

CITY OF ST. MARYS
WATER/WASTEWATER
DEPARTMENT
ANNUAL REPORT

2010



ANNUAL REPORT - 2010
WATER / WASTEWATER DEPARTMENT

This report highlights some of the major accomplishments in the Water and Wastewater Department in 2010. The ultimate goal of this department remains to provide safe, reliable, and cost-effective water and wastewater services to St. Marys citizens and businesses. We are dedicated to protecting public health as our first job and most important priority. An often overlooked point in providing these services is the need for quality, dedicated employees. We have an excellent staff of employees who deserve a lot of credit for the work they do and the knowledge they have acquired. Joe Hurlburt retired in 2010, after 31 years of service. Joe was the department's Laboratory Technician, and was very conscientious and dedicated to St. Marys.

Water Department Highlights

1. Our annual publication of the EPA required "Water Quality Report" was distributed to all water customers in June.
2. Analysts were re-certified for the bacteriological laboratory by Ohio EPA in October.
3. A project to extend water services into the Breezewood development on the south side of Grand Lake St. Marys was completed in 2010.
4. In November, St. Marys Council passed an ordinance that strengthens the City's cross-connection control program.
5. The City needs to watch the water revenue fund closely. It has been fifteen years since the most recent rate increase. A rate study was commissioned in 2010 to prepare for the time when a rate increase is deemed necessary.

Wastewater Department Highlights

1. The new Wastewater Treatment Plant continues to meet expectations.
2. A project to address wet-weather flows in the southwest portion of the City is being designed by our wastewater consultants, with construction anticipated to be completed during 2011.
3. The project to extend wastewater services to serve the new school site was completed.
4. Two small sewer extension projects were completed: one to serve the new Agape facility on E. Spring St., the other to re-route West School sewer flows to High St.

Water Treatment Plant

The 2009 annual report on drinking water quality was distributed to all consumers of the City's drinking water in June. The drinking water provided to St. Marys citizens continues to meet all Federal and State standards, reflecting the hard work of all our employees to provide water that is safe.

Every three years, Ohio EPA conducts a re-certification survey of the bacteriological laboratory to ensure that proper procedures and equipment are used. Ohio EPA did a survey in October 2010. Three analysts received full approval to analyze bacteria samples.

Facts and Figures	2010 Total	% Difference from 2009
Raw Water Treated	472.21 Million Gallons	+5
Water Pumped to System	448.70 Million Gallons	+5
Lime Sludge to Lagoon	13.77 Million Gallons	+8
Lime Used (Softening)	673.55 Tons	+5
Soda Ash Used (Softening)	79.32 Tons	-4
Ferric Chloride Used (Coagulant)	0.71 Tons	+2
Liquid CO ₂ (Recarbonation)	65.42 Tons	+2
Chlorine (Disinfectant)	6.31 Tons	-6

Testing to comply with Safe Drinking Water Act (SDWA) requirements was light in 2010, as Ohio EPA required that we test only for Nitrate. The result was below detectable limits. SDWA monitoring requirements vary year-to-year, based on an Ohio EPA schedule.

Water Chemistry, 2010 Ave.	Raw Water	Treated Water
Total Hardness, mg/l	457	156
Carbonate Hardness, mg/l	328	49
Non-carbonate Hardness, mg/l	129	107
Calcium Hardness, mg/l	408	144
Magnesium Hardness, mg/l	49	12
pH, S.U.	7.5	9.5

On November 8th, St. Marys City Council passed an ordinance that strengthens the City's cross-connection control program, per an Ohio EPA recommendation.

Officials continue to address formulation of an official Wellhead Protection Program (WHP) to protect the City's well water from contamination. A draft ordinance to impose overlay zoning regulations in the City's Wellhead Protection area was developed during the year. The regulations are being reviewed by the City's and St. Marys Township's legal counsel.

Pumping capacity from #1 well slowly dropped during the year, most probably from deterioration of the well column. A project to repair this well was initiated late in 2010.

The following is a summary of major projects completed in 2010 at the Water Treatment Plant. The list does not include numerous smaller projects, general maintenance, or the numerous day-to-day duties necessary to provide safe drinking water to citizens.

- Cleaned filter influent piping.
- Cleaned #2 flocculator.
- Various adjustments and maintenance on the variable frequency drive on #5 well.
- Installed new influent valves on #2 and #4 filters.
- Installed a new pressure/vacuum relief valve on the carbon dioxide bulk tank.
- Installed a fall restraint system on the lime and soda ash bulk storage tanks.
- Electrical repairs to the elevator control system.
- Replaced an exterior door in the old slaker room.
- Replaced electrical controls for the south lime sludge pump.

