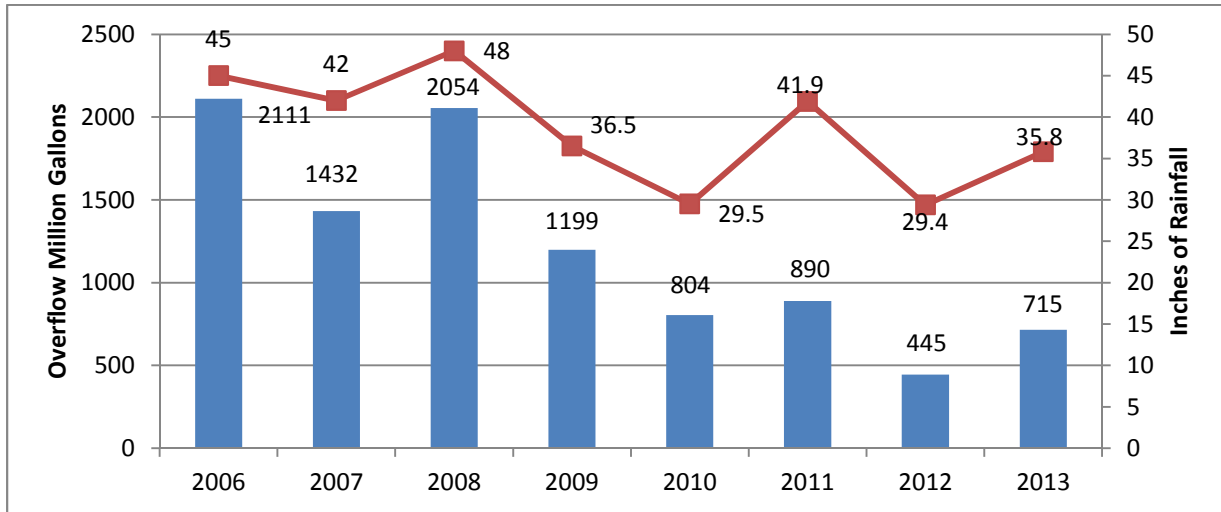
Number of Preventative Work Requests Completed	6790
Work Order Backlog Hours Monthly Average	1025
Number of After Hour Emergency Calls	80

III. COMBINED SEWER OVERFLOW

The City of South Bend has 36 active combined sewer overflow points ranging in outfall size from 12-inch to 96-inch diameter pipes. The receiving stream for all the overflows is the St. Joseph River. Each outfall structure site is monitored for depth every five minutes. Five of these sites have the capabilities to meter velocity and discharge volume. There are several additional measuring devices located in the sanitary trunk lines, storage basins and interceptors. The total number of in-line sewer flow measuring devices is around 140. Each of the metering devices outputs data that is collected via the CSO.Net System. The data is displayed on graphs and displayed on the internet. The general data is then used for SWMM Modeling, minimization of overflow discharge volumes by way of collection system maintenance, records retainage, and high level alarm notification. The total amount of wet weather overflows recorded in 2013 was 715 million gallons. Annual precipitation averaged from the six gauges was 35.8 inches. The graphs noted below represent the monthly CSO Overflow Volumes for 2013, the Monthly Precipitation for 2013, and a Historic Rainfall to overflow comparison.



HISTORIC RAINFALL TO OVERFLOW



CSO STAFF ACCOMPLISHMENTS IN 2013

The CSO Operations Staff managed / constructed several special projects during the year.

The primary projects that were completed are as follows:

- Implemented weekly lift station wet well cleaning program.
- Replaced and installed numerous sensors and stilling tubes
- Started quarterly WWTP drain and clarifier cleaning program.
- Developed CSO power point presentation for citywide staff CSI training.
- Research of peracetic acid use for future disinfection of CSO outfalls and WWTP effluent.
- Replaced collection system monitoring components in the Ethanol sewer drainage basin.
- Installed new backflow flap gate in the CSO 007 overflow structure.
- Prepared 2012 CSO Performance Assessment Report.
- Obtained Kensington Farms bench mark elevation survey of all four gates.
- Partnered with the street department, JF New (Cardno), WWTP staff, and University of Notre Dame “Student Engineers without Borders” to construct a rain garden at the WWTP.
- Removal and replacement of the CSO 018 discharge structure and backwater valve.

- Replacement of valve control cabinet and all underground wiring systems at CSO 025.
- Replaced Rotork drive assembly and associated wiring at Kensington Gate 2.
- Started program to field investigate and calibrate all level flow sensors.
- Replaced defective 48” Tideflex backwater check valve at the Leeper Park river crossing.
- Replaced defective 15” backwater gate at CSO 035.
- Installed several additional ISCO monitoring units at key sewer locations.



2013 WWTP RAIN GARDEN



NEW CSO 018 STRUCTURE



CSO 018 - 60” X 94” TIDEFLEX
TIDEFLEX



CSO 007 - 48”



CSO 025 CABINET REPLACEMENT



WWTP DRAIN & LIFT STATION CLEANING

2013 KEY PERFORMANCE INDICATORS

Number of Work Orders Assigned was	1,297.
Number of Work Orders Completed was	1,296.
Number of Dry Weather Overflows	2
Number of site inspections	4,644
CSO EmNet System Uptime (Goal 90%)	93%
(December was the only month below the goal – 87.74%)	
Number of after hour callouts	3

IV. ORGANIC RESOURCES

At Organic Resources we manage the Wastewater Treatment Plant Biosolids and operate the compost facility. We are able to accept brush, grass clippings and leaves. Our skilled workers, by using heavy equipment, are able to make organic compost and mulch that is available for purchase. It is also available at no charge if the customer self-loads. In September of 2013 we opened up a 24 hour self- loading area of compost and mulch to better serve our customer’s needs.

A ban of plastics bags took effect January 1, 2014. We screened the plastics out of compost and a total of 7812.6 tons was taken to the landfill. Several truckloads of compost were taken to an offsite landfill to test for use as an alternate daily cover. In 2013 we began a cleanup of the “Legacy Pile” which has accumulated over several years.



2013 ORGANIC RESOURCES FACILITY SUMMARY

Biosolids Received	2489.8dry tons
Biosolids Land Applied	2029.1 dry tons
Acres Land Applied	486.6 acres
Leaves Received	3489.8 tons
Yardwaste Received from Customers	685.8 tons
South Bend Solid Waste Yardwaste Program	5419.9 tons
Brush, Whole wood, Woodchips received from customers	1014.7 tons
Brush, Whole wood, woodchips received from City Dept.	2073.62 tons
Compost Sold and Distributed	
Compost Sold	638.0 tons
Compost Self-Loaded	93.4 tons
Compost used by City Dept.	35.5 tons
Mulch Sold and Distributed	
Mulch Sold	462.8 tons
Mulch Self-Loaded	154.3 tons
Mulch used by City Dept.	104.5 tons
Plastics Hauled to the landfill	7812.6 tons
Grit hauled to the landfill	1802.11 tons
Total Revenues	\$72994.80

Yardwaste

Yardwaste is delivered to Organic Resources by the Solid Waste Department, commercial companies and numerous residents.



Loading Grinder

Yardwaste being dropped off.

Ground Yardwaste

The material enters the mill of the grinder, it is shredded into smaller pieces by rotating hammer tips and shredded material is then put into a pile by the conveyor belt.

Aeration of Material

After material has been shredded it is placed into rows to breakdown. A compost turner known as the Cobey is used to aerate the rows and acts as an above ground tiller. This particular model can go over rows up to eight feet high and eighteen feet wide. As the material moves through the machine, it is mixed and will be turned in a few days.



Static piles of compost being turned

Screening Compost

After the compost has been broken down, the product is picked up by a loader to be taken to the screen machine. The compost goes through a set of screens, which separates the debris from the finished product. The debris is then put into a pile and transported to the landfill. The screened compost is sent to a large stacking conveyor. When the compost is ready for loading, it is taken to a designated area.



Screen machine being loaded

Screen machine in action

Screen machine in the sifting

Customer Loading

Organic Resources offers loading of compost and mulch for a small fee while supplies last. Our skilled operators can load a variety of trucks from standard pickups, to semis. Piles of compost and mulch are available for self-loading at the front of the facility.



Customer self-loading mulch

Customer being loaded

Semi being loaded



24/7 Self-loading Area

Grinding of Mulch

Brush is delivered to Organic Resources by City Departments and numerous residents. A tub grinder that is rented once a year is used to grind the brush into mulch. At that time the mulch is available for self-loading.



Land Application of Biosolids

Biosolids produced at the Wastewater Treatment Plant are stored at Organic Resources until land application. During land application biosolids are loaded into contracted trucks, which transport the material to the farm fields. The biosolids are picked up by a loader and loaded into a spreader. The material is spread throughout the fields and is then incorporated into the ground. The Biosolids acts as a soil conditioner and a fertilizer.



Truck being loaded with Biosolids from OR pad



Biosolids being loaded into the



Slinger spreading material on the field

Biosolids received at OR (dry tons)	2489.8
Biosolids Land applied (dry tons)	2029.1
Plastic hauled to Landfill (wet tons)	7812.6

V. INDUSTRIAL PRETREATMENT

The Mission for Industrial Pretreatment is to protect the POTW, staff, and St. Joseph River from industrial pollutants. The goals for the Pretreatment Program are:

- ✓ No pass-through, interference, or violation of effluent or biosolids standards
- ✓ No industry in Significant Non-Compliance with permit or pretreatment standards



The Industrial Pretreatment Program includes the following elements, among others:

- ✓ Industrial users
- ✓ Wastewater
- ✓ Compliance monitoring
- ✓ Collaboration
- ✓ Environmental Regulations
- ✓ Enforcement



The Industrial Pretreatment Program conducts monitoring of industrial wastewater as well as inspections of industrial sites to ensure compliance with environmental laws. These images display the types of environment in which the Pretreatment Coordinators often work.



Pretreatment Coordinators visit industrial facilities to do various types of monitoring such as recording industrial wastewater flow and sampling industrial wastewater for contaminants.

In May 2013, the Pretreatment Group *held the Third Annual Industrial Pretreatment Workshop* for industrial operators and company representatives. Certified Wastewater Operators earn three Technical Continuing Education Credits (CEU) while learning about how to remain in compliance and about how changing Local Limits may affect their industry, among other topics. Fifteen (15) industry representatives attended, representing twelve (12) local industries. In April, the Pretreatment Group *attended the Annual Pretreatment / Indiana Industrial Operators Association Conference*. At this conference, Pretreatment personnel can learn about industrial/manufacturing processes and wastewater treatment and industrial personnel can learn about their responsibilities regarding the Pretreatment Program as well as why it was

established. In November, two (2) members of the Pretreatment Group attended the Indiana Water Environment Association's (IWEA) 77th Annual Conference. Kim Thompson, the City's Environmental Compliance Manager who is also part of the Pretreatment Group, helped to develop and deliver a presentation discussing the responsibilities of the Pretreatment Program when a new industry comes to your city. In December, all of the members of the Pretreatment Group gained a new perspective on environmental law after attending a workshop on environmental law presented by Attorney, Edward L. "Skip" Kropp, with Steptoe and Johnson. Also in December our own, Manuel Bueno, was elected to be Co-Chair of the Indiana State Pretreatment Committee! The members of the City of South Bend Pretreatment Group are long-standing members of the State Pretreatment Committee. Attending these statewide meetings is valuable in order to keep our Coordinators abreast of events and Pretreatment Program developments throughout the state. Manuel will serve the Committee in this capacity for three years.

