

WATER POLLUTION CONTROL FUND

GENERAL INFORMATION:

The Water Pollution Control Fund consists of two reserve funds, one bond sinking fund and five (5) operating activities. In order to provide a comprehensive picture of the financial status as an enterprise function, it is necessary to review the reserve funds and each of the activities within the Water Pollution Control Fund.

RESERVE FUNDS

Water Pollution Control Plant (WPCP) Replacement Reserve. This reserve was known as the E.P.A. Replacement Reserve through the 2006/2007 year. This reserve was originally required under the terms and conditions of the receipt of federal funds for the construction of the Water Pollution Control Plant in 1976. The reserve is used to fund the replacement of equipment at the plant. According to the terms of the original agreement between the EPA and the City, a transfer of \$90,000 annually was required to be made from the Water Pollution Control Operating fund. The funding transfers to this reserve for 2006/2007 through 2010/2011 were each set at \$270,000. In the 2011/2012 revised estimate and 2012/2013 budget the transfer amount has been reduced to \$200,000. This reduction was due to funding the new West Hill Sewer Separation Long-Term Financing Plan Reserve discussed below.

In 2009/2010, 2010/2011, and 2011/2012 a total of approximately \$2 million from this reserve is being used as part of the overall financing of the Water Pollution Control Comprehensive Plant Improvement project including the digester conversion portion of the project. The primary funding source for the Comprehensive Plant Improvement project is a State Revolving Fund Loan in the amount of \$16,500,000 with the \$2,000,000 from this reserve used to reduce the overall debt financing for this project. The contract for this project was awarded in the fall of 2008 and the project was substantially completed in the fall of 2011. In 2011/2012 the reserve will also fund \$300,000 for the upgrade of the Slough/Sunset Park pump station, \$123,000 for the Papoose Pump Station Crane Renovation, \$120,000 for moving and setup of the storage building from the former National Guard Armory site, and \$20,000 for engineering services for the WPCP Lab expansion project. The 2011/2012 revised estimate also includes \$96,500 for telemetry upgrades in several pump stations.

In 2012/2013 funds from this reserve will be used for improvements to the final clarifier launders (\$65,000) and Inductive Coupled Plasma (ICP) or Atomic Absorbance (AA) equipment (\$66,500) for the Water Pollution Control laboratory. In 2012/2013 an estimated \$330,000 from this reserve has also been budgeted to complete the Lab Renovation project.

West Hill Sewer Separation Long-Term Financing Plan Reserve. City staff working with PFM, the City's financial consultant, recently completed a long-term plan for financing the West Hill Sewer Separation project. This \$50+ million project is mandated by an E.P.A. Consent Order to be completed by 2024. Plans are to complete this project in phases and as part of this plan to request an extension to the Consent Order deadline to 2028. The 80% allocation of Local Option Sales Taxes approved by voters to be used for storm and sanitary sewer improvements will provide funding for a portion of the project costs. Beginning in 2017/2018 local option tax will need to be supplemented with other resources to complete the scheduled work on this project. This reserve fund was set up in 2011/2012 to accumulate funds to assist in financing this project. The revised estimate for 2011/2012 and budget for 2012/2013 each include \$200,000 in transfers from the Water Pollution Control fund. Like amounts for those same years will be transferred from the Collection and Drainage fund. Annual allocations from both of these funds are proposed to continue to be set aside each year throughout the

project. Based on the assumptions used in the long-term financial plan, the Local Option Sales Tax funds and funds from the new reserve are expected to be sufficient to cash flow project costs until 2018/2019 when the City would need to secure a State Revolving Fund Loan to complete the scheduled work on this project.

SEWER BOND SINKING FUND

The City used the State Revolving Fund (SRF) Loan program to finance \$16.5 million of the cost for the Comprehensive Plant Facilities Improvement project. Interest is at an effective rate of 3.25%. Under the SRF Loan program, the City is required to transfer funds on a monthly basis into the Sewer Bond Sinking fund. Transfers to this fund in 2011/2012 and 2012/2013 are \$1,061,333 and \$1,063,339, respectively. Interest payments are estimated at \$519,188 in 2011/2012 and \$501,573 in 2012/2013. The principal payment on this loan is \$542,000 in 2011/2012 and \$560,000 in 2012/2013.

