

Sewage Warning!

What the Public Doesn't Know About
Sewage Dumping in the Great Lakes



Ohio PIRG
Education Fund
May 2005

Acknowledgments

Sewage Warning!

What the Public Doesn't Know About Sewage Dumping in the Great Lakes

Written by Mike Shriberg, Great Lakes Advocate with Ohio PIRG Education Fund
"Around the Lakes" Report Series
May 2005

© 2005, Ohio PIRG Education Fund

This report is part of the state Public Interest Research Groups "Around the Lakes" Series and is funded in part by the Healing Our Waters – Great Lakes Coalition which receives generous support from the Wege Foundation.

Significant research and writing assistance was provided by Rebecca Reynolds, MS student in the University of Michigan's School of Natural Resources & Environment.

The author would like to thank the following people for their insights and/or review of this report: Laurel O'Sullivan of the Natural Resources Defense Council; Leila Monroe of the Environmental Integrity Project; Tony Dutzik of the Frontier Group; Frances Canonizado of Illinois PIRG; Christy Leavitt of U.S. PIRG; Erin Bowser of Ohio PIRG; Jen Giegerich of WISPIRG; Brian Imus of PIRGIM.

Photos courtesy of Public Interest GRFX, U.S. Geological Survey, Portland Bureau of Environmental Services, Erin Yakunich, putinbayphotos.com, New York Department of Environmental Protection, Metropolitan Water Reclamation District of Greater Chicago, City of Franklin, PA.

The author alone is responsible for any factual errors. The opinions expressed in the report are those of the Ohio PIRG Education Fund and do not necessarily express the views of our partners and funders.

The state PIRGs are an alliance of state-based, citizen-funded organizations that advocate for the public interest. The state PIRGs' mission is to deliver persistent, results-oriented activism that protects the environment, encourages a fair marketplace for consumers and fosters responsive, democratic government. Each state Public Interest Research Group is independent and locally based. Our Great Lakes Program leverages the resources of state PIRGs to advocate for protection and restoration of the Lakes.

To receive a copy of this report, please visit our website or contact the author at:
36 West Gay St., Suite 315, Columbus, Ohio 43215
Phone: (614) 460-8732 • info@ohiopirg.org
mshriberg@pirg.org • www.ProtectTheGreatLakes.org

Table of Contents

Executive Summary	4
Sewage in Our Waters	6
Causes and Extent of Dumping	7
Health & Ecological Impacts	8
Government Inaction	8
Dumping Notification Needed to Protect Public Health	9
State Sewage Right-To-Know Summary Chart	11
Results: State-by-State Assessments	12
Michigan: A-	12
Indiana: B+	13
New York: B-	14
Minnesota: C+	15
Pennsylvania: C-	16
Illinois: C-	17
Wisconsin: D+	18
Ohio: D-	19
Conclusion	21
Sewage Solutions	23
Great Lakes Restoration	25
Notes	27

Executive Summary

More than 30 years after passage of the Clean Water Act and despite the fact that over 7 million people become sick each year from waterborne illnesses, over 850 billion gallons of untreated or partially treated sewage are being released into U.S. rivers, lakes and streams every year. In the Great Lakes, this problem is particularly severe: sewage dumping is a major source of water quality degradation and attendant beach closings, wildlife diebacks and human health problems.

Despite the known risks associated with sewage dumping, citizens in the Great Lakes are often not told when sewage is being dumped. Most states around the Great Lakes have weak, nonexistent or unevenly enforced sewage dumping public notification laws and regulations. Citizens deserve to know when the waterways in their neighborhoods are unsafe because of sewage dumping; they also deserve to know what is being done to stop this problem and how to protect their health. Currently, many citizens are being denied this right and, thus, exposed unknowingly to contaminated water.

The elements of a strong dumping right-to-know program include direct, immediate public notification via multiple methods

as well as prenotification of potential dumping, annual reports that detail the extent of the problem, and a public education and outreach program that teaches citizens how to avoid sewage contamination. Ranking statewide sewage dumping laws/regulations and their implementation against these criteria reveals the following:

Michigan (A-): Best overall law, although implementation needs to be improved.

Indiana (B+): A model for direct public notification, but misses some types of dumping.

New York (B-): Some strong requirements, but significant loopholes.

Minnesota (C+): Notification system needs to be more systematic and coordinated.

Pennsylvania (C-): Notification is not comprehensive and does not reach public directly.