Some of the Water Plant projects planned for 2011 include the following:

- Address repairs to #2 well.
- Continue development of our Wellhead Protection Program (WHP).

Water Distribution

The Water Distribution crew was kept busy in 2010 maintaining and extending the distribution system in numerous ways:

- Repairing water main breaks, replacing water services, repairing and replacing valves and curb stops, and keeping fire hydrants in optimum condition.
- Monitoring water extension projects, including coordination of the projects with contractors, and assisting in flushing and pressure and bacteria testing.

- A project to install water mains within the Breezewood development via directional bore technology was completed in 2010, at a cost of \$153,718.85. Materials installed included: 1,127 feet of eight inch polyethylene pipe, 1,181 feet of six inch polyethylene pipe, 836 feet of two inch polyethylene pipe, 11 valves, and four fire hydrants.
- In addition, a water main along McKinley Road was extended east 1,250 feet to serve an existing industrial development site, at a cost of \$52,500.00.
- Private projects completed included 310 feet of 4 inch PVC pipe to serve the new athletic facility on Shipman Road, and a fire line to serve the new Kohl's store on Fortman Drive.
- Services, taps, and fire hydrants along streets that were resurfaced or reconstructed in 2010 were checked for problems such as freezing, depth, and type of material, and replaced or relocated when warranted.
- A total of 21 water main breaks were repaired in 2010, 7 without interrupting water services. Two depressurizations occurred for service work to the system, such as new main tie-ins, valve installation, or fire hydrant maintenance.
- The integrity of the City's water distribution system was compromised on November 6th when lake water was pumped into water mains in the Sandy Beach area during fire-fighting activities by the St. Marys Township Fire Department. Response activities undertaken by City employees included isolation and flushing of all water mains and extensive sampling and water quality testing in the affected area. A water use/boil water advisory was issued in the area until test results confirmed that the City's water was safe for use. The cost for response activities totaled \$9,721.70.

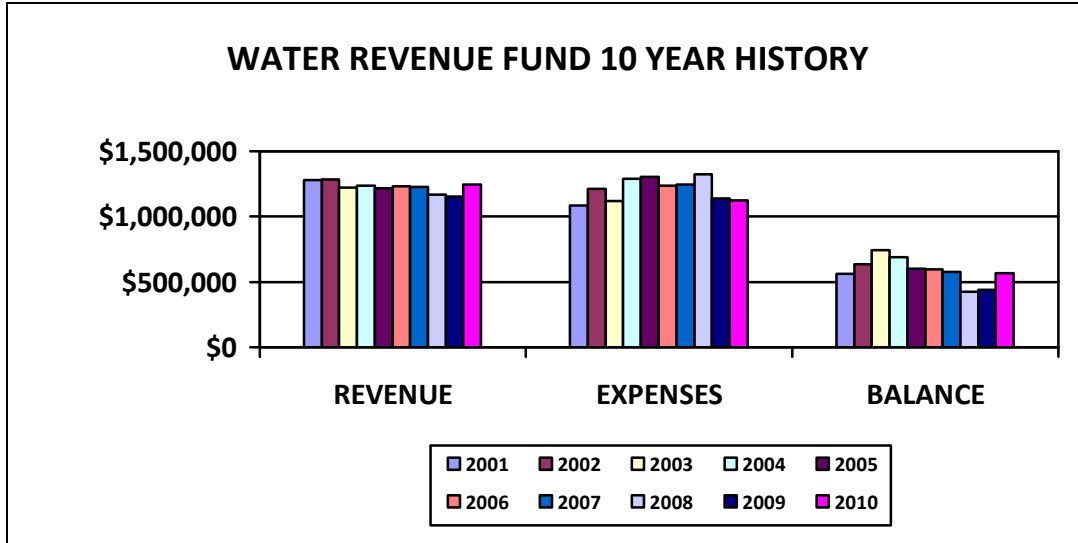
Some Water Distribution projects planned for 2011 include the following:

- Work on the distribution system related to the street program.
- Possible water line installation in the Sandy Beach area.
- Possible water line replacement in Villa Nova.