CONSTRUCTION FUNDS

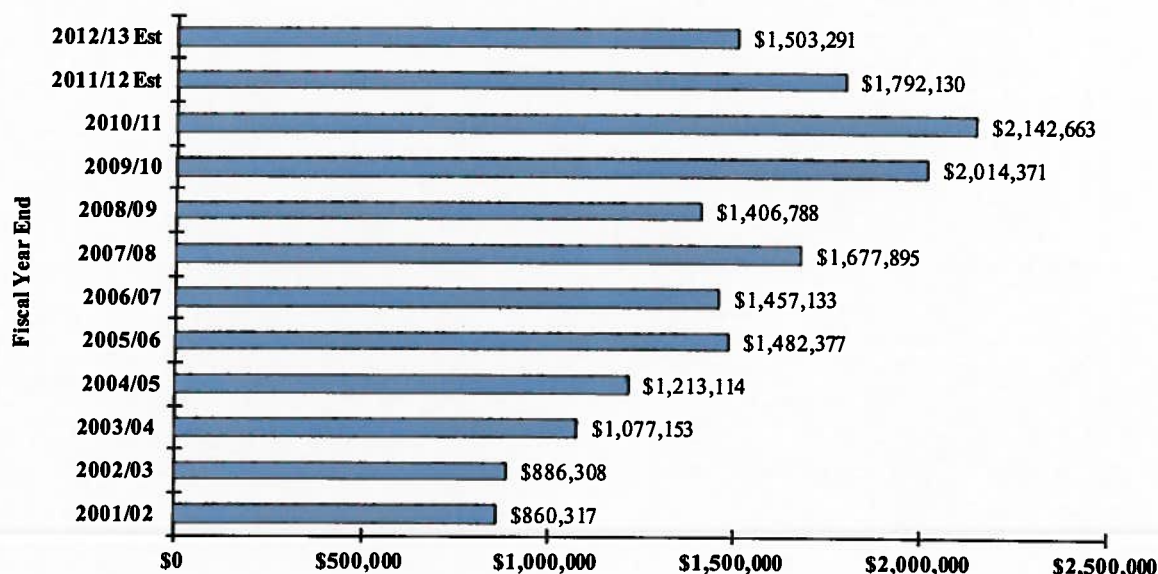
The existing Water Pollution Control Plant was completed in the fall of 1976. A renovation project was initiated in 1984 and completed in 1989 which included major rehabilitation of the plant equipment and major changes in both the wet process and the sludge disposal program. The total cost of the project was \$8.9 million. A Plant Modifications Project was completed in 1999. This project included construction of a new grit facility for grit removal, cleaning and storage.

A comprehensive Plant review was completed in 2006. Recommendations from this review included reconstruction of existing processes with upgrades directed toward process optimization through equipment upgrades, operational flexibility, and maximizing energy utilization. The total cost of these improvements was approximately \$18.5 million with \$2 million funded from the WPCP Replacement Reserve and \$16.5 million from the State Revolving Fund Loan program. Construction on this project began in December, 2008 and the project was substantially completed in the fall of 2011.

WATER POLLUTION CONTROL OPERATING FUND

As the Muscatine Water Pollution Control Plant is substantially dependent on the waste from its major industrial customers, their economic growth substantially impacts the fund balance of this fund. The following chart shows the Water Pollution Control fund balance history.