Illinois (C-): Scattered approach needs to be strengthened and institutionalized.

Wisconsin (D+): Vague rule needs to be expanded, clarified and codified.

Ohio (D-): No significant statewide public notification program exists.

While notification is important to protect citizens from the hazards of sewage dumping, the only way to truly protect public health over the long-term is to stop the regular release of raw or partially untreated sewage. To stop sewage dumping, three things need to happen:

- 1) Communities need to enact comprehensive sewage dumping solutions that focus on preventing stormwater from entering sewage systems as well as the proper operation and maintenance of sewage infrastructure.
- 2) Government agencies need to provide more funding for sewage infrastructure and ensure that funding is used effectively.
- 3) Environmental agencies need to enforce laws that require long-term

elimination of overflows and short-term penalties for non-compliance.

One promising development in the effort to stop sewage dumping is the recent creation of the Healing Our Waters – Great Lakes Coalition and the EPA-led Great Lakes Regional Collaborative. Both efforts are in the process of creating a fundable plan to restore the Great Lakes, including the “virtual elimination” of sewage dumping. The outcomes from these processes will shape the future of sewage dumping in the Lakes.

Overall, preventing sewage dumping is not a technological issue, but rather it is an issue of political will, citizen activation, funding and creative thinking. Until the day comes when wastewater treatment plants stop dumping hazardous sewage, Great Lakes states need to enact comprehensive public notification programs to protect the health and well-being of its citizens.

“Civilized people should be able to dispose of sewage in a better way than by putting it into drinking water.”

— President Theodore Roosevelt, 1910

Sewage in Our Waters

The dangers of untreated or partially treated sewage are well-known. The bacteria, viruses, worms and other unspeakable and hazardous things that contaminate water are estimated to make over 7 million people sick each year in the U.S.¹ People become sick when sewage contaminates drinking water and food as well as swimming, fishing and boating areas. Moreover, wildlife and ecosystems are devastated

by the pathogens and other hazards present after a raw or partially treated sewage release.

Yet, over 30 years after passing the Clean Water Act, the U.S. is still dumping over 850 billion gallons per year of untreated sewage into our rivers and lakes.² In the Great Lakes, this problem is particularly and increasingly severe. According to a 2002 report by the EPA, if current national trends continue, by 2025 pollution from

Figure 1. Combined Sewage Overflow (CSO) communities in the Great Lakes states



If current national trends continue, by 2025 pollution from sewage will reach historically highest levels ever (experienced in 1968) reversing all the progress from the Clean Water Act.

sewage will reach historically highest levels ever (experienced in 1968) reversing all the progress from the Clean Water Act.³

Causes and Extent of Dumping

Sewage is typically released into aquatic ecosystems after a rainstorm or snowmelt because the sewage treatment capacity is overwhelmed by the volume of inflowing water. For the purposes of this report, the term “sewage dumping” is used to encompass all three types of sewage overflows:

- 1) **Combined Sewage Overflows (CSOs):** Combined sewer systems carry sewage and stormwater in the same pipes. During CSOs, stormwater picks up toxins from businesses, homes, yards, parking lots and streets, mixes it with sewage, and bypasses wastewater treatment plants to release this noxious concoction directly or with minimal treatment into streams, rivers and lakes.
- 2) **Sanitary Sewer Overflows (SSOs):** If storm sewers are separated from sanitary sewers (i.e., sewers that only carry waste from toilets and sinks), SSOs occur when the sewage bypasses treatment, typically because storm water infiltrates and overloads the antiquated collection system.
- 3) **“Blending” (also called “bypasses” or “slipstreaming”):** Blended overflows occur when wastewater treatment

plants do not use secondary treatment, which is the critical step to removing many pollutants, and release this mostly untreated sewage combined with fully treated sewage. “Blending” is the EPA’s euphemistic term for these releases of hazardous sewage.

The immediate cause of all types of overflows is typically inflow of rainwater from rainstorms or snowmelt but can also include line breaks, sewer defects, poor operation and maintenance, inadequate design and power failures. However, the larger issue is that overflows are designed into sewer systems and are exacerbated by expanding populations and increases in impervious surfaces. In other words, our sewage systems are designed to release raw or partially treated sewage.

