

**Under Funded and Over Burdened:  
An Analysis of the Impacts of Water Quality Mandates  
On Maumee River Basin Communities**

**MRBPLG**

The Maumee River Basin Partnership  
of Local Governments



**June 2006**

## Table of Contents

Executive Summary.....	1
Introduction.....	1
Environmental and Economic Importance of the Maumee River and Lake Erie.....	1
2004 Cost Survey.....	2
National Trends in Water Quality and Infrastructure Funding.....	2
Identifying Needs.....	4
Economic Impacts to a Struggling Region.....	6
Need for Additional Funding.....	6
Conclusion.....	10

## List of Tables

Table 1: Estimated 20-Year Infrastructure Costs (Millions of Dollars).....	6
Table 2: Priority Funding Projects.....	8

## List of Figures

Figure 1: 2004 and 2006 Estimated NPDES Costs.....	5
Figure 2: NPDES Program Expenditures since August 2003.....	5

## Appendices

Appendix A: Survey and Cover Letter	
Appendix B: 2006 NPDES Cost Survey Data	

## Executive Summary

Since the passing of the Clean Water Act (CWA) and the establishment of the National Pollutant Discharge Elimination System (NPDES) Program in 1972, local governments and industries throughout the United States and in the Maumee River Basin have been mandated to eliminate discharges of point source pollutants to waters, except as allowed under NPDES permits. These permits set limits on the amount of pollutants that can be introduced into a body of water from a given type of operation.

The effectiveness of the NPDES program to date is largely responsible for the improved water quality that Lake Erie and the Maumee River have experienced over the last 30 years. However, the combined effects of aging infrastructure, diminished federal funding for infrastructure, increasingly burdensome regulations, and an increase in population have dramatically increased the burden that water quality improvement programs are placing on local governments of the Maumee River Basin. According to the American Metropolitan Sewer Association (AMSA), local governments have provided 95% of the funding for clean water infrastructure in recent years.

In an effort to publicize and expose the magnitude of the financial burden that these water quality directives pose to Maumee River Basin communities, and to secure a federal funding source that will allow communities to effectively address these important water quality directives, representatives from Maumee River Basin communities were asked to complete a survey regarding their financial needs related to these NPDES requirements. According to survey results, Maumee River Basin communities will spend an estimated \$1.1 billion in an effort to comply with Combined Sewer Overflow (CSO), Sanitary Sewer Overflow (SSO), and Municipal Separate Storm Sewer System (MS4) requirements in the next 20 years. This is in addition to the estimated \$296 million that Maumee River Basin communities have already spent in an effort to fulfill these requirements. In spite of this economic burden, federal funding for the Clean Water State Revolving Fund (CWSRF), the nations primary mechanism for financing water and wastewater infrastructure projects at the federal level, has been reduced by nearly 37% since 2004.

In order to ensure that water quality improvements are balanced with the need for economic growth within the Maumee River Basin, additional federal funding, such as that proposed in the Great Lakes Collaboration Implementation Act of 2006 (H.R. 5100 or S.2545) or the Clean Water Trust Act of 2005 (H.R. 4560), must be allocated to this invaluable region of the country, and that funding must be made available to the regulated urban communities that are bearing an estimated \$1.1 billion burden.

**Introduction**

As the primary tributary to Lake Erie, and home to more than a million people in dozens of counties and municipalities, the Maumee River Basin is a critical resource to an entire region. Over the past 30 years, a variety of federally mandated water quality programs have greatly improved water quality in the Maumee River and Lake Erie. However, these mandates are placing a heavy burden on local governments of the Basin. This report highlights the environmental and economic importance of the Maumee River and Lake Erie, highlights the trend towards decreasing federal funding for wastewater infrastructure projects, and most importantly, exposes the economic burden that water quality mandates are having on Maumee River Basin communities, and calls for the allocation of additional federal funding that will provide regulated urban communities with financial relief.