Pretreatment Activity	Total
Significant Industrial Users Permitted	18
Other User Permits	9
Self-Monitoring Reports Reviewed	331
Monitoring Events Conducted	83
Letters of Violation Issued	16
Administrative Fines Issued	5
Total \$ amount of AF Issued	\$3,500.00
Administrative Orders Issued	2
Industries in Significant Noncompliance	0
Monitoring Fees Collected	\$17,361.00
High Strength Surcharges Collected	\$72,219.84

The Industrial Pretreatment Program continued using Key Performance Indicators to measure outcomes in 2013 and will continue using those indicators through 2014. Industrial Pretreatment Key Performance Indicators include:

Industries in Significant Noncompliance (SNC)	0
Monitoring reports reviewed (including monitoring events conducted by the Industrial Pretreatment Group and by Industrial Users)	414

VI. LABORATORY

The Environmental Services Laboratory supports the Wastewater Treatment and Water Works with analysis of wastewater, industrial and drinking water samples. This year, the Lab was presented the Indiana Water Environment Association (IWEA) Laboratory Excellence Award for the nineteenth consecutive year. The Lab was inspected by a member of the IWEA Laboratory Committee who performed a detailed audit to determine that the Lab met or exceeded each of the measures to achieve the award.



Lead Chemist, Michelle Smith with Chemists Lindsay Moskwinski, Paula Martinez, and Abbey Canfield

The Lab also maintained their Indiana State Department of Health certification for both chemistry and microbiology. This allows them to continue doing in house laboratory work on drinking water for the Water Works Department and on pools for the Parks Department in addition to their wastewater analysis.

As outlined in their latest National Pollutant Discharge Elimination System permit, The City of South Bend Wastewater Treatment Plant is required to implement a Pollutant Minimization Program Plan that will identify and minimize the discharge of mercury into the environment. The Laboratory Staff spent numerous hours in 2013 preparing a mercury-free purchasing policy. A survey and educational materials were mailed out to over 600 area businesses. The Laboratory staff compiled the survey data that was returned. This work has brought awareness to many of the companies that discharge to the South Bend sewers and to the vendors who supply the wastewater treatment plant with chemicals and supplies.

The Chemists are involved in other projects outside the lab. They sampled ground water wells at the Organic Resources facility twice this year and also collected weekly samples from the St. Joseph River when conditions allowed. The samples are collected from bridges throughout South Bend, beginning upstream at the city limits and ending downstream of our outfall.



Lindsay Moskwinski sampling the groundwater wells at Organic Resources



Michelle Smith sampling Bowman Creek near Ravina Park and Studebaker Golf Course

As part of the City's Consent Decree, a Supplemental Environmental Project was implemented to research the water quality of Bowman Creek. In 2013, the wastewater laboratory staff assisted in this project by collecting samples from specified areas along the creek for *Escherichia coli* analysis.

The Laboratory Staff achieved 97% accuracy on their performance evaluation studies for wastewater and 98% for drinking water (100% for all certified drinking water tests). The chart below displays the results for the 2013 studies.

Drinking Water Study	Results
WS13-1 (March)	43 out of 44
WS13-3 (August)	22 out of 22
Wastewater Study	Results
WP13-2 (May)	17 out of 17
WP13-3A (June)	15 out of 16
DMRQA-33 (July)	10 out of 11 + 1 out of 1 corrected
WP13-4 (Nov)	17 out of 17

The Key Performance Indicators are as follows:

- **All sample holding times met? Yes**
- **% of QC points out of control for the year: 0.47%**
- **% of Samples reported that required notes from QA QC issues: 0.18%**

VII. ENVIRONMENTAL COMPLIANCE

In 2013, the Indiana Department of Environmental Management issued a modified NPDES permit to the wastewater treatment plant which included the Streamlined Mercury Variance (SMV). The SMV added a Mercury Pollutant Minimization Program Plan to the permit. This Plan includes Best Management Practices for mercury use at the treatment plant, and a significant amount of outreach to non-residential facilities that use or handle mercury, including dentists, medical facilities, and auto repair facilities. The purpose of the Plan is to minimize mercury that is discharged to the wastewater treatment plant.

Wastewater treatment staff worked with IDEM to develop a testing protocol for Peracetic acid(PAA). Peracetic acid could potentially be used for disinfection in both the treatment plant and wet weather treatment facilities in the collection system. Numerous hours were spent researching PAA, testing methods, and regulatory requirements. Although IDEM ultimately decided not to allow trial use of PAA at this time, a model for negotiating new treatment technologies with IDEM was developed through this process.

A technical evaluation of the need to revise local pretreatment limitations was completed in 2012, as required by the NPDES permit. This evaluation identified that limitations should become much more stringent, so alternate methods of allocating local limits were studied. A detailed evaluation report was submitted to the US EPA in March of 2013. After several months of discussion with the US EPA, the evaluation was approved in December. Work immediately began on updating ordinance language and calculating mass pollutant allocations for existing industry.

The CSO Operational Plan was revised in 2013. Several pages were updated to reflect changes that have occurred in the day to day operation of the CSO system. IDEM also issued a new CSO reporting requirement to take effect in 2013. This new CSO Monthly Report of Operation required several data points that were not part of the existing CSO Discharge Monitoring Report. After much discussion with the IDEM, the City was granted an extension to begin the reporting so that appropriate preparation and review of the new data could take place. The new CSO MRO reporting will begin in early 2014. Many hours were spent in the fall of 2013 working to develop the CSO MRO form and then testing the form to make sure data was presented as accurately as possible.

The US EPA conducted a Risk Management Plan audit in April of 2013. At this time the EPA has not issued any audit findings. A new federal air quality rule went into effect at the end of 2012. This rule, RICE NESHAP, impacts the operation of internal combustion engines. In 2013 a review was done to determine compliance with RICE NESHAP, and preparations were made to bring an existing natural gas engine into compliance.

A solid waste inspection at the Organic Resources composting facility resulted in a notice of violation related to the storage of non-compostable plastic from yard waste bags. This concern had already been raised with City management and in fact a letter advising IDEM of the practice had been submitted to IDEM months earlier. A compliance plan to manage the existing solid waste and future operation of the facility was developed. IDEM ultimately approved the plan, and quarterly reporting of progress will begin in 2014.

In 2013 there was continued participation in the IWEA Government Affairs committee and the POTW Inter-municipal Task Force.

All pertinent information such as NPDES Permit records, all Pretreatment data and correspondence as well as Operation, Maintenance and Sewer work orders are filed in one centrally located area.



VIII. SAFETY

The South Bend Wastewater Plant received the Indiana Water Environment Association (IWEA) Safety Excellence Award for the 18th consecutive year.

The staff received 530 hours of safety training.

111 contractor workers received a safety orientation before starting work at the facility.

Safety Data sheets on chemicals in the laboratory were put on the computer to facilitate easier access to this vital information.

The process to put Lockout/Tagout procedures for specific equipment on the computer was started to develop easier access.

A safety meeting is conducted monthly where all employees are encouraged to bring any safety concerns for discussion. All safety issues are documented and are properly assigned for review. In 2013, 16 safety concerns were discussed and 13 were resolved.

Performance Indicators are:

Recordable Accidents	0
Hours of lost time	0
Vehicle accidents	1

As part of community relations, 79 persons were given a tour of the facility and 21 persons received a lecture on wastewater treatment at an offsite venue.

IX. LONG TERM CONTROL PLAN PROJECTS

Environmental Services began implementing Wastewater Treatment Plant upgrade projects for the Long Term Control Plan in 2013. Two capital improvement projects were awarded between December 2012 and July 2013 totaling \$10,642,070 (Base Bid) and both projects are currently under construction. Eight primary clarifiers and one primary anaerobic digester are being

rehabilitated. These projects will standardize equipment, improve treatment processes, and provide better operational efficiencies.

Project No. 111-071 Primary Clarifier Rehabilitation and Equipment Upgrades

The Primary Clarifier Rehabilitation construction activities are projected to continue through Summer/Fall 2015. This project includes the rehabilitation of eight primary clarifiers and the replacement of the

hydrogritter. New chain-and-flight equipment, drive motors, electrical wiring, process pipes, scum tilt tubes, concrete walkways, structural repairs, automated valves, and fire alarm upgrades are included.

Designer: Arcadis (Indianapolis, Indiana)
General Contractor: L.D. Docsa Associates, Inc. (Kalamazoo, Michigan)
Construction Schedule: Winter 2013 – Summer/Fall 2015
Projected Cost: \$5,043,270.00



Old WEMCO Hydrogritter Separator Unit, conveyor, and manually actuated valves



New WEMCO Hydrogritter Separator Unit, JDV Conveyor Unit, and Rotork Actuated Valves



Demolition of Air Pipe from Primary Tunnel



Installation of New Electrical Conduit in Tunnel

Project No. 111-029 Digester No. 2 Upgrade and Digester Gas Cleaning

The Digester No. 2 Upgrade project is currently under construction. Construction activities are projected to continue through January 2015. The project includes the rehabilitation of one 110 foot diameter anaerobic digester and the installation of gas cleaning equipment for methane gas recovery and reuse. Inclusive in the rehabilitation are one new boiler, process pipes, electrical upgrades, floating digester tank cover and superstructure, tank repairs, four draft tube mixers, updated digester control building façade, updated digester tank façade, gas cleaning equipment, and a gas cleaning equipment shelter. At the completion of this project, the City will utilize cleaned digester gas in a new boiler for partial fuel recovery. Excess methane will be burned and flared.

Designer: Greeley & Hansen (Indianapolis, Indiana)
 General Contractor: Grand River Construction (Hudsonville, Michigan)
 Construction Schedule: Summer 2013 – Winter 2014/2015
 Projected Cost: \$5,598,800



Digester 2 façade prior to demolition



Digester 2 Control Building before demolition

	
<p>Digester 2 brick façade removed and superstructure truss demolition.</p>	<p>Digester 2 Placing the new boiler equipment pad in the Digester 2 Control Building</p>

X. INFORMATION TECHNOLOGY ADVANCES

- Implemented Scheduler on Maximo
- Rolled out VantagePoint Historian Front-End solution for SCADA trending, reporting and data retrieval.
- Worked with downtown IT and migrated WWTP servers and workstations to ActiveDirectory.
- Migrated existing SCADA ActiveDirectory catalog from Server 2003 to Server 2008R2.
- Upgraded O.R. Scale workstation.
- Created new Data Concentrator for Radio Master located on top of the CCB to improve data retrieval and control from RTUs in liftstations and CSO control valves.
- Installed a weather station as a safety measure in the unlikely event of a chemical leak.
- Integrated the DO project with the existing HMI system
- Upgraded MySQL database server to version 5.5 and migrated from Slackware Linux to Scientific Linux
- Upgraded SCADA HMI system from v 7.5 to 7.6 and began preparation for end-of-life replacement.
- Performed a security penetration test on the SCADA network.
- Upgraded VantagePoint server from v4.0 to v4.5 to v5.0
- Upgraded the SCADA network's NTP server to retire 13 year old hardware.

