

SANITARY SEWERAGE INFRASTRUCTURE NORTHWEST OHIO – SOUTHEAST MICHIGAN – NORTHEAST INDIANA

**Toledo Metropolitan Area Council of Governments (TMACOG)
Northwest Ohio Mayors & Managers' Association (NOMMA)
Maumee River Basin Partnership of Local Governments (MRBPLG)**

February 2009

Statement of Purpose

TMACOG, NOMMA and MRBPLG serve the communities of Northwest Ohio, Southeast Michigan and Northeast Indiana, at the western end of Lake Erie. All three organizations are associations of local governments. The purposes of this paper are to:

- Address funding and regulatory issues related to combined sewers and sanitary sewerage facilities impacted by wet weather conditions
- Address regulatory and financial hardship issues resulting from sewerage mandates for small unsewered communities
- Inform legislators and governmental agencies of the impacts of sewerage mandates on local economies
- Recommend federal policies to account for the economic impacts of sewerage projects
- Support federal economic stimulus programs to meet the region's infrastructure needs and provide jobs in communities with high unemployment rates
- Provide information on CSO/wet weather infrastructure projects that fulfill economic and environmental goals

The Northwest Ohio - Southeast Michigan – Northeast Indiana Region

TMACOG is a voluntary association of local governments with 140 members that include counties, municipalities, townships, nonprofits, and business. It covers Fulton, Lucas, Ottawa, Sandusky, and Wood Counties in Ohio, and Monroe County Michigan. NOMMA is an association of municipalities throughout northwest Ohio. MRBPLG is a consortium of local jurisdictions in the Maumee River Basin, founded by Fort Wayne and Toledo, which advocates a watershed-based approach to water quality management.

Most of the region is low-lying and flat, historically the Great Black Swamp. Many areas are prone to flooding; northwest winds off Lake Erie can result in streams flowing backwards as much as ten miles upstream.

Soils in northeastern Indiana are some of the most highly erodible so when saturated groundwater infiltrates into sewer systems that may have deteriorated due to age. River flooding in Fort Wayne, especially on the St Mary's River, results in water backing up into tributaries to the point where streams and ditches flow backwards.

As a result, sanitary sewer systems are vulnerable to intrusion by stream and stormwater. Extraneous flows overload sanitary sewerage systems, and result in mandates from EPA. Our inventory includes forty communities of the region that have severe CSO/wet weather problems, with a total infrastructure

need of \$1.153 billion. These are the communities for which we have documentation; the sewerage infrastructure needs of all communities of the region are substantially greater than this figure.

The region's economy has long been based on manufacturing, which has dwindled. In the current economic downturn, employment has eroded further. All three states have unemployment rates above the national average, and the Ohio and Indiana counties of the region have unemployment rates higher than the state.

Wet Weather Impacts on Sanitary Sewerage Systems

Sanitary sewerage systems are intended to collect and treat sewage only. Stormwater runoff is conveyed through separate storm sewer systems. Until the 1950s, especially in the Midwest, a single sewer system, with storm and sanitary combined, was standard design practice. During storms, untreated water was discharged to streams through Combined Sewer Overflows (CSOs). Under the Clean Water Act, EPA requires that most CSO pollution be eliminated.

Abating untreated sewage discharges is primarily a matter of keeping extraneous flows from stormwater out of the sanitary sewer system. A common approach is to separate storm from sanitary by building a new sewer system. However, even separate sewers can overflow as extraneous stormwater enters through cracks, loose joints, manholes, and illicit storm drain connections.

For the purposes of this paper, when we use the term "CSO," we are referring to all infrastructure improvements needed to prevent overloading of sanitary sewerage systems by extraneous stormwater. These include:

- Sewer separation — construction of new, separate sanitary sewers to serve an area that presently has combined sewers.
- Combined sewer overflows in the technical sense: discharges to streams from CSO regulators
- Sanitary Sewer Overflows (SSOs)
- Infrastructure needs identified by EPA through Long Term Control Plans (LTCPs)
- Sewer System Evaluation Surveys (SSESs) – field tests to find and eliminate sources of extraneous flows entering a sanitary sewer system
- Sewer system repairs to eliminate Inflow & Infiltration (I/I) — i.e., extraneous flows entering a sanitary sewer system
- Temporary storage facilities for wet weather flows, allowing for treatment of combined sewage, rather than discharging it untreated
- Wastewater treatment plant improvements to provide treatment capacity for wet weather flows that cannot be eliminated

Small Unsewered Communities

While communities with existing sewer systems are called upon to make improvements, there are still a number of unsewered small communities in the region. These communities typically consist of small, older houses on small lots. Often soil conditions are not well suited for onsite sewage systems, and a small lot means there is not room for a replacement system. A community of 400 or fewer households cannot afford a multi-million dollar sewer system, but 400 failed septic systems are enough to cause a pollution and public health problem.