**Environmental and Economic Importance of the Maumee River and Lake Erie**

The Maumee River Basin is home to over 1.7 million people in portions of 3 states (Indiana, Ohio, and Michigan) and 24 counties. The watershed encompasses more than 4.2 million acres of land (6,600 square miles), and the river itself is the largest tributary to all of the Great Lakes. From its origin in Fort Wayne, Indiana, the Maumee travels 130 miles across the Indiana-Ohio border through Toledo and into Lake Erie. All discharges and any associated pollutants introduced to any waterway in the Maumee River Basin directly impact Lake Erie.

The 11th largest lake in the world, Lake Erie is a critical resource to millions of people throughout the United States and Canada. More than 4 billion gallons of drinking water are withdrawn from the lake each day for consumption by more than 11 million people. In addition to providing drinking water to millions, Lake Erie is also the most productive fishery of all the Great Lakes. According to the Ohio Department of Natural Resources (ODNR), Lake Erie often produces more pounds of fish than all other Great Lakes combined. Annual figures compiled by the ODNR estimate that there are 6.675 million fishing hours spent on the lake each year, generating well over \$500 million to local economies. Additionally, an Ohio Sea Grant survey estimated that visitors to local beaches spend upwards of \$5 million in the local economy annually. Such revenues do not reflect similar activities on the Maumee River.

While recreational uses of the lake are vast, the shipping industry also has a significant impact on the local economy. Since the creation of the Erie Canal in 1825, shoreline communities, such as Toledo, have grown and thrived around the shipping industry. Employing nearly 20,000 Ohioans each year, the shipping industry generates more than \$460 million in annual revenues. According to a study by the Saint Lawrence Seaway Development Corporation, US ports on Lake Erie were responsible for 30,974 direct or indirect jobs in the Great Lakes region, which account for approximately 43% of all direct or indirect jobs associated with US ports on all Great Lakes. Lake Erie ports also generate approximately \$1.7 million in annual revenue, which accounts for approximately 47% of revenue generated by all Great Lakes ports. When compared to any water resource in the United States, Lake Erie and its Maumee River tributary rank as one of our most precious.

Since the passing of the Clean Water Act (CWA) and the establishment of the National Pollutant Discharge Elimination System (NPDES) Program in 1972, local governments and industries throughout the United States and in the Maumee River Basin have been mandated to eliminate discharges of point source pollutants to waters, except as allowed under NPDES permits. These permits set limits on the amount of pollutants that can be introduced into a body of water

from a given type of operation. Specifically, local governments in the region have been forced to comply with unfunded wastewater and stormwater NPDES requirements.

The effectiveness of the NPDES program to date is largely responsible for the improved water quality that Lake Erie and the Maumee River have experienced over the last 30 years. However, the combined effects of aging infrastructure, diminished federal funding for infrastructure, increasingly burdensome regulations, and an increase in population have dramatically increased the burden that water quality improvement programs are placing on local governments.

### **2004 Cost Survey**

In May of 2004, the Maumee River Basin Partnership of Local Governments (MRBPLG) completed a report entitled "Financial Burdens Incurred by Local Governments of the Maumee River Basin In Order to Achieve Water Quality Directives." The report estimated that local governments in the Maumee River Basin would spend more than \$1 billion in coming years to remain in compliance with NPDES Program requirements. Cost estimates in the 2004 report were based on survey responses from communities located in the Maumee River Basin. The report estimated that communities would spend approximately \$881.3 million on Combined Sewer Overflow (CSO) reduction projects, \$102.5 million on Sanitary Sewer Overflow (SSO) elimination projects, and \$41.0 million on Municipal Separate Storm Sewer (MS4) program requirements.