Finances

End of year balances for the two active water funds:

- Water Revenue Fund \$566,898.74
- Water Replacement Fund (reserve account) \$456,889.84



Wastewater Treatment Plant

The new Wastewater Treatment Plant continues to meet expectations. Treatment has been very efficient. New NPDES permit discharge limits became effective June 1, 2010, decreasing the limits for several parameters, a reflection of the increased hydraulic capacity of the new plant.

Pollutant Removal Efficiencies	2008 Yearly Average	2009 Yearly Average	2010 Yearly Average	Required by EPA
Total Organic Pollution (BOD)	95%	97%	98%	85%
Carbon Organic Pollution (CBOD)	97%	97%	98%	85%
Suspended Solids Pollution	94%	96%	98%	85%
Ammonia Pollution	95%	89%	98%	N/A
Phosphorus Pollution	85%	85%	88%	N/A

NPDES permit limits were exceeded once during 2010. The ammonia discharge in July was slightly higher than limits due to an operational upset caused in part by a failure of oxidation ditch aerator disks. The manufacturer was contacted and replacement disks were provided and installed.

Test Results, 2010 Average	Raw Influent	Effluent	EPA Limit (Summer/Winter)
Dissolved Oxygen, mg/l	2.8	8.3	>6.0
pH, S.U.	7.7	7.6	6.5 – 9.0
Ammonia Nitrogen, mg/l	19.9	0.35	1.3/5.1
Nitrate + Nitrite, mg/l	---	7.0	N/A
Total Phosphorus, mg/l	4.8	0.6	1.0
Suspended Solids, mg/l	333	6	24
BOD, mg/l	152.2	2.8	N/A
Carbonaceous BOD, mg/l	104.6	1.9	10/20
Fecal Coliform, #/100 ml	---	33	1,000

Several housekeeping items related to construction were addressed: operation of the sludge fine screening system was corrected, oxidation ditch aerator disk replacement, development of SCADA and Operation and Maintenance manuals, and non potable water system piping repairs.

In order to remove all solids remaining from the old treatment plant processes, a contractor was hired to remove and apply biosolids from the primary digester onto agricultural land. A total of 994,000 gallons were handled in April.

As stated in last year's Mayor's Report, the City cannot rest just because the new treatment plant is complete. An Ohio EPA required study completed in 2006 identified several wastewater related deficiencies that need to be addressed to meet Ohio EPA Findings and Orders (F&O) issued in 2003. The F&O require the City to completely eliminate all sanitary sewer overflows and bypasses by June 8, 2013.

The new WWTP was the first and most significant project related to the F&O. Due to the increased hydraulic capacity and relatively dry weather during 2010, operators did not need to transfer any wastewater from the treatment plant to the equalization basin, eliminating basin overflows, on an annual basis, for the first time since the basin was constructed in 1989. Remaining issues include pump station and collection system capacities and satellite collection systems. A lot of work remains to be done on the collection system, work that will be expensive.

The second most significant project identified in the 2006 study consists of wet weather flows in the southwest portion of the City, which is being addressed via a major collection system project for 2011. Currently being designed, the project will consist of building a new pump station near West School that will handle all flows from County-owned systems, pumping them directly to the treatment plant. The existing pump station near West School will be converted to handle only those flows from within City limits, re-establishing original design capacity and significantly reducing the demands placed upon the pump station during wet weather. The project is presently estimated to cost approximately \$2 million; \$330,000 will be paid through a State Issue 1 grant, \$300,000 through a State Issue 1 loan at zero percent interest, and the remainder through local funds. Funding for projects such as this one was included in the sewer rate study and in the rate increase authorized by Council in 2006.

St. Marys City Council approved an Industrial Pretreatment Ordinance on May 27, 2008. The ordinance will govern the City’s Industrial Pretreatment Program, as mandated by Ohio EPA. On June 24, 2008, the City submitted a request to transfer administration of the program from Ohio EPA to the City. Ohio EPA has requested that we submit additional information before they approve program.

Facts and Figures	2010 Total	% Difference from 2009
Wastewater Treated	634.395 Million Gallons	+13
Sanitary Sewer Overflows	1.390 Million Gallons	-98
Biosolids Land Applied	607.7 Dry Tons	+273
Ferrous Chloride Used	16,825 Gallons	-63

The following is a summary of major projects completed in 2010 at the Wastewater Treatment Plant. The list does not include numerous smaller projects, general maintenance, or the numerous day-to-day duties necessary to provide wastewater services to citizens.