Clean Water Act Mandates and Economic Impacts

Extraneous flows can cause discharges of untreated sewage from either combined or separate sewer systems. The extraneous flows can also overload wastewater treatment plants, causing them not to meet performance standards. In both cases, EPA issues orders for the community to meet Clean Water Act standards, and may also impose fines.

Repairing CSO infrastructure is expensive. CSOs account for 70% of our region's sewerage capital improvement needs. Under the original Clean Water Act, EPA provided grant funding of up to 85% for sewerage infrastructure. In the 1980s grants were replaced by the Clean Water State Revolving Fund (CWSRF). This program has provided decreased assistance through low interest loans. The CWSRF has been repeatedly cut, with the intention of eliminating it altogether by 2011. From 1984-2005, sewer rates in Ohio more than tripled, rising almost twice as fast as inflation.

For small communities, USDA/Rural Utility Service (USDA/RUS) has provided a package of grants/low interest loans. The program has been effective, but its funding has been steadily cut. Without financial aid, small community sewer projects usually exceed \$10,000 per household and result in sewer rates approaching \$100 per month.

The Clean Water Act does not adequately consider economic impact of mandated sewerage projects. EPA has defined a community's "affordable" sewer rate as not more than 2% of Median Household Income.

Increasing sewer rates weaken the community's economic position. High sewer rates make a community unattractive to employers. At least two communities in the region anticipate that sewer rate increases due to CSO mandates will result in the loss of major employers. Loss of a major business means a decreased user base, and higher sewer rates again for those that remain.

Since passage of the Clean Water Act, Great Lakes water quality has improved significantly. The most heavily regulated wastewater dischargers, municipal and industrial point sources, have sharply decreased their pollutant discharges. The same cannot be said for nonpoint sources. Stormwater runoff is now regulated through EPA's permitting system, but agricultural runoff and onsite systems, especially in suburban/exurban areas, remain largely unregulated. Studies in northwest and northeast Ohio indicate roughly a 25% overall failure rate for onsite sewage systems. Two streams that flow through Toledo receive CSO discharges in the city, but both fail water quality standards for bacteria far upstream of the CSO areas before they reach the city.

Recommendations

- We support directing economic stimulus grants to sewerage infrastructure projects, especially CSOs and small unsewered communities. These projects will greatly benefit the region's stressed economy and high unemployment through near-term design and construction work. They will replace deteriorating infrastructure dating to the 1950s or earlier with facilities that meet modern environmental standards. Projects will benefit the region's economy for decades to come by supporting clean water for drinking, industry, recreation, tourism, and a healthy Great Lakes ecosystem. The Great Lakes Regional Collaboration Strategy notes that Great Lakes boating, fishing, hunting, and wildlife watching alone generate an estimated \$50 billion in economic activity annually.
- To achieve the goal of near-term economic benefit, funding mechanisms will need to be greatly streamlined.
 - The CWSRF, as it currently functions, needs to be streamlined to be effective as a timely mechanism for economic stimulus. Secondly, it is a loan program, whose funds must be paid back with interest. That means it will result in communities raising sewer rates just

at the time we are trying to create private sector jobs. We recommend considering these options:

- If the CWSRF is used as an economic stimulus mechanism, it must be streamlined to get funding to communities who need it much more quickly than the current program. Second, it cannot burden economically stressed communities with increased debt. If the SRF mechanism is used for economic stimulus, it needs to provide zero percent or negative interest loans to communities.
- CSO infrastructure grants directly from US EPA to communities under CWA §201 (Construction Grant program). This program is similar to the CWSRF, except that it provides grant funding. This program, too, would need to be streamlined to be an effective economic stimulus mechanism, and provide funding to communities in a timely fashion. CWA §201 grants should be awarded as block grants to state agencies, and states administer individual grants to local jurisdictions. The state agencies that administer CWSRF loans should also administer CWA §201 grants.
- A program similar to the US EPA State and Tribal Assistance Grant (STAG) program; or
- The US Army Corps of Engineers may serve as a source of federal funding for both economic stimulus and long-term sewerage improvements, though a mechanism such as the WRDA §594 authority, which provides direct reimbursements for wastewater improvements; or
- A direct grant program to communities through EDA
 - Provide additional grant funding for small community sewerage infrastructure through the USDA/RUS Revolving Fund Program
- We recognize that the federal budget is subject to many demands, and increased funding may not be available. The budgets of state and local governments are equally stressed. This realization needs to be reflected in EPA's CSO strategy. The federal government needs to be a partner with state and local governments in CSO projects.
- Loans from governmental agencies, even low-interest loans, are not the solution. They just transfer the debt burden to our local governments. Our local governments, particularly water and sewer utilities, have begun assuming more debt than local economies can support.
- The federal government should participate in funding projects by funding at least a base percent of mandated sewerage projects through grant funding. Implementation schedules should be based on available grant funding. The Clean Water Act has contributed greatly to the restoration and protection of the Great Lakes, but the federal government must recognize the economic reality of implementing it. The criteria for an "affordable" sewerage project should be based on comprehensive economic factors, rather than a set percentage of Median Household Income (MHI). Sewerage mandates should take into account the point of diminishing returns, or cost/benefit analysis of environmental benefit for expenditure of money. In particular the criteria avoid imposing an economic or competitive disadvantage on local businesses.
- In summary, federal funding for CSO projects should include these points:
 - As a matter of policy, the federal government should partner with local communities by providing a base percent of CSO infrastructure costs.
 - If federal grant funds are not available, a community's implementation schedule should be extended until grant funds are available.

- Redefine criteria for “affordable” sewerage projects based on community economic impact.
- When the EPA mandates sewerage improvements under the Clean Water Act, the federal government needs to be a partner with local governments by providing grant funds. Communities that do not receive federal grant funds should instead be granted a moratorium on CSO mandates until a new implementation schedule can be developed based on the redefined “affordability” criteria that account for community economic impact.

Sewerage Infrastructure Needs of Northwest Ohio / Southeast Michigan / Northeast Indiana

The following table lists communities of the region that have identified major sewerage infrastructure needs.

FPA – Facility Planning Area: an area served by an existing or planned central wastewater treatment plant. In most cases an FPA includes all or part of several political jurisdictions. Typically, the wastewater plant is owned by a central municipality. That municipality is part of the FPA, but so are present and future service areas of surrounding townships.

County – the county or counties where the FPA is located. All counties are in Ohio unless noted.

Total Cost – Total cost of all identified sewerage infrastructure needs. The total cost may include several or many individual projects. Please inquire for details.

MHI (2000) – the Median Household Income as reported in the 2000 Census. This figure is available for local jurisdictions only once a decade through the Census. The figure given is for the central political jurisdiction of the FPA. Median means that half of the households earn more than that figure, and half earn less — not the same as average. Some of the smaller communities are not incorporated as municipalities, and therefore have no MHI figure.

Households – number of residential households in the entire FPA

\$/Household – Total project cost divided by the number of households

For More information

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**CSO and Unsewered Area Infrastructure Needs
NW Ohio – SE Michigan – NE Indiana**

FPA	COUNTY (Ohio unless noted)	Total cost	Project	MHI (2000)	Households	\$/household
Allen County	Allen / IN	\$9,400,000	CSOs	\$47,692		
Auburn	Dekalb / IN	\$13,608,116	CSOs			
Ayersville	Defiance	\$4,000,000	sewer system to eliminate septic systems			
Bedford Township	Monroe / MI	\$10,000,000	Preliminary cost estimate: wastewater plant rehabilitation, I/I	\$59,835	9,769	\$1,024
Berne	Adams / IN	\$14,000,000	CSOs	\$45,690		
Bowling Green	Wood	\$11,229,400	CSOs	\$30,599	12,394	\$906
Clyde	Sandusky	\$4,925,000	CSOs	\$39,764	3,413	\$1,443
Curtice/Williston	Ottawa, Lucas	\$2,330,000	Eliminate septic systems	na	172	\$13,547
Danbury Township	Ottawa	\$1,223,250	Sewer system upgrades, eliminate septic systems Extraneous flows	\$42,188		
Decatur	Adams / IN	\$5,625,000	CSOs	\$35,491		
Defiance	Defiance	\$60,000,000	CSOs	\$41,670	6,600	\$9,091
Elmore	Ottawa, Sandusky	\$6,722,125	Replace trunk sewer (CSO), replace WWTP	\$40,172	763	\$8,810
Fayette	Fulton	\$8,250,000	CSO LTCP improvements: sewer separation and wastewater treatment plant improvements	\$32,115	540	\$15,278
Findlay	Hancock	\$21,500,000	CSOs	\$40,883		
Fort Wayne	Allen / IN	\$236,000,000	CSOs	\$42,734		
Fostoria	Wood, Hancock, Seneca	\$70,000,000	CSOs	\$31,166	7,204	\$9,717