Despite an estimated basin-wide need that exceeded \$1 billion, Maumee River Basin communities felt that the study's results underestimated the financial burden that these water quality directives have on local governments in the Maumee River Basin. In particular, basin communities believed that, because many communities were still in the preliminary planning stages of developing their MS4 programs, they were not fully aware of the fiscal impact that the MS4 program would place on their local communities. As a result, they underestimated the economic impact associated with the program. In addition, the survey did not consider annual operation and maintenance costs associated with wastewater treatment plants, which account for millions of dollars in expenses every year. It was apparent that certain financial burdens were either not considered or were underestimated in the 2004 study.

The goal of this report is not simply to update the 2004 report or identify the exact financial burden of these water quality directives. The goal of the report is to publicize and expose the magnitude of the financial burden that these water quality directives pose to Maumee River Basin communities, and to secure a federal funding source that will allow communities to effectively address these important water quality directives without bankrupting their local communities and citizens.

### **National Trends in Water Quality and Infrastructure Funding**

Since 1987, the Clean Water State Revolving Fund (CWSRF) has been the primary mechanism for financing water and wastewater infrastructure nation-wide. The CWSRF provides financing for a variety of programs including nonpoint source pollution control, watershed protection and restoration, and traditional wastewater infrastructure treatment projects. The CWSRF program is administered by individual States and is annually funded through a grant program that requires a 20% State match. States then utilize the appropriated money to provide both public and private entities with financial assistance to address state determined water quality priorities.

Financial assistance to local communities usually comes in the form of a 20-year loan at or below market rates.

Since its establishment the CWSRF Fund has provided over \$52 billion in funding. However, according to studies conducted by the EPA, the Congressional Budget Office, and the Water Infrastructure Network, national clean water infrastructure needs in the next 20 years could potentially exceed \$400 billion. In September 2002, EPA released a detailed gap analysis, which assessed the difference between current spending for wastewater infrastructure and total funding needs nationally. According to the EPA gap analysis, if there is no increase in wastewater investment, there will be a \$6 billion annual gap between current annual capital expenditures for wastewater treatment (\$13 billion) and projected spending needs (\$19 billion).

In spite of these estimates, federal funding of the CWSRF has actually decreased substantially since 2005. In fiscal year 2005, funding for the CWSRF was cut by approximately 20% from approximately \$1.4 billion to \$1.1 billion. In 2006, the CWSRF budget was reduced by approximately 19% to \$886.8 million. If funded as currently proposed, the 2007 CWSRF budget will be cut by approximately 23% to \$687.6 million.

While federal funding for clean water infrastructure has decreased, local government expenditures have grown and, as this report emphasizes, continue to grow. The American Metropolitan Sewer Association (AMSA) estimates that local governments have provided 95% of the funding for clean water infrastructure in recent years. Additionally, according to the United States Census Bureau, local government expenditures on water and sewer infrastructure exceed all other categories of local government spending with the exception of education. Local expenditures on water and sewer infrastructure exceed local expenditures on police and fire protection, transportation, housing, and economic development just to name a few.

Point source discharges from CSOs, SSOs, and urban stormwater are not the only sources of pollutants impacting the water bodies of the Maumee River Basin and the Great Lakes. Sediment, nutrients, and other pollutants associated with agricultural activities have been linked to substantial water quality problems in the basin. In recognition of this problem, the United States Army Corps of Engineers (USACE) and the United States Department of Agriculture Natural Resource Conservation Service (NRCS) are currently working on a \$6.5 million Western Lake Erie Basin (WLEB) Study, which was funded through a congressional appropriation in 2005. The MRBPLG supports a holistic watershed approach to improving water quality in the Maumee River Basin, and has taken an active role in the WLEB Study. MRBPLG representatives currently serve on the WLEB Partnership Leadership Committee, Operational Committee, and co-chair the Outreach / Public Education Coordination Team.

The MRBPLG is confident that the WLEB Study will result in improved water quality and regional coordination in both the Western Lake Erie Basin and Maumee River Basin. However, the \$6.5 million appropriation will be dedicated primarily to agricultural landowners. While agricultural lands account for approximately 75% of the land use in the Western Lake Erie Basin, the vast majority of the people living and working in the basin are located in municipalities, which are in desperate need of long term financial assistance in order to fulfill costly mandates and address aging and deteriorating wastewater infrastructure.