XI. FINANCE

Finance is measured at its best with Key Performance Indicators. They are as follows:

Total Expenses for O&M WWTP Budget (Dollars)

\$13,039,083

Total Gallons Treated at WWTP (Billion Gallons)

11.203

Cost of Operating WWTP (Dollars per Million Gallons)

\$1,163.00

DEPARTMENT OF PUBLIC WORKS
TRAFFIC AND LIGHTING, STREETS, AND SEWER
DIVISIONS

Division of Transportation

The Division of Transportation is comprised of three Bureaus: Streets, Sewers and Traffic & Lighting. Some of our divisional highlights for 2013 are:

- We facilitated city wide emergency recovery operations for storm events in June and November, coordinating multiple divisions within the DPW as well as elements of the Parks & Recreation Department.
- We expanded the O'Brien Center's parking lot in coordination with Parks & Recreation.
- Significantly revitalized the Sewer Insurance Program, formalizing the governing policy through the Board of Public Works.
- Installed the first bicycle green conflict warning zone on Jefferson Avenue to warn motorists and bicyclists of possible conflict with crossing or merging traffic streams.

Bureau of Streets

The core functions of the Bureau of Streets are as follows:

- Remove snow and ice
- Street sweeping
- Street pavement maintenance
- Maintain alley ways
- Fall leaf pick-up
- Collection of discarded Christmas trees.

Street Pavement Maintenance:

The Bureau of Streets conducts pavement maintenance through a variety of means and methods, addressing various pavement distress conditions with a mix of fixes to maintain the overall conditions of the streets within the City.

- Pothole patching: This past year, we addressed potholes in the fall, winter and spring seasons using a total of 445 tons of patch material
- Crack sealing: In order to preserve our pavements and extend their useful service life, we aggressively work to inhibit deterioration of pavement through sealing of crack forming in the surface of the pavement. In 2013 we crack sealed 104 lane miles of pavement.
- Pavement patching: We typically contract large scale pavement patching, utilizing an infrared pavement heating method which provides the City a longer lasting pavement patch. In 2013 we patched 52,796 square feet of pavement.
- Pavement rehabilitation: The Bureau of Streets had the ability and equipment to rehabilitate pavement through milling and resurfacing of the street. We utilize a variety of different asphalt materials, matching the pavement type with traffic conditions, existing pavement condition to develop the best rehabilitation for the longest service life. In 2013 we rehabilitated 24 lane miles of streets.

Alley Maintenance:

This is a daily function performed on a weather permitting basis. Road grading equipment is dispatched to designated areas, or to respond to work orders for repairs from residents. The crews scarify the existing surface and redistribute the aggregate to establish a uniform and level surface. On alleys that experience excessive deterioration, crews perform base stabilization. This is a process of adding recycled asphalt pavement (RAP) to the existing aggregate and applying a material known as Earthbind. Earthbind is 100% environmentally safe and is designed specifically to bond and strengthen aggregate. A total of 1507 blocks of alleys were graded or treated to eliminate water holes and improve drainage and eliminate flooding problems to adjacent properties.

Fall Leaf Pick-up:

From October 28th through December 6th, we were devoted primarily to the leaf pick-up program. During this time period, there were approximately 44,324 cubic yards of leaves collected and hauled to Organic Resources. This past year (2013) was the 25th year the City has enforced a ban on burning leaves. ReLeaf was conducted with assistance from the Parks and Recreation Department as well as the Bureau of Sewers, as well as 20 temporary employees. Despite the combined efforts in 2013, ReLeaf was not completed this year due to significant snow fall starting as early as November 11th this past year.

Christmas Tree Pick-Up:

The month of January is traditionally devoted to plowing, salting and patching operations with time allowed to pick-up discarded Christmas trees. In 2013 we picked up 1984 trees.

Street Sweeping:

Street Sweeping is a significant core function for the Bureau of Streets. Keeping curb lines free of leaves, debris and garbage significantly reduces the amount of street material entering the sewer system. In 2013 we swept 9,355 miles of curb line approximating to over six full sweeps of the City throughout the year.

Bureau of Sewers

(John Pemberton Sr)

The core functions of the Bureau of Sewers are:

- Sewer Maintenance
- Sewer Construction
- Concrete Patching
- Curb & Sidewalk Program
- Sewer Insurance

Sewer Maintenance:

This is a collection of preventive maintenance programs that clean and inspect the 527 miles of sewer lines within the City as well as outside the city limits where we also take ownership of the sewer lines. These preventative maintenance programs are:

- Sewer cleaning: In 2013 we cleaned 179.6 miles of sewer
- Manhole/catch basin/inlet cleaning: In 2013, we cleaned 4560 structures
- Sewer inspection: We inspected 64.1 miles of sewer lines with CCTV.

As part of sewer maintenance, we also contract sewer and manhole rehabilitation work. In 2013 19,696 feet of sewer lines were lined with cured in place linings and 338 manholes were rehabilitated with cast in place concrete linings.

Sewer Construction:

This crew's responsibilities include sewer main repairs, catch basin repairs, manhole repairs, and catch basin & manhole adjustments for the street paving program. A combination of maintenance and construction employees keep the retention and detention basins in the City cleaned and the grass mowed for the year. Clyde and Bowman Creeks, which run through the City, must also be cleaned and maintained by this crew. We also perform periodic checks on all grates and areas that collect debris.

Concrete Patching:

This crew works with all City departments to fill any pavement cut that was made to repair existing underground utility systems. This patching program includes water cuts, sewer cuts, street cuts, and other miscellaneous concrete cuts.

Curb & Sidewalk Program:

The Curb & Sidewalk program replaces curb and sidewalks throughout the city at a first come, first serve basis. In 2013, the program replaced 2,910 feet of curb and 2,488 feet of sidewalk over 42 properties throughout the City.

Sewer Insurance:

The Sewer Insurance program is responsible to authorize and inspect work done, under our insurance program, to home owner's lateral lines

Bureau of Traffic and Lighting

The Bureau of Traffic and Lighting's core functions are:

- Follow all City and State regulations according to the Indiana Manual on Uniform Traffic Control Devices (INMUTCD). This includes:
 - All line striping of designated streets, crosswalks and stop bar locations,
 - Installation, replacement and repair of all signs on public rights of way
 - Works with our DPW partners on the set up and removal of traffic control for planned repairs, construction, and emergency repairs in order to maintain traffic safety in construction areas.
- Service and maintain all traffic signals within the city. We also have contracts with the State (INDOT) and Saint Joseph County to maintain and repair their signals.
- Maintain street lighting, decorative lighting, Historical District lighting, selected street lighting in industrial areas, and a small number of county owned street lights.

Traffic Operations:

In 2013 all of the longitudinal pavement markings in the City were repainted (over 180 miles of line painting). We also installed or repaired 1094 signs, 111 street name signs, and 293 informational, regulatory and warning signs. Our Sign Shop designs and produces specialty signs for other City departments and outside entities. This year we made over 1250 specialty signs, banners, and posters for community events. To provide assistance to the South Bend police department for traffic control, we delivered 377 cones and 85 portable signs for each of the six Notre Dame home football games.

Traffic Operations also assisted in traffic control for special events such as the Sunburst marathon, miscellaneous parades, and specialty walks. We delivered cones to block off streets for 33 run/walk events, 9 festivals, 9 parades, 7 motorcycle rides, and 8 bike events. Plastic A-frame type barricades are also used since they are more durable, easier to handle, and comply with any safety standards required. Traffic Operations also set up detour routes for over 64 locations, to assist in utility repairs, street repairs, and special events on high volume streets

Lighting Operations:

In 2013, Lighting Operations responded to over 285 service calls pertaining to malfunctioning traffic lights. As an added precaution, inspections on city signalized intersections & flashers are performed twice a year. Inspections include checking all type heads and lenses, and also checking for loose wires, mounting brackets, and the proper operation of the systems. This is done for the safety of motorists and pedestrians. Approximately 340 inspections are performed annually.

Inspections are performed four times per year on 120 signalized intersections and 14 flashing intersections for the state and county. For the past few years, the city was contracted by INDOT and St. Joseph County to maintain their signalized intersections and flashers. We are paid per contract for services rendered and materials used. Inspections are similar to city specifications which include checking all type heads and lenses including L.E.D., and also checking for loose wires, mounting brackets, and the proper operation of the systems. Approximately 536 inspections are performed per year for INDOT and St. Joseph County.

Lighting Operations also provides repairs to lights on an as needed basis. There are 2711 streetlights throughout the City. Due to the growth of our City, more lights are being added each year. Other maintenance performed includes the repair and replacement of lamps under city viaducts.

Summary:

Streets:

1. Street / pothole patching: tons of cold mix placed = 445 Tons
2. Infrared patches (by contract) =1,104 (52,796 sq feet of patching or 7.5 lane miles)
3. Miles of streets milled & resurfaced = 24 lane miles
4. Crack sealed 10.4 lane miles of pavement (1349 gallons of material used)
5. Blocks of alleys graded = 1507
6. Street sweeping = 9355 miles
7. ReLeaf = 44,324 cyd of leaves

8. Christmas Tree Pickup
9. Storm Damage Cleanup Response: two major responses (June and November)
10. Snowfall for 2013:
 - January = 12"
 - February = 26"
 - March = 12"
 - November=9
 - December =7"
 - 66" total in 2013

Sewers

1. Sewer lines cleaned = 179.65 miles
2. Manholes/inlet/catch basins cleaned = 4,56 structures
3. Sewer lines inspected = 64.10 miles
4. Concrete placed and finished = 1536 cyd (includes utility patches)
 - a. Includes 2910 feet of curb and 2488 feet of sidewalk in the curb & sidewalk program over 42 properties
5. Sewer lines rehabilitated=19,696 feet
6. Manholes rehabilitated= 338

Traffic & Lighting

1. Refreshed all longitudinal pavement markings within the city (~180 miles of lines)
2. Traffic signs installed/repared = 1094
3. Street Signs installed/repared = 111
4. Regulatory sings installed/repared = 293
5. Responded to over 285 service calls related to streetlights

DEPARTMENT OF PUBLIC WORKS

SOLID WASTE DIVISION

Division of Solid Waste

Solid Waste collected refuse from 32,000 customers a week, every week, throughout the year. The extra pickup program received 11,203 requests and 4,432 were for the free item once a month collection.

We handed out over 5,000 paper bags for the yard program to help eliminate plastic bags in the Organic Resources facility.

We also partnered with the City of South Bend Unity Garden program and held four informational programs on how to properly mulch, compost yard waste, and how to build composting bins.

2013 was a pivotal year for Solid Waste in terms of the technology that is used to facilitate our operations. In 2013 we ordered and took delivery on the first compressed natural gas (CNG) fueled waste collection vehicles. We also have expanded our technology with the ELEMOS collection system that reads embedded radio frequency tags in the trash bins to help assist in collecting and managing what customers have been serviced.

DEPARTMENT OF PUBLIC WORKS

ENGINEERING DIVISION

2013 ENGINEERING PROJECTS:

Diamond Ave Storm Sewer Separation Phase 3

Completed the third and final phase of the Diamond Avenue storm sewer. This project separated 280 acres from the combined sewer system. The project was designed by Troyer and constructed by Woodruff and Sons. This phase had a construction cost of \$2,600,000.