**CSO and Unsewered Area Infrastructure Needs
NW Ohio – SE Michigan – NE Indiana**

FPA	COUNTY (Ohio unless noted)	Total cost	Project	MHI (2000)	Households	\$/household
Fremont	Sandusky	\$77,825,000	CSOs, eliminate septic systems	\$34,051	11,606	\$6,706
Genoa	Ottawa, Lucas, Sandusky	\$2,100,000	Eliminate septic systems	\$43,750	1,927	\$1,090
Gibsonburg	Sandusky	\$5,442,000	CSOs	\$40,986	1,074	\$5,067
Green Springs	Sandusky, Seneca	\$1,216,296	CSOs	\$33,553	500	\$2,433
Helena	Sandusky	\$2,500,000	Eliminate septic systems	\$37,292	104	\$24,038
Lima	Allen / OH	\$45,500,000	CSOs	\$27,067		
Napoleon	Henry	\$90,000,000	CSOs	\$37,467	3,966	\$22,693
North Baltimore	Wood	\$15,173,319	CSOs	\$38,507	1,426	\$10,640
Oak Harbor	Ottawa	\$3,790,000	CSOs, eliminate septic systems	\$45,275	1,834	\$2,067
Oregon	Lucas, Ottawa	\$1,228,675	SSES and I/I removal Phase I	\$45,777	11,979	\$103
Otsego	Wood	\$1,400,000	New Otsego WWTP, eliminate septic systems	na	241	\$5,809
Paulding	Paulding	\$8,000,000	CSO LTCP improvements, sewer separation	\$35,943	1,386	\$5,772
Park/Five Span Bridge Area	Defiance, Paulding	\$15,000,000	Sewer project to eliminate septic systems.			
Pemberville	Wood	\$2,500,000	CSOs, replacement WWTP	\$50,938	1,189	\$2,103
Perrysburg	Wood	\$30,126,000	CSOs, eliminate septic systems, upgrade WWTP	\$62,237	9,947	\$3,029
Port Clinton	Ottawa	\$10,500,000	CSOs	\$35,564	4,150	\$2,530
Put-in-Bay	Ottawa	\$6,493,000	Eliminate septic systems, package	\$52,917	780	\$8,324

**CSO and Unsewered Area Infrastructure Needs
NW Ohio – SE Michigan – NE Indiana**

FPA	COUNTY (Ohio unless noted)	Total cost	Project plants	MHI (2000)	Households	\$/household
Reading	Hillsdale / MI	\$2,200,000	CSOs			
Swanton	Lucas, Fulton	\$7,000,000	CSOs	\$44,127	1,424	\$4,916
Toledo	Lucas, Monroe, Wood	\$321,645,000	CSOs, eliminate septic systems	\$32,546	154,690	\$1,653
Wauseon	Fulton	\$15,000,000	CSO LTCP improvements	\$39,591	2,706	\$5,543
West Millgrove / Hatton	Wood	\$2,300,000	Eliminate septic systems	\$50,625	56	\$41,006
Wightman's Grove	Sandusky	\$1,430,000	Eliminate septic systems	na	100	\$14,300
Woodville	Sandusky	\$5,607,858	CSO	\$47,039	935	\$5,998
Totals		\$1,152,790,039				

Sources:

- “208” *Areawide Water Quality Management Plan*, TMACOG 2009
- Personal communication, ARCADIS, 2009
- “Under Funded and Over Burdened: An Analysis of the Impacts of Water Quality Mandates on Maumee River Basin Communities,” Maumee River Basin Partnership of Local Governments, June 2006 (2006 and 2004 data)