### Identifying Needs

In order to determine the overall financial burden associated with complying with NPDES mandates, representatives from Maumee River Basin communities were contacted and requested to complete a short survey designed to assess their community's financial needs for compliance with the three NPDES requirements expected to be the most costly in coming years: CSO, SSO, and stormwater discharges from MS4s. The survey, which is included in **Appendix 1**, requested the following information from Maumee River Basin communities:

1. Financial investment made to date (Total dollars spent on compliance with WWTP, CSO, SSO, and MS4 programs as of January 2006).
2. Future estimated costs associated with achieving regulatory compliance with CSO, SSO, and MS4 programs (5-Year Estimate and 20-Year Estimate).
3. Future funding allocated or dedicated solely to achieving regulatory compliance with CSO, SSO, and MS4.
4. Source of allocated funds.

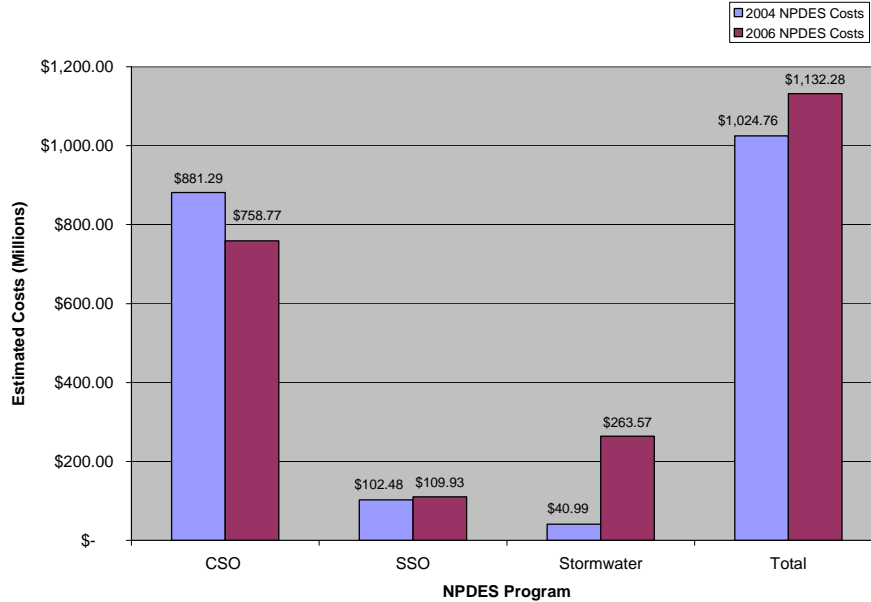
In total, 66 communities were contacted regarding their financial needs related to these NPDES requirements. Of these communities, financial information has been obtained from 23 communities<sup>1</sup>, which represent approximately 1,000,000 residents in the Maumee River Basin. The reported cost for these 23 communities to comply with NPDES requirements over the next 20 years exceeds \$969.7 million. Of this total, approximately \$649.8 million will be spent on CSO related programs and activities, \$94.2 million will be spent on SSO related programs and activities, and \$225.7 million will be spent on MS4 related programs and activities. A table identifying all survey results is provided as **Appendix 2**.

In order to calculate a basin-wide need, the per capita compliance cost (\$970.74) calculated for the 23 communities for which financial information was received was multiplied by the total population of the 66 communities contacted (estimated at 1,166,404), resulting in a basin-wide total need estimated at \$1.132 billion. Approximately, \$758.8 million (67%) is anticipated to be spent on CSO related programs and activities, \$109.9 million (9.7%) is anticipated to be spent on SSO related programs and activities, and \$263.6 million (23.3%) is anticipated to be spent on MS4 related programs and activities.