East Bank Storm Sewer Separation Phase 4

Selge Construction completed the construction of Phase 4 of the East Bank Storm Sewer master plan at the cost of \$2,500,000. This project separated 83 acres from the combined sewer system. Since 2011 the city has separated 230 acres in the East Bank area.

St. Joseph River CSO / Bank Stabilization

The city initiated an engineering study to look at the potential of construction a liner storage tank along the river bank of the St. Joseph River.

Fire Station 5

Engineering assisted in the design and construction inspection of the demolition of the existing and the construction of the new station. Fire Station 5 is located on State Road 23 and Prairie Avenue.

Fire Training Center

The Fire Department is currently building a state of the art training facility to better train city and other public safety personnel. This facility includes class rooms, six story training tower and two story burn building. Engineering is overseeing the construction inspection of this project.

Five Points

Worked with INDOT on the construction phase of the State Road 23 widening from Typ and Coapo. As part of this project a new multi use path was installed to allow improved connection with existing and future bike lanes and trails.

Main / Lafayette Connector

Working with Community Investment, Main Street and Lafayette Streets were realigned at the new Barbie Street intersection. This project will allow for better access from Ireland Road to Chippawa. Work also included the installation of some new storm sewer and signal interconnects. Lawson Fisher designed the project and Reith Riley was the general contractor .

Other Projects:

- Rushton
- Emergency Elevator Repair Century Center
- Crooked Ewe Sidewalk Improvements
- Memorial Hospital Parking Lots Phase 3
- Parking Garage Light Upgrade
- Century Center Interior Lighting
- Citizen Bank and Trust Studebaker Plaza
- Demolition of 910 and 912 South Lafayette
- East Race Floating Dock Replacement
- East Race Dock Erosion Repairs
- Removal and Disposal of PCB containing Equipment at Ivy Tower

South Bend Water Works

2013
Annual Report

Water Services

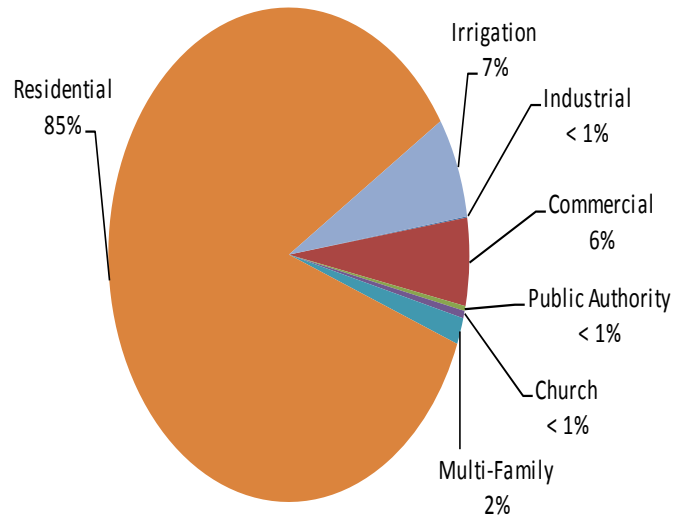
Water	
Service Area Population	120,000
Service Area Square Miles	106
Number of Miles of Water Mains	584
Number of Wells	30
Number of Reservoirs	4
Number of Production Facilities	9
Number of Booster Stations	5
Capacity (MGD)	60
Average Daily Flow (MGD)	16
Peak Flow (MGD)	30
Number of Services ¹	42,917



¹ The number of active meters

Active Water Meter Class Count

Class	Meters
Industrial	38
Commercial	2,465
Public Authority	136
Church	207
Multi-Family	748
Residential	36,495
Total Metes	42,917

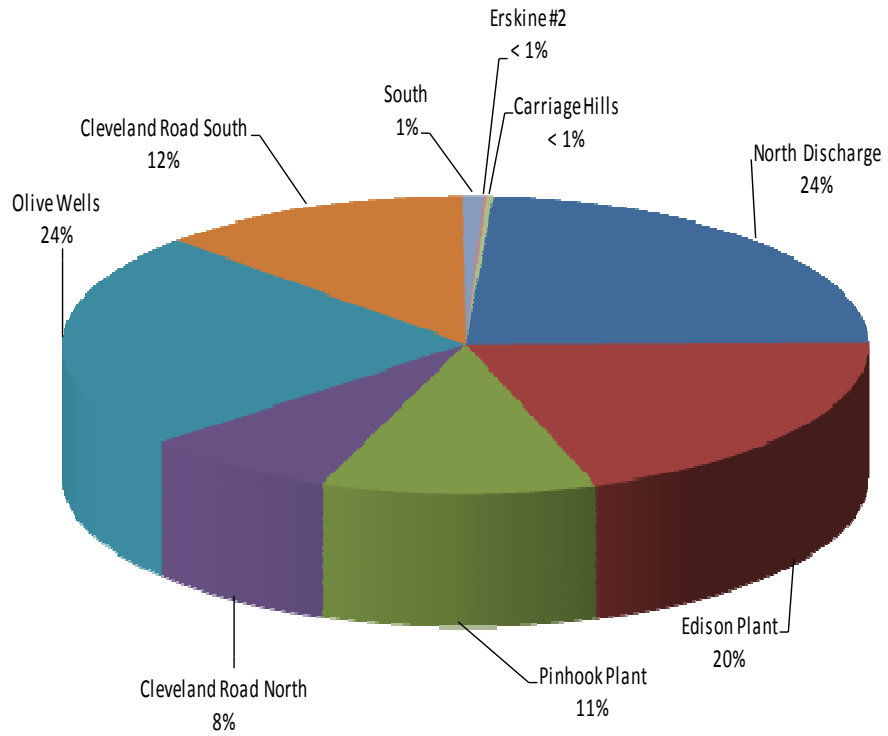


SOUTH BEND WATER WORKS PUBLIC WATER SUPPLY ID NO. 5271014

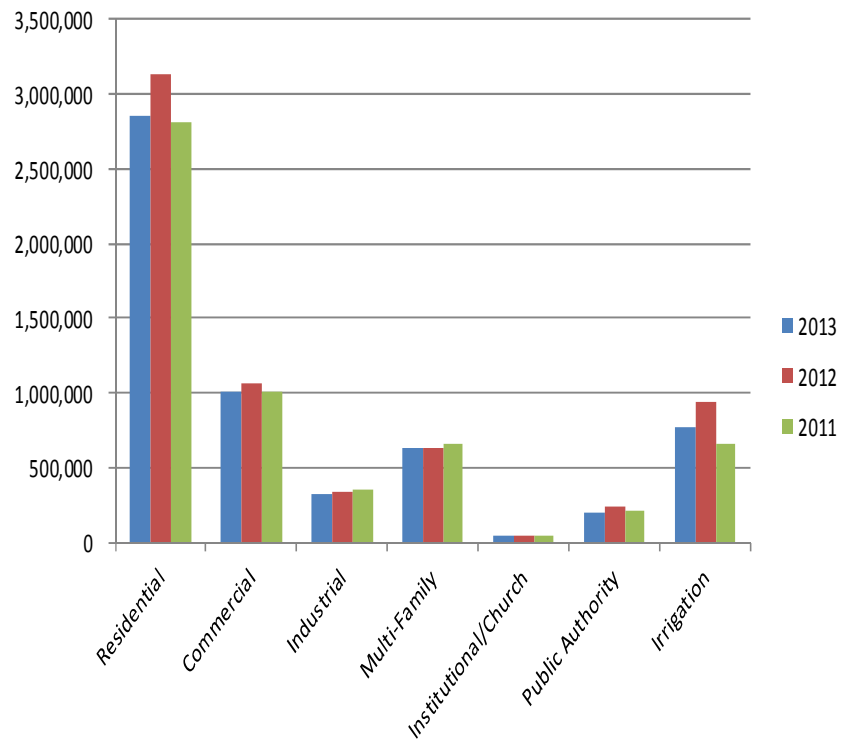
North Station Report for the Year 2013

Stations	Total Pumpage (1,000 gallons)	Kilowatt Hours	KMN04 Gallons	Chlorine pounds	Fluoride gallons	Phosphate gallons	Peak Pumpage Day (1,000 gallons) 8/28/13	Lowest Pumpage Day (1,000 gallons) 01/01/13
North Wells	1,706,035						9,120	1,068
North Discharge	1,322,393	2,183,399	7,575	39,309	5,237	0	6,800	1,068
Edison Park Wells	1,141,854	463,300					7,420	0
Edison Plant	1,119,102	982,500	0	30,343	3,083	0	7,312	0
Pinhook Wells	636,782						0	3,645
Pinhook Plant	615,464	1,041,320	2,649	18,849	1,629	0	0	3,543
Cleveland Road North	435,810	100,120	0	5,669	1,255	12,775	780	2,288
Olive Control Room		670,492						
Olive Wells	1,328,423	1,589,360	0	10,821	3,887	0	6,519	2,946
Cleveland Road South	706,156	782,600	0	6,966	1,807	14,493	4,150	0
South	44,578	701,280	0	1,224	203	0	1,005	0
Rum Village								
Erskine #2	8,113	37,400	0	91	32	226	331	0
Carriage Hills	14,569	82,800	0	294	28	1,308	246	0
Ireland 3.5 mg Standpipe	165,979						1,785	0
Fellow Street	813,079						2,689	1,907
Booster Totals	979,058	682,560	0	0	0	0	4,474	1,907
Totals	5,594,608	9,317,132	10,224	113,566	17,161	28,802	27,143	9,825
2013 Average Pumpage per Day (1,000 gallons)		15,328	Previous Year Peak Pumpage Day (1,000 gallons)				29,882	
Amount Pumped, Compared to prior Year (1,000 gallons)		(464,226)	Previous Year Low Pumpage Day (1,000 gallons)				9,939	

Total Pumpage (in 1,000 gallons)



Billed Consumption (CCF's) by Year Water and Sprinkler



Statement of Revenue and Expenditures

Fiscal Year Ending December 31, 2013

	2013	2012	% of change
Revenue			
Charges for Services	14,981,858	15,309,552	
Interest Earnings	38,781	40,607	
Other income	107,421	841,001	
Total Revenue	15,128,060	16,191,160	(-6.57%)
Expenditures			
Personnel	4,107,455	4,064,045	
Supplies	965,196	735,227	
Services	5,975,623	5,581,897	
Debt Service	2,053,240	1,647,540	
Capital Improvement	604,851	1,010,177	
Total Expenditures	13,706,365	13,038,886	5.12%
Net Surplus	1,421,695	3,152,274	

Meter Service, Construction, and Maintenance

Meter Service	2013	2012
Total Service Calls	44,895	37,927
Service Starts	6,816	6,780
Service Outs	5,986	6,026
Large Meters Tested (failure rate)	234 (19%)	246 (20%)
AMR Units Installed	10,120	7,308
Backflow Certification Tests	1,995	2,180
Water Shut-Offs	8,895	6,532



Badger Orion

Meter Service, Construction, and Maintenance (cont'd)

Service Leaks – Insurance Fund Account	2013	2012
Leaks	594	572
Stop Box Repairs (In-house)	456	358
Stop Box Repairs (Contractual)	47	111
Main Leaks	2013	2012
Northeast	15	16
Northwest	20	18
Southeast	20	16
Southwest	25	18
Total	80	68

Meter Service, Construction, and Maintenance (cont'd)

Hydrants	2013	2012
Replaced Hydrants	38	24
Maintenance	82	46
Hit (Accidents)	46	37
Painted	1566	1856
Valves	2013	2012
Taps - 1" thru 12"	42	62
Installed (new)	3	19
Demolitions & Dead Services	247	308
Locates	5790	5708



Clow 2500

Authorized Water Consumption (in gallons)

Total Pumpage:	5,594,609,000
Authorized Water Consumption:	
Billed metered	4,349,901,996
Unbilled metered	68,826,308
Unbilled unmetered	94,532,873
Total	4,513,261,177

Water Loss Performance Indicators

- * **Inefficiency of water as a Resource**

$$228,507,684 / 5,594,609,000 = 4.1\%$$

- * **Infrastructure leakage index**

$$228,507,684 / 151,054,443 = 1.51$$

- * **Nonrevenue water (losses plus authorized unbilled)**

1,244,707,004 gallons

- * **Nonrevenue by volume**

$$1,244,707,004 / 5,594,609,000 = 22.25\%$$

DEPARTMENT OF PUBLIC WORKS

CENTRAL SERVICES DIVISION

The Central Services Division is one of the divisions that make up the Department of Public Works. The Division consists of six cost centers that provide a variety of services to other City departments along with several Local County, State, and Federal agencies. Each cost center is internally funded by fees charged for the services provided, which means the division is run much like a business. Each cost center must generate revenue's to cover the cost of operation, yet be competitive with the outside market. We compete with other service providers in the area for business from other Local Government Agencies in an effort to increase our revenues.