Water Pollution Control Fund Balance History

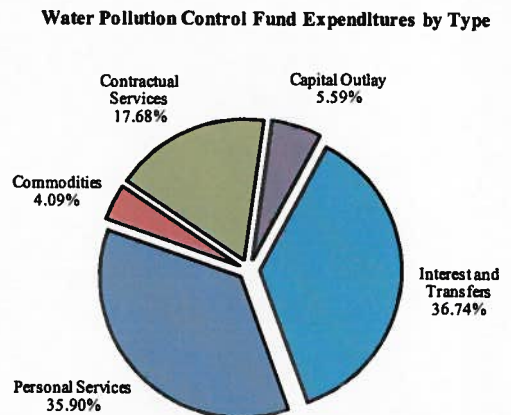
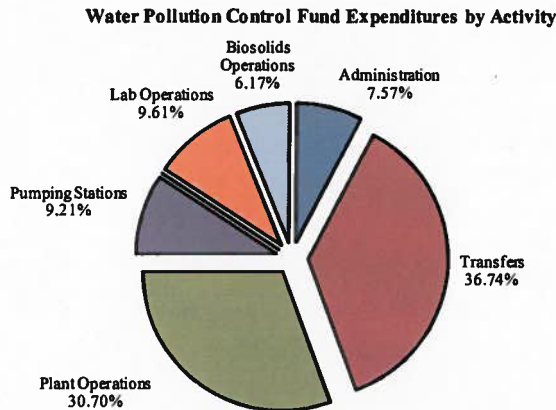


The fund balances listed above fluctuated partially as a result of variable volumes received from industrial customers. In addition, the City increased rates during this time period to cover inflationary cost increases. The increase in 2009/2010 was due to there being no debt payments. The prior year bond issue was retired in 2008/2009 and there was only interest due on the new State Revolving Fund (SRF) Loan in 2009/2010. In 2010/2011 there was a principal payment on the SRF loan but the interest paid was based on the loan funds drawn down through that date. The full annual debt payments on the SRF loan (approximately \$1,061,000) began in 2011/2012.

In 2002 the City contracted for consultant services to assist in developing a new sewer rate structure. One component of the new rate structure was a multi-year contract with the City's major industrial sewer customer which provides a guaranteed minimum of industrial sewer revenue. Another component was to provide for a separate "Collection and Drainage" charge as part of all residential and commercial customer sewer bills. With the implementation of the new rate structure, the Collection and Drainage activity, formerly accounted for within the Water Pollution Control Fund, is now accounted for as a separate fund.

The rate structure adopted in 2003 also included rate adjustments to be effective July 1, 2004 and July 1, 2005. Sewer rates were also adjusted for the 2006/2007 year. This was a single year rate change since the results of the plant review were not yet known. Rates were set for a two-year period for 2007/2008 and 2008/2009 based on the preliminary cost estimate for plant improvements. As part of the financing of the Water Pollution Control Comprehensive Plant Facilities Improvement Project, City Council in the spring of 2009 approved rate increases of approximately 5% per year for a four-year period with these rate increases effective July 1, 2009, 2010, 2011 and 2012. Funding for another rate study for 2013/2014 and future years has been included in the 2012/2013 budget.

The Water Pollution Control Fund consists of five different activities, including administration, plant operations, pumping stations, laboratory operations, and biosolids operations. Full-time equivalent employees for these five activities total 22.5 for 2012/2013. The specific employee allocations are detailed in each of the five (5) activity budgets. The following charts show the distribution of budgeted expenditures by activity and by type for 2012/2013:



The past fiscal years have been challenging times for the City in operating its water pollution control system. Major changes have taken place in the operation of the facility, the character of the waste being treated and the volume of waste received. In addition, with the reconstruction and equipment upgrades recently completed, the city is striving to further increase operating efficiency and flexibility as well as maximizing energy utilization at the plant. With careful planning and financial management, the City has provided and will continue to provide an excellent facility which will treat wastewater and meet Federal and State regulations at a reasonable cost.

CURRENT TRENDS AND ISSUES:

The 2011/2012 revised estimate expenditures are over the budgeted amount by \$100,338 primarily due to increased transfers. The revised estimate includes a \$200,000 transfer to the new West Hill Sewer Separation Long-Term Financing Plan Reserve. This increase was partially offset by a \$70,000 decrease in the transfer to the WPCP Replacement Reserve.

The 2012/2013 budgeted expenditures of \$4,397,339 are \$211,044 (5.0%) higher than the 2011/2012 budget. This increase includes the \$200,000 annual transfer to the West Hill Sewer Separation Project Long-Term Financing Reserve, which has again been partially offset by a \$70,000 decrease in the transfer to the WPCP Replacement Reserve. Other significant increases include \$16,000 for chlorine, \$17,700 for landfill fees, and \$14,600 for diesel fuel. Expenditures are detailed in each respective activity budget in the Water Pollution Control fund.