---

<sup>1</sup> Of the 66 surveys sent to local communities in 2006, a total of 17 were returned. Six communities who submitted financial information in the 2004 report did not resubmit in 2006. For these communities, financial information from the 2004 report was incorporated into the 2006 report.

**Figure 1: 2004 and 2006 Estimated NPDES Costs**

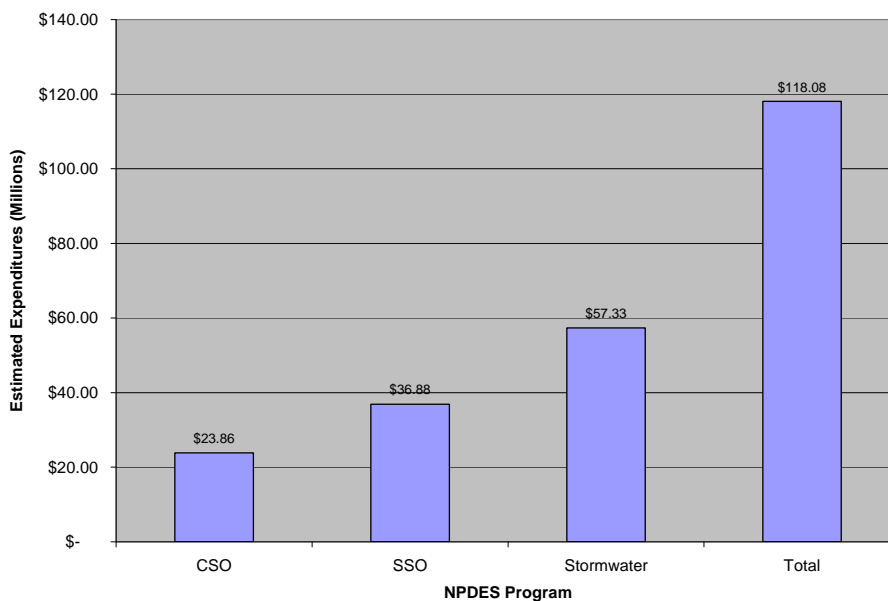


Overall, the estimated basin-wide need associated with achieving these water quality mandates has increased by approximately \$108 million between 2004 and 2006. **Figure 1** compares the estimated basin-wide need as determined by the 2004 and 2006 cost reports. This overall increase in estimated basin-wide need is even more significant considering that since the 2004

cost survey was completed, Maumee River Basin communities have spent an estimated \$23.9 million on CSO related programs and activities, an estimated \$36.9 million on SSO related programs and activities, and an estimated \$57.3 million on MS4 related programs and activities. In total, communities have spent an estimated \$118.1 million on NPDES mandated programs in the past 28 months for an average of \$4.2 million per month and \$50.6 million per year.

**Figure 2** identifies the reported NPDES Program expenditures of Maumee River Basin communities since August of 2003.

**Figure 2: NPDES Program Expenditures since August 2003**



These totals do not include costs associated with annual operation and maintenance of wastewater treatment plant infrastructure. Based on financial data submitted, the median annual per capita operation and maintenance expenditures on wastewater treatment plants for Maumee River Basin communities is \$87.25 per person per year. The City of Defiance

estimates that each wastewater treatment plant customer is currently paying approximately

\$2,571 dollars in utility bills every year. In total, it is estimated that Maumee River Basin communities have invested \$237 million dollars in wastewater treatment plants to date.

In addition to the estimated \$1.1 billion that Maumee River Basin communities will spend in the next 20 years to comply with NPDES Program requirements and the \$237 million already invested in wastewater treatment plant infrastructure, it is estimated that Maumee River Basin communities have already spent approximately \$168.9 million on CSO related programs and activities, \$49.3 million on SSO related programs and activities, and \$77.8 million on MS4 related programs and activities.

As shown in **Table 1**, the total estimated financial expenditure to be made by Maumee River Basin communities on wastewater treatment plant operation and maintenance and NPDES program requirements by 2026 (20 years) will exceed \$2.4 billion.