The six service centers are: Equipment Services, Print Shop, Central Stores, Radio Communication, Centralized Building Maintenance, and the Municipal Energy Office. Equipment Services provides the management and maintenance for 1,100 plus pieces of equipment with a value of \$40 million. The diversified fleet consists of a wide variety of equipment from small engine equipment to heavy construction equipment such as loaders and graders. This group is also responsible for managing all aspects of purchasing, owning and disposal of City vehicles and equipment. For 2013, Equipment Services provided services to outside agencies which produced over \$134,000 in additional revenues.

Print Shop/Central Stores; The Print Shop provides printing services to all City departments. Our internal policy requires all printing requests to come to the Print Shop, our Print Shop personnel will then determine the most cost effective method to provide the service. User department employees no longer have to spend valuable time shopping for printing services and can be sure they are getting the best price. Print Shop services provided to outside agencies produced \$2,500 in additional revenues. The Central Stores operation provides a wide variety of paper products, janitorial, and first aid items to City departments at a cost savings through volume buying. Along with cost savings, the Stores operation also delivers items ordered from inventory. This again saves the user department's valuable time.

Radio Communications provides all necessary services to operate and maintain the City's fifteen (15) two-way radio communication systems. Included in these services are the 911 Emergency Dispatch Center, base stations, repeater systems, mobile and hand held units. The

Radio Shop is also responsible for the installation, maintenance and removal of two-way radios, emergency lighting, and equipment used in many City vehicles. Services to outside agencies in 2013 produced \$12,000 in additional revenue.

Our Building Maintenance operation provides facility maintenance for our Sample Street location, the two City owned fueling islands, and eleven Fire Stations. Our services provided these areas with savings in labor costs over outside vendors.

Our office personnel are cross trained in various tasks so we can continue to provide quality customer service during peak periods and employee absences. Through team work, forms and spreadsheets were revised and job duties rearranged to help improve both quality and productivity. These duties include, but are not limited to: monthly billings for services, fuel purchasing/inventory and auditing transactions, budget preparation, equipment maintenance records, vehicle financing, etc. We also provide licensing services to all taxi cab companies and taxi drivers. For 2013, we filed with the State of Indiana and received \$21,230 in refunds for taxes paid on fuel purchases.

The Central Services Division is committed to providing quality products and services at a cost savings to our customers. The services we provide allow other City departments, Police, Fire, Water, Street, Park, etc. to make South Bend a great place to Live, Work and Play.

Please see the individual reports for more details.

Our 2013 Accomplishments:

- *Decreased electrical energy use by 40%.
- *Purchased 2 additional CNG powered vehicles.
- *Provide a fleet availability of 98%.
- *Produced \$135,000 in additional revenues.

Our Goals for 2014:

- *Have a Vehicle Policy adopted to include fuel savings and alternate fueled/Hybrid vehicles purchasing initiative.
- *Add a minimum of one new customer in Radio, Print Shop, and Equipment Services to increase revenues.
- *Reduce our overall energy usage by 15%.
- *Provided automated vehicle locator (AVL) upgrade analysis to the administration.

Equipment Services Report

The Mission of Equipment Services:

We are a dedicated provider of quality and economical services to our customers.

Equipment Services is the largest of five cost centers that make up Central Services Division. Equipment Services is an internally funded department that is responsible for purchasing, maintaining, and fueling the City of South Bend's fleet of 1,127 pieces of equipment. The City owned fleet is made up of a large variety of vehicles and equipment including police cars, fire trucks, medic units, dump trucks, Solid Waste trucks, heavy equipment such as front end loaders, backhoes, pavers, and asphalt rollers. Along with this responsibility, we also maintain and repair equipment for several external customers.

Our main goal is to maintain the City fleet so it is always available for the user departments and to keep downtime to a minimum. By establishing and conducting a good preventative maintenance program, we accomplished our goal of 98% fleet availability while preserving South Bend's major capital investment in fleet. In 2013, we completed more than 2,451 preventative maintenance services which consist of a 70 point inspection providing vehicles that are safe, reliable, and environmentally sound.

Equipment Services provides behind the scenes support for all City departments large and small, this is accomplished by operating two facilities. Our main site is located at 1045 West Sample Street. The administrative staff consisting of the Director, Fleet Manager, and two Financial Specialists are located at this facility as well as three Supervisors, seventeen Technicians, three Parts Clerks, and a Parts Chaser.

Hours of operation are from 6:00 a.m. to 12:00 midnight Monday thru Friday March through November, and 12:00 midnight Sunday till 12:00 midnight Friday December through March. We also provide 24 hour on call Supervisors and Technicians to cover Fire Apparatus emergency repairs during after hours, weekends, and holidays. Equipment Services personnel including seventeen Technicians and three Supervisors are on a rotating stand-by status during the winter months to repair vehicles essential to snow removal. This facility is approximately 47,000 square feet and includes a 10,000 gallon indoor pump testing bay to pump test fire apparatus on an annual basis.

Our satellite operation is located at 3113 Riverside Drive which is staffed by a Supervisor

along with four technicians. Their hours of operation are 2:00 p.m. to 10:00 p.m. Monday thru Thursday, and 10:00 a.m. to 6:00 p.m. on Friday. At this facility we maintain all Solid Waste, Waste Water, and Organic Resources equipment.

Equipment Services encourages Technicians to become ASE (Automotive Service Excellence) and EVT (Emergency Vehicle Technician) Certified. We currently have five technicians with a double master (Automotive and Heavy Truck) and six single masters, four with Heavy Truck and two with Automotive and several others that have single certifications. With the diversity of the City fleet, Equipment Services provides training for Technicians. Some of the training is simple refresher courses on brakes and drivability and yet other training is more specialized like air conditioning and transmissions.

Equipment Services is responsible for all City Vehicles from cradle to grave. We start this process by writing specifications for all equipment which is then advertised on the City of South Bend web page and various newspapers. Bids and quotes are reviewed and a recommendation is given to the Board of Public Works to purchase the equipment that meets the Cities needs, from the lowest most responsive and responsible bidder.

In 2013, we purchased 97 vehicles and assorted equipment at a cost of \$6.1 million. The new unit is first checked to make sure it meets specification, then any warning lights or two-way radios are installed along with graphics to mark the unit and any other necessary add on equipment, it is then placed into service. Detailed financial records are kept to show what each vehicle costs per hour or mile to operate. These records are reviewed to determine when it's too costly to retain the unit and time to replace by trade or auction.

In addition to City vehicles we provide services to Memorial Hospital, South Bend Housing Authority, Du Comb Center, along with Liberty Township, Madison Township, Penn Township, Osceola, and Notre Dame Fire Departments. By providing services to outside customers, we were able to produce additional revenue in the amount of \$134,000. Many City departments are supported by tax dollars from the General Fund while others are revenue generating like Sewer, Solid Waste, and Water. Equipment Services is an internally funded Division which means our user departments pay for the services we provide. A study was done to analyze our cost of operation including wages, benefits, and building operation (lights, heat, etc.). Then we formulated a billing rate along with a mark up for parts that would cover these costs.

Another aspect of our operation is distributing fuel to the City Fleet. This service is provided at three locations; one at 701 West Sample, one at 3113 Riverside Drive, and the third is at 4340 Trade Drive. In 2013, we distributed 860,000 gallons of fuel.

Equipment Services has an in house parts department that is staffed by a Supervisor, three counter people, and a part time parts chaser. We have over 6,000 items in stock with a total value of approximately \$540,000. This inventory is essential for completion of repairs to vehicles in a timely fashion.

In 2013, we purchased 4 Solid Waste trucks that run on CNG (Compressed Natural Gas). We also have one Police car that was converted to run on both gasoline and CNG. We also purchased 4 more hybrid cars. These hybrids along with the dedicated CNG trucks and the dual fuel cars are going to help reduce fuel consumption in the City of South Bend.

2014 Goals:

1. Continue to purchase dedicated compressed natural gas vehicles and convert part of the fleet to dual fuel.
2. Continue purchasing more hybrid vehicles.
3. Continue to look for ways to shrink aerosol usage in the shop.