As noted previously, sewer rates are budgeted to increase by 5% for 2012/2013. This is the last of four annual 5% increases in rates needed as part of the Comprehensive Facilities Improvement project financing. During the 2012/2013 fiscal year the City will have another rate study completed which will set rates for 2013/2014 and future years.

GOAL STATEMENT:

To operate the Muscatine Water Pollution Control Operations in a manner to assure that all residential, commercial and industrial wastewater is treated in an environmentally sound, efficient, and cost effective manner to meet the requirements established by Federal and State regulatory agencies.

PERFORMANCE MEASURES:

Fiscal Year Measures		Actual 2008/2009	Actual 2009/2010	Actual 2010/2011	Estimated 2011/2012	Estimated 2012/2013
Million Cubic Feet of Wastewater Treated		255.81	301.01	314.17	275.00	275.00
Carbonaceous Biological Oxygen Demand Treated (1,000 lbs/yr.)		1,887.43	1,334.36	2,258.09	1,900.00	1,900.00
Total Suspended Solids Treated (1,000 lbs/yr.)		3,735.36	3,194.39	4,361.22	3,500.00	3,500.00
Number of Customer Bills	Industrial	96	96	96	96	96
	Non-Industrial	<u>109,648</u>	<u>109,116</u>	<u>109,279</u>	<u>109,800</u>	<u>109,800</u>
	Total	109,744	109,212	109,375	109,896	109,896

Calendar Year Measures	Actual 2008	Actual 2009	Actual 2010	Actual 2011	Estimated 2012
Gallons of Sludge/Number of Acres	4,300,000/ 460	3,929,908/ 432	4,485,451/ 469	3,125,655/ 334	5,000,000/ 530
Lift Station Preventive Maintenance Tasks	8,035	8,832	10,096	10,000	10,000
Lift Station Corrective Work Orders	53	31	57	55	55
Plant Preventive Maintenance Tasks	16,766	16,326	15,869	13,320	10,000
Plant Corrective Work Orders	209	647	283	126	100

RECENT ACCOMPLISHMENTS:

The Pretreatment Program continues to be administered by the Assistant Director. All permitted industries have been inspected and monitored throughout the year and several existing industries will be looked at for permitting in 2012. The Industrial Permit Application was re-written to better evaluate industrial activity and allow for digital completion and submission. The applications had not been updated since 1993. New permits for all industries will be written in 2012. This program continues to be vital to the reduction of pollutants entering the public treatment system and the waters of this community.

The Operations division has transitioned from a 24 hours a day 7 days a week operation to 12 hours a day during the week and 8 hours during weekends and holidays. The computerized SCADA system monitors all vital functions and calls the rotating operator-in-charge who then determines if they need to return to the plant. This new program has eliminated the evening and night shifts which improved efficiency and safety. Overtime has been reduced to only emergency calls and holidays instead of every time there were vacations or sick days. The Operations division logged 725 and 907 overtime hours in 2009/2010 and 2010/2011 respectively. From August to December 2011 they logged only 107 overtime hours, a number which should continue to go down as issues in the new processes are worked out.

The Maintenance division continues to be a model for other plants across the state. Continuous modification of the preventative maintenance program to include all the newly installed processes ensures that equipment will last for decades to come. The computerized program allows personnel to identify what work was done on every item in the plant and to easily track its life expectancy. This reduces cost in equipment replacement as well as emergency call out hours. There have been challenges with on-going problems with the new equipment but staff has been able to answer vendor questions due to excellent oversight.

The Biosolids division applied 3 million gallons of digested material to 332 acres of farm land. This highly sought-after material is a natural additive for agricultural soils that reduces the amount of chemical fertilizers required. The umbilical system has shown to be a great success and big cost savings compared to the old system of trucking the material to surrounding farms. Additional acres will be looked at in 2012 as well as extending the contract for the existing land. The Muscatine Biosolids division was awarded the IAWEA (Iowa Water Environment Association) Biosolids Program Award and will receive recognition at the annual conference. This division also took on the added responsibility of dredging the riverfront this year and was able to get all areas cleaned while keeping on schedule for the biosolids land application.