**TABLE 1: ESTIMATED 20 YEAR INFRASTRUCTURE COSTS (MILLIONS OF DOLLARS)**

Program	Expenditure
WWTP Expenditures to Date	\$ 237.0
Estimated Future WWTP O&M Expenditures (20 Years) <sup>2</sup>	\$ 816.4
Future Estimated NPDES Compliance Expenditures (20 Years)	\$1,132.3
NPDES Compliance Expenditures to Date	\$ 296.0
<b>Estimated Basin-Wide Total Expenditure</b>	<b>\$ 2,481.7</b>

### **Economic Impacts to a Struggling Region**

As shown, new and ongoing National Pollutant Discharge Elimination System (NPDES) mandates are placing a heavy burden on local governments within the Maumee River Basin. In an attempt to offset these burdens, local communities throughout the basin have been forced to either establish new utilities or increase user fees on existing utilities.

The expected enormous utility rate increases required to fund such mandates could not come at a more difficult time. According to the U.S. Bureau of Labor Statistics, Indiana, Ohio, and Michigan ranked 38<sup>th</sup>, 40<sup>th</sup>, and 49<sup>th</sup> respectively in unemployment rates rankings for states in March of 2006.

### **Need for Additional Funding**

Certainly there is a need to provide Maumee River Basin communities with additional funding for infrastructure repair work associated with water quality protection. Realizing this, Michigan Senator Carl Levin and Ohio Senator Mike DeWine have introduced the Great Lakes Collaboration Implementation Act of 2006 (S. 2545). In addition to providing the Great Lakes with protection from invasive species and funding for restoration of wildlife habitat, the bill would also provide additional resources to States and cities for water related infrastructure

<sup>2</sup> Annual wastewater treatment operation and maintenance expenditures were calculated by multiplying the reported annual per capita operating costs for 10 communities by each community's reported population. This total was then multiplied by 20 to determine the estimated 20-year expenditure. Maumee River Basin communities may face additional costs associated with wastewater treatment, but due to limited data, only reported information was utilized to estimate this cost.

improvements. Specifically, the bill would reauthorize the CWSRF and provide \$20 billion over the next five years to assist communities with updating their water and wastewater infrastructure through low interest loans. Similar legislation (H.R. 5100) has also been introduced in the House of Representatives by Vernon Ehlers of Illinois.

This legislation would be very beneficial to communities throughout the Great Lakes Basin, and in particular would be very beneficial to communities in the Maumee River Basin. However, there are several obstacles to the ultimate passage of these bills. The Great Lakes States are represented by 16 Senators and 124 Representatives, and it is imperative that these bills be supported by a vast majority of Senators and Representatives in these states. Currently H.R. 5100 has been co-sponsored by 33 Representatives and S. 2545 has been co-sponsored by five Senators. Four Maumee River Basin Senators, Mike DeWine, George Voinovich, Carl Levin, and Debbie Ann Stabenow, have sponsored or co-sponsored S. 2545. However, Senator Evan Bayh has recently indicated interest in supporting and Senator Richard Lugar has yet to show support for the bill. In addition, only one of the seven Maumee River Basin Representatives -- Marcy Kaptur (OH-9) -- has co-sponsored H.R. 5100. Representatives Mark Souder (IN-3), Mike Pence (IN-6), Joe Schwartz (MI-7), John Boehner (OH-8), Michael Oxley (OH-4), and Paul Gilmore (OH-5) have yet to show support for the bill.

In addition to legislative relief targeted directly towards the Maumee River and Great Lakes Basins, Representative John Duncan (TN-2) has recently introduced the Clean Water Trust Act of 2005 (H.R. 4560), which has been promoted by a number of organizations including, but not limited to:

- The National Association of Towns and Townships
- The Water Infrastructure Network
- The American Society of Civil Engineers
- The Construction Management Association of America
- The National Association of Clean Water Agencies (formerly AMSA)
- American Rivers

If funded, this legislation would provide municipalities and local governments nationwide with an estimated \$7.35 billion annual funding source and would help to reduce the burden that water infrastructure programs are placing on local communities and their rate payers. Currently, this legislation has not been sponsored by any Maumee River Basin Representatives or Senators.