Print Shop / Central Stores

Print Shop

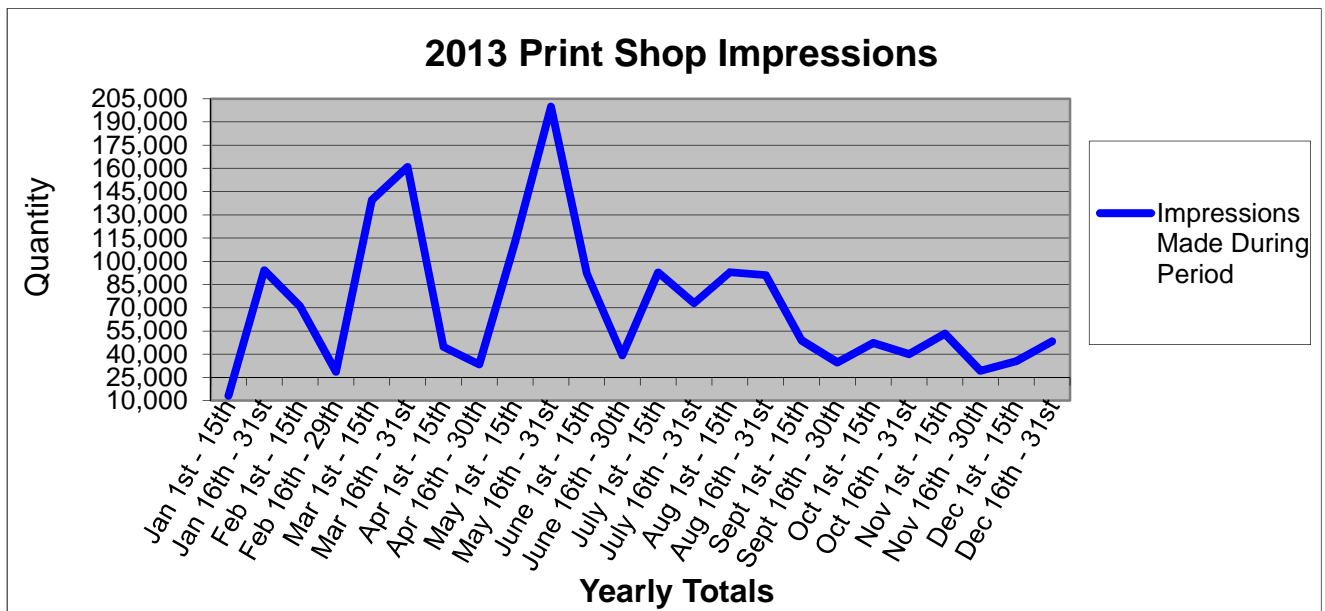
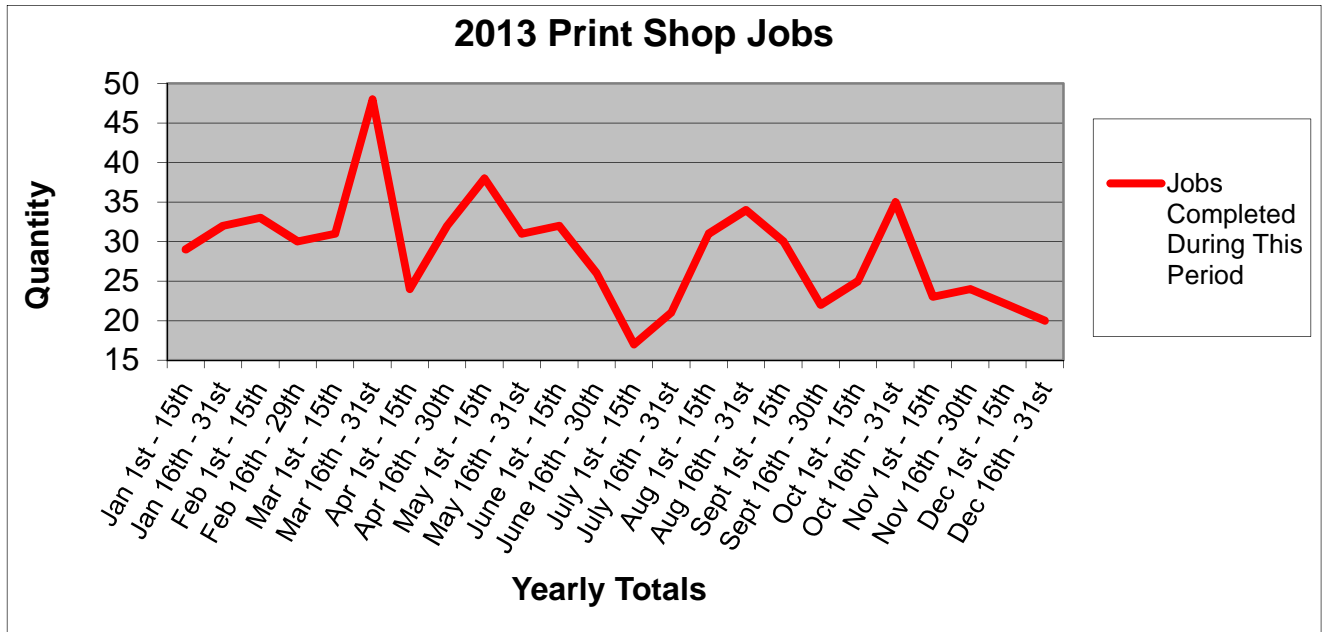
The City Print Shop provides printing services and graphics design layouts for city departments. Two digital duplicators, a high speed color copier, and design software are the tools that help turn ideas into professional reports, programs, posters, and flyers. The allocated budget is funded from each user department. Internal user departments are billed for supplies only for each job performed. Jobs are created and electronically filed for future use. Graphic logos and design layouts are created in simple to complex file styles to allow for multiple uses. The design and layout is no additional cost to user departments which is not the case for work done on the outside. Our office has one full time employee and 25% of a supervisor's salary that is split with two other service sections within the Central Services Division.

In 2013, the digital duplicating machines are in the third year of operation and have reduced operating supply costs approximately \$3,000 annually (\$15,000 plus for the life of the

machines). The high speed color copier is a cost efficient way for departments to apply a professional look to projects. Funds for the duplicating machines and color copier are paid through the budget allocation with a multiple year lease plan. All three machines are leased into the 2015 budget year.

Job requests are common between user departments with business cards, letterhead, envelopes and departmental forms. All files are stored for easy format changes and proof copy printing. Along with common job orders, many job requests are printed for a one- time event. The Morris Performing Arts has advertising inserts, flyers, and posters for each performance. The Bistro menus are printed for specific programs and dates. Police and Fire departments have candidate applications, training manuals, certificates, and other specialty forms. Water Works forms, door hangers, and applications were also prepared during this period of time. The CAFR report and executive summary are printed annually for the controller's office. Parks & Recreation has several programs, flyers, brochures, booklets, manuals, fitness passes, and golf passes. Although the water billing insert is printed and mailed by an outside agency, the Print Shop will continue to design the layout monthly for an electronic version.

In 2013, the Print Shop processed 690 job orders consisting of 1.7 million copies. (760,000 impressions less than in 2012 – SB Newsletter partial runs and outsourcing of the Water Billing to a mail service) Our goal is to complete job requests on time (within 3 to 5 business days – 99.5% goal). The job requests were completed at a rate of 98.99%. Our office billed five outside agencies, which generated \$2,213 in revenue. (One outside agency was added this period meeting our 2013 goal.)



In 2013, The Print Shop has analyzed services and added one new service that was currently going to an outside vendor. (logo design of the new 311 Service Center).

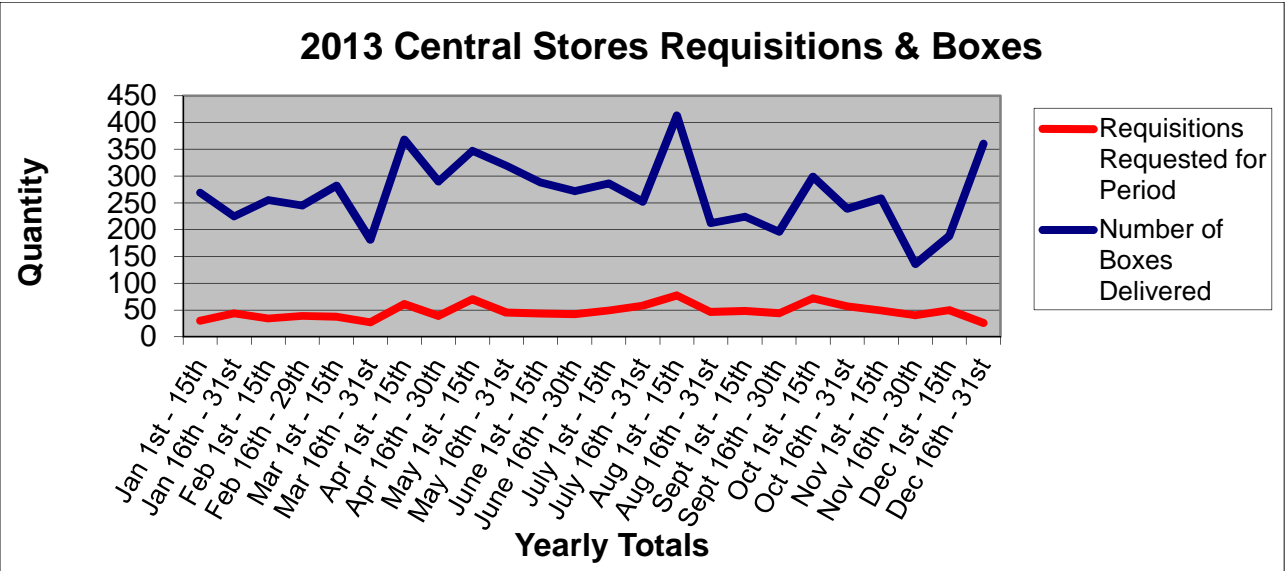
The Print Shop technician completed three (3) software training certificates in Adobe Photoshop techniques, and Photoshop Mastery totaling 13.5 hours. The superintendent

completed one half (50%) of a software training certificate in Adobe InDesign CS6 Essential Training totaling 4 hours during this period.

Central Stores

Central Stores provides City wide cost savings of products and goods through volume buying of common items such as paper products, janitorial, first aid and safety items. Bulk products are purchased by the bid and quote process. Our office is dedicated to providing the most cost efficient product at the lowest cost available. Central Stores has an internal budget that is funded through an allocation from each user department. The office has one full time employee and 25% of a supervisor's salary that is split with two other service sections within the Central Services Division.

In 2013, Central Stores processed 4,946 transactions totaling \$206,409. 3.26% of City purchase orders are processed for bulk buying, which speeds the process of customer receipt. Our goal for 2013 was to complete deliveries by the next business day (99.5% goal). The job completion rate for on time deliveries for Central Stores in 2013 was 99.9%. The total job requisitions were 1,127. 6,404 boxes were delivered for printing jobs and Central Stores orders (including all janitorial supplies to all fire stations).



The Central Stores supervisor organizes and compiles all general janitorial supply needs for the City. The janitorial supply bid is placed once a year for a 12 month period from July through June of the following year. Copy paper is purchased at skid prices and sold by the case or ream to user departments. Bulk tee shirt ordering for union employees is quoted in early spring. First aid supplies are quoted in the spring with pricing carried through to the end of the year. Safety supplies consist of traffic vests, ear plugs, safety glasses, work and medical gloves. The medical gloves are purchased on a bulk buy order and shipped directly from the factory with free shipping on orders.

In December 2013, the Central Stores acquired the office supply ordering accounts. The overhaul of the Officemax program has continued through 2013. Office supply orders (164 for 2013) are checked and approved by the Central Stores Supervisor. The updating of contract and general items continued to be a challenge with the absence of a vendor representative for most of the year. (3 more departments use the online ordering system on a regular basis)

The Store redistributes used furniture including tables, chairs, file cabinets, and desks to city departments who need replacement furniture, which can eliminate buying new furniture. The delivery route continues to be a four day full service Monday through Thursday with a limited route on Friday. The Friday Green Day provides limited interoffice mail delivery and emergency orders while reducing the route by 50%.

The superintendent completed one (1) software training certificate in Microsoft Excel 2010 Essential Training totaling 6 hours and one (1) Leadership Course (Building the Public Sector) which is ongoing.

2013 goals: Reorganize for centralized purchasing and distribution of office supplies. Result: 164 Office Max order approvals for departments, approximately 140 items added to contract through online ordering, and 7 new users added to the ordering system.

Increase by 5% the number of small quantity items available from Stores.

Result: Based on 154 items (12 new items) 7.79% increase for office supplies.

Radio Communications

The general duties and responsibilities of the South Bend Radio Services can be summarized as *"providing the installation, maintenance, and purchasing for the City's two-way radio systems."* Every resident of the City relies on the radio communications systems to be operational. Each member of Radio Services takes this responsibility seriously and works hard to provide the level of service and quality expected by our residents.