The Lift Stations division has continued to keep up with preventative maintenance on the 21 lift stations around the City that pump all the water to the Treatment Plant. New equipment at the Papoose Lift Station (the largest lift station) will help clean the sand that inundates the station during heavy rains. This will help keep the system clear and avoid CSO's (Combined Sewer Overflows). This division will be working closely with the sewer separation team during the West Hill Sewer Separation project construction.

The Laboratory division continues to serve the City and surrounding communities with certified water and soil analysis. The lab is certified to sample for the Biosolids program as well as for the WPCP (Water Pollution Control Plant) NPDES (National Pollutant Discharge Elimination System) permit requirements. Local industries are also sampled for compliance with local limits and pollutants of concern. The lab is preparing to expand which will include new equipment to increase testing capabilities and bring in more lab customers. The lab will be vital to setting new permit limits for industries for the 2012 permitting process.

OBJECTIVES TO BE ACCOMPLISHED IN 2012/2013:

- * To complete the plant renovation, get all equipment running to vendor specifications, and ensure that all processes are functioning within expected parameters.
- * To integrate "Lean" principles into all processes and divisions to increase efficiency and reduce waste. **(Management Agenda High Priority)**
- * To build a new standardized Operations and Maintenance manual for the plant to include all the new processes from the plant upgrade.
- * To expand the laboratory to function with the updated equipment necessary for new required testing and to provide a safer environment for employees.
- * To continue to improve the dredging operation and keep the harbor and boat landings operational throughout the year.
- * To re-permit the dredging operations to allow for hydraulic and mechanical solids removal.

- * To evaluate burying of the discharge pipe and utilizing a CDF (Confined Disposal Facility) at the former Hawkeye Lumber site.
- * To evaluate changing the dredging operation by burying the pipe from the harbor to the disposal site and moving from bag dewatering to a CDF.
- * To explore renewable energy options for the biogas created in the new digesters.
- * To begin planning the new dump site project to accept City and commercial vac-and-jet trucks, FOG (Fats, Oils, and Grease) haulers, and other high strength industrial waste haulers to augment income and biogas production.
- * To assist the Public Works department and Stanley Consultants with the planning for the West Hill Sewer Separation project.
- * To re-permit all local industries with new local limit calculations.
- * To continue to assist the Public Works department with storm water issues.
- * To assist the Public Works Department with implementing an upgraded FOG (Fats, Oils, and Grease) program.

WATER POLLUTION CONTROL FUND

STATEMENT OF BOND AND INTEREST REQUIREMENTS

State Revolving Fund Loan Comprehensive Plant Improvement Project \$16,500,000 Issue Dated November 4, 2008

<u>Fiscal Year</u>	<u>Principal</u>	<u>Interest and Fees</u>	<u>Total Requirements</u>
2011/12	\$ 542,000	\$ 519,188 *	\$ 1,061,188
2012/13	560,000	501,573	1,061,573
2013/14	578,000	483,373	1,061,373
2014/15	597,000	464,588	1,061,588
2015/16	616,000	445,185	1,061,185
2016/17	636,000	425,165	1,061,165
2017/18	657,000	404,495	1,061,495
2018/19	678,000	383,143	1,061,143
2019/20	700,000	361,108	1,061,108
2020/21	723,000	338,358	1,061,358
2021/22	747,000	314,860	1,061,860
2022/23	771,000	290,583	1,061,583
2023/24	796,000	265,525	1,061,525
2024/25	822,000	239,655	1,061,655
2025/26	849,000	212,940	1,061,940
2026/27	876,000	185,348	1,061,348
2027/28	905,000	156,878	1,061,878
2028/29	934,000	127,465	1,061,465
2029/30	964,000	97,110	1,061,110
2030/31	996,000	65,780	1,061,780
2031/32	1,028,000	33,410	1,061,410
Total	<u>\$ 15,975,000</u>	<u>\$ 6,315,730</u>	<u>\$ 22,290,730</u>

* Estimated interest for 2011/2012; the actual amount may vary slightly based on the timing of the final loan drawdown.