Based upon the results of a March 2005 nationwide public opinion survey conducted by Luntz Research Companies, local rate payers are overwhelmingly in support of such legislation. According to the survey, 86% of Americans support legislation by the U.S. Congress that would create a long-term, sustainable and reliable trust fund for clean and safe water infrastructure. In addition, when given a choice between clean and safe water, roads and highways, and airports and aviation, 71% of respondents indicated that that clean and safe water programs are in greatest need of a dedicated trust fund that would guarantee federal money to help State and local governments pay for maintenance and improvements. Finally, 88% of those surveyed agreed that because water does not follow political boundaries, it is important for the federal government to support improving the quality of our nation's rivers, lakes, and oceans with necessary funding.

To date, there have been several studies designed to evaluate and estimate the overall economic burden associated with water quality directives on a national level. In recognition of the extent of this problem nationally, the MRBPLG acknowledges that all of the estimated \$1.1 billion of economic need that has been identified in this report is not likely to come from the Federal government. However, in order to maximize the water quality and public health benefits that would result if additional federal funding were appropriated to Maumee River Basin communities to address NPDES mandates and wastewater infrastructure needs, the MRBPLG has prepared a list of priority projects that are considered to be crucial to improving water quality and public health in the Maumee River Basin. **Table 2**, identifies the eleven priority projects, that if funded would be most beneficial to water quality and public health in the Maumee River Basin.

TABLE 2: PRIORITY FUNDING PROJECTS

MRBPLG Core Cities – Priority Projects for Funding						
City	Project Program	Project Name	Project Cost	Project Description	Project Duration	Public Benefit
Toledo, OH	CSO	Consent Decree/Equalization Basin	\$27.0 M	This project would involve the construction of a holding basin to be utilized during wet weather flows. It would relieve the high flows to the wastewater treatment plant by holding the wastewater until the treatment plant is able to process it.	26 months	Reduce the amount of raw sewage discharged into the Maumee River.
	CSO	Grit Facility	\$13.9 M	This project would build a grit facility that removes grit from the wet weather flows.	17 months	Removal of the grit provides longer life for wastewater treatment equipment.
	CSO	Consent Decree/Ballasted Flocculation	\$30.0 M	This project would utilize a new technology for wastewater treatment to be used in primary treatment increasing the ability to achieve good solids removal performance at a very high surface overflow rate.	17 months	Improves the overall effectiveness of the wastewater treatment process and ultimately reduces the amount of raw sewage discharged into the Maumee River
Fort Wayne, IN	CSO	Curdes Avenue Area Storm Sewer Separation – Subbasin M18271.	\$ 3.3 M	This would be the first of a series of projects designed to eliminate all combined sewer overflows into the St. Joseph River. This project would involve building new sanitary sewers, rerouting existing home sewers from a rear discharge to a front discharge, and converting the existing combined sewer into storm sewer.	18 months	This project will directly benefit approximately 250 homeowners in the City of Fort Wayne by reducing sanitary sewerage backups into basements. The project will also reduce CSO discharges to the St. Joseph River and will provide the City of Fort Wayne with an opportunity to further identify and enhance solutions associated with sewer separation projects in developed areas.
	CSO	Storm Sewer Separation Projects in Creighton Home, Poplar, and Broad River Neighborhoods (Subbasin K0690A)	\$8.6 M	This project involves sewer separation by constructing new storm sewers. Under this project, stormwater runoff will be removed from existing combined sewers and rerouted to the new storm sewers. The existing combined sewers will continue to transport sanitary flows.	5 years	This project will directly benefit 1,600 homeowners in the City of Fort Wayne by reducing sanitary backups into basements and flooding problems. The project will also reduce CSO discharges to the St. Mary's River.
	CSO	Storm Sewer Separation Projects in Subbasins 022061B-N22005-O22092	\$9.8 M	This project involves sewer separation by constructing new sanitary sewers, laterals and reusing the existing combined sewers for storm flows.	3 years	This project will directly benefit 850 homeowners in the City of Fort Wayne by reducing sanitary backups into basements. The project will also reduce CSO discharges to the St. Joseph River.
Lima, OH	CSO	LTCP Compliance	\$49.0 M	Storage Basin & WWTP Wet Weather Upgrades	15 years	This project will reduce CSO discharges to the Ottawa River.
	SSO	SSO Elimination Plan	\$30.1 M	Pump Station Upgrades and Storage Basins	5 years	This project will eliminate overflows and reduce basement flooding.
Defiance, OH	CSO	Group 2 CSO MH 1043 fresh water separation work	\$4.1 M	SSES, private property evaluations, engineering & design work, construction	3 years	Reduce the amount of raw sewage discharged into the Maumee River
	CSO	Groups 1 & 3 CSO's storm regulators M-6, NE-2, M-7, M-8, & M-9 fresh water separation work	\$2.3 M	SSES, rate study, private property evaluations, engineering & design work, construction	3 years	Reduce the amount of raw sewage discharged into the Maumee River
	CSO	Group 4 CSO's storm water regulators A-7, A-8, & MH 454 fresh water separation work	\$3.0 M	SSES, private property evaluations, engineering & design work, construction	3 years	Reduce the amount of raw sewage discharged into the Maumee River
<b>Totals</b>			\$181.1 M			