- Startup of the new Shipman Road pump station.
- Fine tuning of the new SCADA system.
- Replacement of piping and fittings in both pump stations at KC Geiger Park. One pump was also replaced in the south station.
- Operation of the sludge fine screening system was corrected.
- Oxidation ditch aerator disk replacement.

- Repairs to non-potable water system piping.

Some Wastewater Plant projects planned for 2011 include the following:

- In conjunction with the mercury variance, begin extensive investigative work to find the source(s) and ultimately reduce the amount of mercury in our wastewater system.
- Begin administration of an Industrial Pretreatment Program, once approved by Ohio EPA.

Wastewater Collection

In 2010, the Wastewater Collection crew continued to address collection system maintenance. Activities included:

- A total of 89,538 feet (17 miles) of sanitary sewers were cleaned in 2010 for various reasons, including our semi-annual maintenance cleaning in areas where previous problems have been identified. We also clean owner laterals upon request (2,738 feet) and storm sewers when needed (130 feet).
- Our video inspection program resulted in the inspection of 50,410 feet (9.5 miles) of sanitary sewer mains, 3,701 feet of residential laterals, and 426 feet of storm sewers looking for tap locations, roots, problem areas, illegal connections, and inflow/infiltration problems.
- Roots were removed in 6,145 feet of sanitary sewers and 22,111 feet of sanitary sewers were treated for grease build-up, all in areas identified through the inspection program.
- Inspections of 30 manholes, which resulted in manhole lid replacements, repairs to manholes and castings, the installation of inflow dishes, and the installation of manhole markers.
- In a continuing effort to identify sources of inflow/infiltration, we did numerous in-house inspections and sewer dyeing and smoking.
- Investigation of all sewer complaints. Only 1 of 37 complaints was due to a problem in a City owned sanitary sewer. The remaining complaints were due to homeowner blockages, surcharging, or odor.
- Monitoring the system during heavy rainfall and setting temporary pumps as needed.
- Monitoring sanitary sewer extension and repair projects.

- Monitoring the use of liquid chlorine at three pump stations used to help control odors in several areas of system during warm months. We used a total of 930 gallons of chlorine.
- Confined space entries (25 total, 3 non-permit) into locations considered hazardous, such as manholes and pump station wetwells. Our hazardous atmosphere monitor is calibrated monthly.

Four sanitary sewer extension projects were completed in 2010. The project to extend wastewater services to serve the new school site was completed when the new pump station on Shipman Road was started up in May. The sanitary sewer on McKinley Rd. was extended east 1,250 feet to serve an existing industrial development site at a cost of \$81,512.00. Two small sewer extension projects included one to serve the new Agape facility on E. Spring St. (\$29,675.13), the other to re-route West School sewer flows to High St. (35,259.62).

For the past several years, the City has contracted a sewer repair project each year to address pipe deterioration, excess storm water entering the collection system, and other reasons. Projects are determined based on investigative work in areas related to the street program. In 2010, several manholes and sections of sanitary sewer were replaced on Defiance, Spruce, and Arlington streets, and in the Chestnut St. parking lot. These costs totaled \$27,015.50.

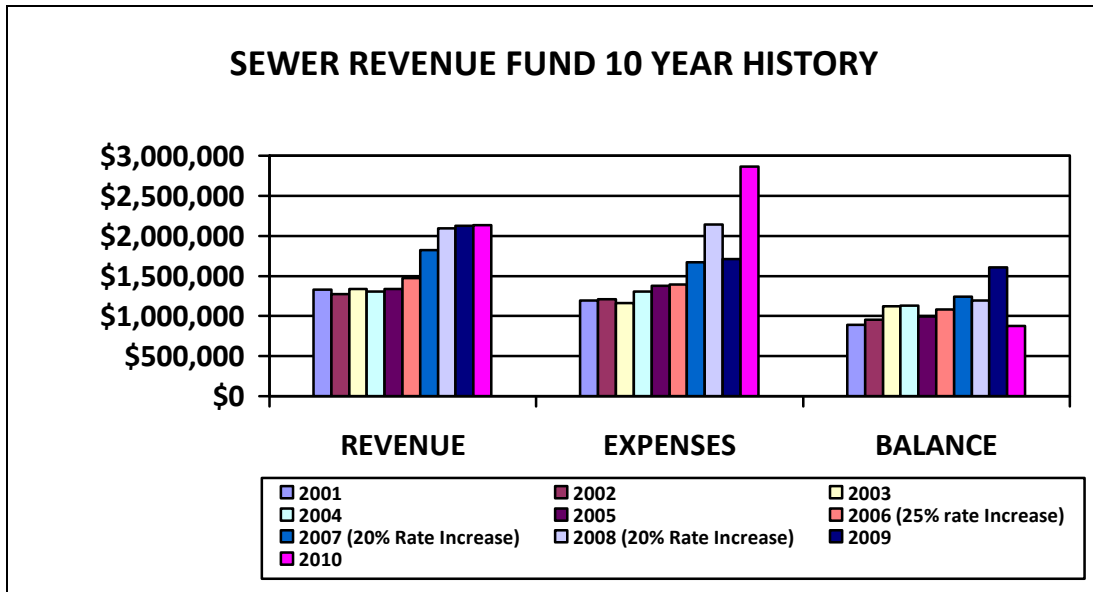
Possible Wastewater Collection projects to be addressed in 2011 include:

- A sanitary sewer repair project that will be determined early in 2011.
- Construction of the major project to address wet weather flows in the southwest portion of the City.

Finances

End of year balances for the active sewer funds:

- | | |
|--|---|
| <ul style="list-style-type: none"> • Sewer Revenue Fund • Sewer Surplus Fund (reserve account) • Sewer Improvement Fund (reserve account) | <p>\$877,438.57</p> <p>\$738,133.67</p> <p>\$922,485.12</p> |
|--|---|
- In 2010, the sewer surplus fund was reimbursed \$257,719.18 from excess funds held in trust related to the December 2009 retirement of the 1988 sewer revenue bond.



Sewer Revenue Fund Notes

- 2007 data reflects a \$308,548 transfer and 2008 data reflects a \$613,938 transfer from the sewer revenue fund to the sewer improvement fund. This reflects additional monies collected due to the rate increase for the period 4/1/06 through 3/31/08.
- No transfer was done in 2009 due to the fact that the revenue fund must fund debt repayment beginning in June 2010.
- 2010 data reflects a \$912,853.15 transfer from the sewer revenue fund to the sewer improvement fund. This reflects additional monies collected due to the rate increase for the period 4/1/08 through 3/31/09.

Family Aquatic Center

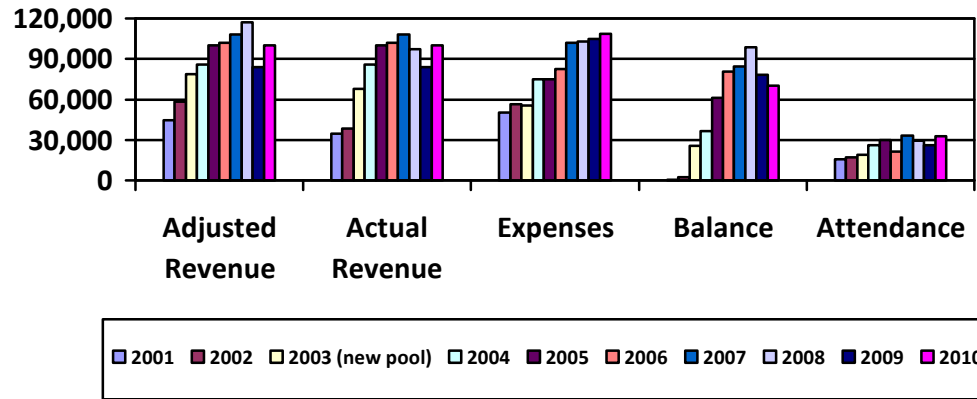
In 2010, attendance increased to 32,869 from 26,120 in 2009. This was the second highest yearly attendance since the new facility opened in 2003 (highest total was 33,360 in 2007; lowest was in 2009).

Annual startup, shutdown, and maintenance activities continue to be provided by Water/Wastewater Department employees. Major projects completed during 2010 included:

- The replacement of two flow meters.
- Factory repairs to the Leisure Pool chemical feed controller.
- Painting the floor of the Leisure Pool after it was drained for the season. Supplies to paint the floor of the Competition Pool next spring were purchased in 2010.

Receipts totaled \$100,231, expenses totaled \$108,395, leaving a \$70,083 balance to start 2011.

MUNICIPAL POOL 10 YEAR HISTORY



- Notes:
- Adjusted revenue includes transfer from General Fund through 2003.
 - Adjusted revenue for 2008 includes \$19,400.18 transfer of unexpended funds from 2003 pool construction account.
 - Actual revenue shows funds realized from pool operations only.