Radio Services is responsible for supporting the following City of South Bend departments:

- South Bend Police
- South Bend Fire
- Emergency Medical Services
- Building

- Code Enforcement
- Engineering
- Environmental Services
- Park
- Street
- Water

Radio Services also generated over \$12,000 in additional revenue by providing services to the following outside agencies:

- St. Joseph County Highway
- Kroc Center
- St. Joseph County Jail

South Bend Radio Services is staffed by 2 technicians and 1 working manager. Our department has a combined total of 77 years of experience in both the civilian and military work environments. Each staff member holds an FCC license. This license is required to service the communications equipment used by the City of South Bend. Additional training and credentials includes successful completion of Motorola Training Academies, online radio systems training, FEMA courses, NIMS training, IDHS training, and Department of Defense security clearances. Our department has one technician on call 365 days a year.

Our services to the community go beyond normal daily maintenance and repair of equipment for departments such as the 911 Dispatch Center. Included is the responsibility to provide information to department managers that will be used for the long term planning of our communication systems in order to better serve the community as we continue to grow in the future. It is our responsibility to apply for and maintain all radio licenses required by the FCC. Currently the City of South Bend has 29 different licenses in use. Radio Services completed 64 new vehicle installations in 2013. Please see the attached table to reference the quantity and types of equipment serviced by Radio Services.

A major project for Radio Services this year was the rebanding of all 800MHz radios. Rebanding was required because Sprint Nextel's nationwide push to talk network caused harmful interference with public safety communication systems. The Federal Communications Commission mandated that all users of the affected channels move to new channels and Sprint Nextel pay for this to be accomplished. The State of Indiana recognized very early in this project that each agency using the Indiana Project Hoosier SAFE-T network would have to devote numerous hours to assist with this project and should be compensated accordingly. The State of Indiana successfully negotiated user agency compensation in their contract with Sprint Nextel. This project consisted of programming and testing 407 portable radios and 248 mobile radios. This project generated \$30,365 in additional revenue.

If at any time you have any questions regarding the services being provided, comments or suggestions for changes, requests for additional services, or just want to let us know how we are doing, please contact the Department of Central Services.

Building Maintenance

Our Building Maintenance operation provides maintenance functions at Central Services, along with the eleven (11) Fire Stations. We also provide building maintenance repairs at our Riverside Garage, along with repair and maintaining of fuel pumps at our three (3) locations, 701 West Sample Street., 3113 Riverside Drive, and 4340 Trade Drive. Building Maintenance personnel consists of a Building Maintenance Manager, Maintenance Foreman, General Laborer, and a part time summer help employee.

The Building Maintenance Manager oversees and directs our maintenance personnel, inspects the building and grounds for problems or conditions and takes remedial action if

necessary, estimates labor, material costs, and maintains records of repairs and accountability, assists with repairs, grounds keeping and janitorial to make sure dead lines are met. We work together as a team to provide the best possible services for the City of South Bend. As well as Building Maintenance operations, he assists our garage by being on call one week a month supervising mechanics in mechanical repairs of City owned equipment.

Our Maintenance Foreman's responsibilities involve similar duties as the Maintenance Manager with exceptions of being on call for the garage. His essential job functions include plumbing; unplugging sewer drains, electrical repairs, preventative maintenance, repairs of shop heaters, furnaces, carpentry, and gives direction to our other maintenance workers.

Our General Laborer's duties includes janitorial and grounds keeping. He assists the Foreman II in performing minor repairs of electrical, mechanical, plumbing, and heating.

During the summer months we employ temporary help for janitorial, grounds keeping, painting, etc. to free up our General Laborer so he can assist with repairs.

Preventative maintenance is being done annually on all types of equipment such as waste oil burners, shop air compressors, diesel generator, floor drains, shop floor scrubbers, snow and lawn equipment, along with HVAC systems within our twelve facilities and fuel pumps at three locations.

Central Services Building Maintenance now oversees thirty one City owned generators. Herrman & Goetz has a three year contract for Preventive Maintenance and on call services while Equipment Services does repairs as needed during our regular working hours to help keep repair costs down.

In addition to our everyday maintenance duties, the City purchased CNG Powered (compressed natural gas) Solid Waste trucks, therefore our Riverside Garage had to be CNG

compliant and safe for our workers to maintain these vehicles. Central Services spent countless hours to research, locate, and purchase the proper system. Our maintenance personnel installed the system which continuously monitors the garage air. If CNG is present, this system will sound an alarm, turn on all exhaust fans, and shut down all heaters in the building making the building safe for our employees.

Maintenance played a big part in energy conservation with completion of lighting projects as follows: Phase One of Equipment Services - replaced one hundred sixty-two 400 watt light fixtures with one hundred sixty-two 196 watt fixtures. Riverside Garage – replaced eighty 120 watt light fixtures with sixty eight 196 watt fixtures. Water Works Building #1 – replaced fourteen 400 watt light fixtures with fourteen 196 watt fixtures. Water Works Building #2 - replaced ten 110 watt light fixtures with ten four tube 49 watt T5 fixtures. Water Works Workshop - replaced six 400 watt light fixtures with six 196 watt fixtures. Fire Station #4 - replaced fourteen 400 watt light fixtures with fourteen 196 watt fixtures.

Our goal for 2013 was to show an energy savings of 20%. Our electric usage in 2013 was 331,000 kilowatts compared to 423,500 kilowatts in 2012, a decrease of 22%. 2013 Natural gas usage was 30,731 therms vs. 19,935 therms last year. This is due to a much colder winter in November and December in 2013 compared to 2012. Our overall energy reduction in 2013 was 18%.

Building Maintenance also worked 184 hours on prepping City vehicles for the 2013 automotive auction. This consisted of getting the vehicles running, stripping off all decals, removing all belongings left inside, making sure all the vehicles have keys, lining vehicles in rows, and assigning numbers to them. This auctioned totaled \$82,900 in proceeds.

2013 Building Maintenance Cost Savings

Month	Total Hours	Our Labor Cost	Industry Labor Cost	Total Savings
January	10.50	\$420.00	\$864.48	\$444.48
February	15.00	\$600.00	\$1,256.65	\$656.65
March	26.50	\$1,060.00	\$1,989.28	\$929.28
April	52.50	\$2,100.00	\$4,006.27	\$1,906.27
May	33.50	\$1,340.00	\$2,713.89	\$1,373.89
June	62.00	\$2,480.00	\$4,595.55	\$2,115.55
July	62.50	\$2,500.00	\$4,152.61	\$1,652.61
August	145.00	\$5,800.00	\$9,706.69	\$3,906.69
September	17.50	\$700.00	\$1,268.94	\$568.94
October	5.50	\$220.00	\$3,678.07	\$1,858.07
November	39.50	\$1,580.00	\$3,163.42	\$1,583.42
December	46.00	\$1,840.00	\$3,503.98	\$1,663.98
Totals	516.00	\$20,640.00	\$40,899.83	\$18,659.83

2013 Fire Department Maintenance Cost Savings

Month	Total Hours	Our Labor Cost	Industry Labor Cost	Total Savings
January	20.00	\$800.00	\$1,799.40	\$900.40
February	11.50	\$460.00	\$1,102.20	\$642.20
March	45.00	\$1,800.00	\$4,116.30	\$2,256.30
April	90.00	\$3,620.00	\$6,953.60	\$3,333.60
May	50.00	\$2,000.00	\$5,390.38	\$3,390.33
June	62.00	\$2,480.00	\$5,480.39	\$3,000.39
July	135.50	\$5,420.00	\$12,022.96	\$6,602.96
August	100.50	\$4,020.00	\$8,797.50	\$4,777.50
September	102.50	\$4,100.00	\$9,170.78	\$7,994.66
October	57.50	\$2,300.00	\$4,997.97	\$2,697.97
November	61.50	\$2,460.00	\$5,306.09	\$2,846.09
December	49.00	\$1,960.00	\$4,062.25	\$2,102.25
Totals	785.00	\$31,420.00	\$69,199.82	\$40,544.65

DEPARTMENT OF PUBLIC WORKS

ENERGY DIVISION

Energy Office Initiatives Underway or in Development

ENERGY

1. The Energy Office has developed a long term energy (electricity) master plan to reduce our electricity costs over the next ten years in the face of significant utility increases. This plan is division specific and maps out a strategy which will form the basis of interaction with individual Divisions. When combined with the CNG transportation Plan and our natural gas procurement strategy, the City energy budget can remain stable and provide significant triple bottom line benefits to South Bend in the years to come. Two of 13 plans are complete (Central Services and Garages) and a 3rd (Century Center) in progress.
2. Ongoing energy efficiency and tariff optimization work (**See master plan for all divisions**). Significant work remains to be done in many City buildings; some of the work with ROI's of about 12 months with current incentives.
 - a. Century Center Performance Contract
 - i. Developing a detailed list of ECM's for the project in concert with Scott Herczeg.
 - ii. NOTE: The Century Center currently has excess capacity in heating and cooling to provide service to the CFHOF building. Whatever the final use for the CFHOF building, the HVAC systems in the building need replacement. With the tunnel connecting the two buildings and with favorable infrastructure alignment, this is an opportunity that should be seized by the City and CC. It would mean avoided HVAC upgrade capital costs for the HOF building and higher utilization of CC equipment. The CC could provide hot and chilled water to the HOF building and acquire a new revenue source while achieving a higher utilization of their

equipment. The Century Center Board of Managers is very excited about exploring this opportunity.

- b. Networking buildings to produce energy dashboard for website
 - i. County City building: The Energy Office is working with cSEND to develop a student project to instrument the top floors of the County City building to measure electricity use, create a web portal for viewing data and to create a competition for energy savings. I am collaborating with Stephen Takach who is working to build this into a student project.
 - c. The Energy Office will continue to find investment dollars to reduce energy use and cost. Energizing Indiana incentives remain in place and should be captured. Performance contracting may also be utilized as a funding solution; however, a hybrid approach may work as well.
 - d. Power factor correction at Police facility will save 8K per year with minimal investment.
 - e. Bulb changes from 32w to 25w in T-8 fixtures will save significant dollars with roughly a 12 month ROI (with I&M incentive). Each 32w T-8 bulb in the city that burns 50 hours per week, if replaced with a 25W unit will pay for itself in 12 months. @ .09/kwh. Longer burn times will result in a shorter payback. This is a great opportunity for the County City building which will produce immediate results with a 12 month ROI.
 - f. Golf course charging barn meter separation and transition to time of use. This will reduce the rate per kilowatt hour from 8.5 cents to just under 5 cents for all energy used for golf cart charging.
3. Hydro Project: (Both small and large)
- a. The small hydro unit is undergoing changes that are necessary for continual operation. The unit is currently operational and grid connected but cannot run continuously until the vacuum pump changes are complete. Changes to the control system, which have been delayed by difficult weather, are all that remain to make the hydro unit fully operational.
 - b. The large hydro project can be built with private sector involvement. Someone must champion this excellent renewable energy opportunity for the City. This

hydro facility can generate enough power to provide 2.5% of all of South Bend's residential energy needs.

- i. The large hydro project is only possible due to a FERC exemption which the City has recently been compelled to develop. The City of South Bend will lose this valuable exemption to develop this project unless an active plan is developed in 2014. The City is under direction of the FERC to provide plan development updates on a quarterly basis with the first report due in April of 2014. Without active plan development, the City will lose the FERC exemption. The Energy Office has been the main point of contact for FERC regarding the hydro exemption.