**Conclusion**

Appropriate water quality management of Lake Erie and the Maumee River is of widespread economic and environmental importance. Both water bodies have experienced great improvements over the last 30 years, and one of the driving forces behind these improvements has been the NPDES Program. However, even EPA has recognized that water quality in the Great Lakes is at risk of returning to pre-1972 Clean Water Act conditions without a tremendous increase in funding for deteriorating water and wastewater infrastructure in the United States. To date, Maumee River Basin communities have spent an estimated \$296 million in order to comply with NPDES requirements, and despite this financial investment, basin communities are still burdened with more than \$1.1 billion in mandated water quality requirements, and another \$800 million in wastewater operation and maintenance expenditures. In order to ensure that water quality improvements are balanced with the need for economic growth within the Maumee River Basin, additional federal funding must be allocated to this invaluable region of the country, and that funding must be made available to the regulated urban communities that are bearing an estimated \$1.1 billion burden.

**References:**

Copeland, Claudia. *Water Infrastructure Financing: History of EPA Appropriations*. Congressional Research Service. December 31, 2001.

United States Environmental Protection Agency. *Clean Watershed Needs Survey 2000 Report to Congress*. Washington: 2000.

Kirk, Ken. A Matter of Trust. Water Infrastructure Network News. 2004.

Lindsey, Greg. Worgan, Amy. Palmer, Jamie. Financial Needs for Wastewater and Water in Indiana. January 2003.

Luntz Research Companies. Media Release: Americans Overwhelmingly Support Federal Trust Fund to Guarantee Clean Safe Water. March 2005.

Martin Associates, Inc. Economic Impact Study of the Great Lakes St. Lawrence Seaway Study. August 2001.

Ohio DNR. Lake Erie Facts. December 1999.  
<http://www.ohiodnr.com/geosurvey/lakeerie/lefact.htm>

Kyl, Jon. Meeting States Clean Water Infrastructure Needs. March 2004

American Society of Civil Engineers. Report Card For Americas Infrastructure: Wastewater. 2005.  
<http://www.asce.org/reportcard/2005/page.cfm?id=35>

United States Environmental Protection Agency. The Clean Water and Drinking Water Infrastructure Gap Analysis. 2002  
<http://www.epa.gov/owm/gapreport.pdf>