4. Solar Grant for City of South Bend

- a. AEP/EPA agreement will provide roughly 50K for a high profile solar facility. I am working to design several installation options with these funds. The most promising option is to install the array at the Century Center. The Century Center Board of Managers is very excited about the opportunity as is SMG who is hoping to use these green initiatives in a re-branding effort to increase the profile of our facility.
- b. The cost of solar installations is rapidly falling and will reach grid parity in this decade. Solar opportunities will become cost effective in some of our buildings within a few years and we should be ready to install solar systems when the long term cost of ownership is less than grid purchased electricity. Numerous opportunities exist to install solar systems with no initial costs. Payments for these systems are made directly through avoided utility costs. With the installation of solar energy the City not only receives the net metered benefit of peak kilowatt hours. City facilities also reduce peak demand which generates a separate stream of savings on utility bills. Peak demand reduction is a significant additional cost savings area.

5. Water Works Time of Use opportunity

- a. This initiative needs significant development in 2014 and will produce significant cost reductions. Water Works personnel are on board and will collaborate well to get this done...but this will not happen unless someone understands the

opportunity and drives the process. Water Works staff does not fully understand the opportunities for energy savings across their operation but are very receptive to Energy Office help. In short, the main opportunity is to separate roughly half of all water production and delivery pumps to operate on time-of-use meters. With significant excess capacity, this is a relatively simple project to complete, requiring minimal infrastructure and SCADA changes. A full 50% of our water delivery occurs during times the utility considers off-peak. During this time, we can use grid electricity at about half of the regular rate, reducing the overall Water Utility rate by 25%. This project alone has a 2.38 million dollar impact by the end of 2021 with minimal upfront costs.

- b. Other opportunities include: Fine tuning and matching pump and motor efficiency curves to maximize work output per energy unit. Also, maximize storage refills off-peak.
6. Cogeneration at WWTP
- a. The Energy/Sustainability office should help develop this green initiative to find and deploy the highest and best use for green biogas at the WWTP.
 - b. Cogeneration is currently at parity with WWTP utility costs (\$.06) with purchased gas and adequate thermal balance. Biogas can lower the costs for a co-gen system, especially when paired with the current storage capacity at the WWTP and the extremely favorable TOU tariff structure.
 - c. The use of bio gas for heat and power is currently the most attractive renewable energy resource in the City with the potential to provide a significant portion of the City's energy portfolio.
 - d. The gas storage assets at the WWTP can leverage co-generation capabilities to maximize the time-of-use tariff to significant economic advantage. Much of the WWTP grid can operate from biogas derived electricity during the 70 peak hours each week and utilize lower cost time-of-use grid electricity during the 96 off-peak hours of the week.
 - e. The production and best use of the biogas resources at the WWTP are the most readily available renewable energy resource for the City and can form the basis

for a renewable energy goal for the City. It is not out of reach to set a goal of 10% renewable energy by the year 2021 for the municipal City.

7. Street Lighting Upgrades: The Energy Office is developing a plan with an implementation of 2016 – 17.
 - a. This project requires significant expertise in utility negotiation. The Office is in discussion with a subsidiary of AEP to facilitate this process which can move forward in 2014-15 with potential deployment of a cost effective solution in 2016 or 17. This work could be done through a performance contract or through in-house efforts and has significant triple bottom line benefits and an impact of up to 6.5 million dollars by the end of 2021.
8. Fire Station Central Retro-commissioning
 - a. This project will reduce energy consumption at Central Fire by as much as 25% with a 100K investment. I am working to achieve higher savings with lower costs. Chief Cox wants to move forward with energy efficiency measures in this facility and others.
9. Phase 2 lighting project at Central Services (Underway)
 - a. We have conducted extensive training among the staff at Central Services and they are responding very well; increasing the energy savings. Once phase 2 is complete in early spring, this facility will use 50% less electricity. Currently, Central services electricity use is down 38% with minimal investment. An aggressive “Occupant Optimization” or employee training program is in place and having an impact.
10. Tariff Optimization
 - a. Utility rate cases usually result in tariff changes which present an opportunity to optimize accounts with new tariff structures. This is an ongoing process. Last year, the Energy Office changed the tariff categories on over 30 accounts for an annual savings of over \$30,000.00.
11. Utility Data: Since 2011, the Energy Office has worked hard to gain control of over 660 utility accounts. This process, aided by the addition of Seema Timble in 2012 and the acquisition of utility tracking software has given the Energy Office unprecedented capabilities for energy data analysis. We are working to achieve the capability to receive

electronic data from our major utilities *but this will not happen without significant and continuing effort.* It is critical to maintain and enhance this process in the future.

TRANSPORTATION

1. CNG transition process.
 - a. This process requires continuing involvement on a day to day basis to achieve an on-time deployment and to deal with fleet transition matters.
 - b. The TRANSP0 /CITY press event is scheduled for February 4th
 - c. The Police Department is rapidly getting on board with CNG cruisers
 - d. South Bend has North America's first direct injection CNG vehicle; our Impala Police Cruiser.
 - e. Our developer, IndyCNG has requested to display our Police cruiser at the World Alternate Fuel conference in California in early May. They will pay all costs. This technology development (direct injection CNG) is a significant technological accomplishment.....from South Bend! Once we are further into our transition, this should be turned into a WSJ story or at least something for national dissemination.
 - f. Significant opportunities exist to expand the use of CNG into the private sector. The construction of a fueling facility will provide an opportunity for fleet operators to transition their vehicles to run on natural gas. The Energy Office has excellent collaborations with the private sector to help facilitate this process which will have significant triple bottom line benefits for the entire city.
2. SBCSC Propane Transition: This initiative needs a champion. The SBCSC currently does not have an in-house champion for this project. This initiative is not likely to succeed if the School Corporation does not have continued input from the Energy/Sustainability Office.
 - a. The Energy Office secured a grant of \$78,000.00 from IDEM. These funds paid for most of one of the 4 Propane buses purchased last year by the School Corporation.
3. Propane Mower Transition:

- a. Will continue to develop this in 2014 with all divisions that cut grass. Savings and environmental benefits are significant.

URBAN HEALTH

1. Roof top garden at Century Center

- a. Grant writing underway to AEP Foundation for \$150,000.00 as anchor fund for green roof. This project may be installed as early as the fall of 2014.
- b. Working on cost estimates for project in collaboration with Kil Architecture and Midland Engineering. Preparing an RFP for solicitation of an A&E firm. Working in collaboration with the Board of Managers and Art Museum Board. City Engineering has agreed to oversee structural work.
- c. The re-branding of the Century Center as a “green” facility is a high priority for SMG, the new management company. A great deal of collaboration is happening between the Century Center management and the Energy Office, the IUSB Center for a Sustainable Future and organizations like Greening the Bend, Inc. to help facilitate sustainable practice at the Century Center.
- d. The Century Center hosted its first ever event last fall with all locally sourced food. The Energy Director advocated for this approach and found a very receptive Century Center staff, especially the new chef. This is a ground-breaking initiative for the Century Center as it relates to Sustainability. This initiative is now morphing into an ongoing relationship between the Century Center staff and a local food co-op (Purple Porch)

2. Greene Intermediate Environmental Program

- a. The green house will provide an area for students to grow plants which they will then take home to their urban setting to start their own home based garden. The leveraging benefit of this program is significant for urban health as students, and by extension families, learn the benefits of gardening and local food.
- b. The Energy Office secured a grant from Wells Fargo to fund \$4,000.00 of the green house.

- c. The Energy Office is advocating for food waste recycling, enhanced gardening programs and recycling efforts among other things at Greene.

RECYCLING AND REUSE

1. Locally Sourced Produce and Food Waste Recycling.
 - a. As a direct result of the growing relationship between the Century Center Management Company and local food growers, a food recycling program is rapidly evolving. This program will deliver waste food regularly from the Century Center to local farms and then return it as useable food products. A story about this exciting collaboration will appear in an upcoming edition of our local food publication: Edible Michiana.
2. Food waste on a municipal volume should be captured as a valuable energy resource. It is beneficial for livestock food and for feedstock for enhanced biogas production at the WWTP.
3. The City of South Bend currently has residential recycling service. The City recycling program must be expanded to include all businesses as well as municipal buildings.
4. Exploring the “Zero-Waste” communities program
5. In communication with the Solid Waste department for strategy development related to expanded recycling program in South Bend.
6. The Solid Waste Department use of natural gas vehicles will save significant costs which can potentially be diverted to an enhanced recycling programming.

ADVOCACY AND EDUCATION OUTREACH

1. Advocacy with utilities and State of Indiana:
 - a. PACE program for Indiana: PACE programs offer a property linked loan mechanism to finance energy and efficiency projects. Indiana is one of a small group of states that do NOT offer a PACE program. The Energy Office has formed a relationship with a main PACE advocacy group in Indianapolis.

- b. Alternate Fuels Federal rebate extension. South Bend has an opportunity to advocate on a national level for beneficial alternate fuel legislation. The Energy Office is exploring opportunities to engage this process.
 - i. Seema is preparing to file for the fourth quarter of 2013 for fuel used in solid waste vehicles which will provide a \$.50 per gallon rebate for natural gas used in the solid waste vehicles in 2013.
 - c. Upcoming rate cases will present an opportunity to advocate strongly for changes that will benefit South Bend. One change of note is the change to high efficiency street lights. The city currently leases 10,000 street lights from Indiana Michigan Power at an average rate of \$.145/kwh. It will take significant negotiation to convert these lights to LED or Induction units and to take over the operation and ownership. It may take as long as two years for this process to result in a solid opportunity for a major change to our street lighting system.
2. Environmental curriculum development with SBCSC
- a. Grant for green house at Greene Intermediate. The Energy Office conceived this idea and is spearheading the process.
 - b. The Energy Office currently has a significant team working to advance this initiative with in-kind donations of talent and materials.
 - c. The City and the School Corporation will have a joint press event at Greene on February 10th at 1:30 to announce the collaborative efforts to build a green house. The City will also present a \$4,000.00 check to start the effort. These funds were raised by the Energy Office in support of urban gardening and were received from Wells Fargo.
 - d. Ongoing connection with roof top “Sky Garden” at Century Center to position as an urban learning lab for SBCSC children.
3. Notre Dame hydrokinetic project
- a. Currently in 3rd year of development. Paul Brenner (Notre Dame) and the Energy Director developed this project. The students conducted a live test of their prototype in the East Race this past October under the supervision of Parks Department staff. This project will very likely be installed in 2014 on a trial basis. The Energy Office participated in grant development to fund the final

product. This project will certainly attract press interest and will display a historic technology in a new application. The students plan to take this technology to developing nations for deployment in the future.

4. IACT 2014 (Presentation at Conference)
 - a. Developing a proposal to present at the 2014 IACT conference in Fort Wayne.
Subject: Energy resiliency and the benefits of having an Energy/Sustainability Office.
5. Working to achieve electronic billing from I&M and NIPSCO. Neither company can currently provide this data in an electronic format. I&M is working with the Energy Office to develop a system that can provide the data in the format needed by the City. Much of the work that must be done relates to the proper formatting of the names of City utility accounts.
6. I have been asked to speak to the Rotary Club. The Topic: Our Energy Future and How to Prepare.
7. The Energy Office has conducted an average of 30 public presentations per year in the past two years.