While the exact extent of sewage dumping is largely unknown since the EPA and state agencies have been negligent in tracking overflows, EPA reports that there are 9,348 CSO outfalls in 32 states, with releases concentrated in the Great Lakes states (PA=1,631; OH=1,378; NY=1,032; IN=876; IL=742, MI=262; WI=132; MN=11; Total=6064, 65% of U.S. total).⁴ Figure 1 shows the 575 communities in the Great Lakes states which have permitted CSOs.⁵ The data on SSOs are less complete, but EPA estimates there are between 23,000 and 77,000 events per year, releasing 3-10 billion gallons of untreated sewage.⁶ There is no comprehensive or state-specific data on sewage blending. Overall, approximately 7.5% of all sewage collected by wastewater systems is not

properly treated, despite the requirements for full treatment in all but extreme circumstances under the Clean Water Act.⁷

Health & Ecological Impacts

Sewage dumping in the Great Lakes is a major cause of water quality degradation and attendant beach closings as well as human health problems. Pollutants from sewage dumping include:

- Pathogens (such as bacteria, parasites and viruses)
- Toxins (including heavy metals and pesticides)
- Nutrients
- Pharmaceuticals
- Oxygen-depleting Chemicals
- Suspended Solids
- Trash/Waste/Grease/“Floatables”

Health hazards to people from sewage dumping occur through direct contact with contaminated water as well as food and drinking water contamination. As mentioned previously, EPA estimates that over 7 million people get sick each year from sewage dumping. Most famously, over 400,000 people became ill during a 1993 cryptosporidium outbreak in drinking water in Milwaukee. Impacts are especially severe on pregnant women, children, elderly and immune-impaired individuals, who represent 20% (and growing rapidly) of the U.S. population. Impacts of sewage dumping on wildlife and aquatic organisms are largely unknown, although sewage dumping increases pollution loading in already burdened waterways in the Great Lakes and can disrupt ecosystem functioning through hypoxia, algal blooms, toxins (leading to tumors and birth/development defects), contaminating sediment, etc.

Economic costs from sewage dumping include:

- Increased costs for treating drinking water
- Clean-up costs for contaminated sites
- Property value losses
- Health care and worker productivity loss from illness
- Loss of revenue from recreation and tourism.

In 2003, there were Great Lakes beach closings and advisory days for 1,854 beach days.⁸ Overall, EPA estimates that the loss of income from beach closings is valued at \$1-\$2 billion per year and economic losses due to illness from sewage dumping are valued at \$28 billion per year across the U.S.⁹

Government Inaction

The Clean Water Act calls for the elimination of untreated or partially treated sewage releases into the waters of the U.S. The permit system established under the Act is called the National Pollution Discharge ELIMINATION System (NPDES), yet sewage dumping continues to rise. Incredibly, EPA is attempting to loosen standards for sewage overflows. EPA is considering a “Sewage Blending Guidance” that would sanction the routine release of “blended” sewage, despite a clause in the Clean Water Act that makes raw or diluted sewage releases illegal except in extreme circumstances. In addition, funding for the Clean Water Act’s State Revolving Fund (SRF), which provides low-interest loans to communities for wastewater treatment and other water projects, was slashed in the Bush Administration’s proposed fiscal year 2005 budget by \$500 million (from \$1.35 billion in FY ’04), but was restored to \$1.1 billion by Congress (18% cut overall). The Bush Administration’s proposed FY ’06 budget cuts the SRF to \$730 million, the largest cut in any EPA program.

Dumping Notification Needed to Protect Public Health

Despite the serious health risks associated with sewage dumping as well as the legal requirements for full treatment, wastewater treatment plants often do not inform citizens and government officials when sewage releases occur. State environmental agencies are frequently to blame for these breakings of public trust because they are empowered yet often do not enforce public notification and right-to-know (RTK) provisions. State Legislatures can remedy this situation, but typically fail to, thus leaving citizens wide open to exposure to sewage.

Wastewater treatment plants that do not inform citizens when they are dumping sewage are violating a federal regulation. The EPA has established a set of “Nine Minimum Controls” that wastewater treatment plants with CSOs are supposed to follow in order to obtain a NPDES permit to discharge waste. One control is “Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts.” The intent is to “inform the public of the location of CSO outfalls, the actual occurrences of CSOs, the possible health and environmental effects of CSOs, and the recreational and

commercial activities (e.g., swimming and shellfish harvesting) curtailed as a result of CSOs.”¹⁰ The EPA suggests postings at outfalls, affected waters and protected areas as well as letters to affected residents, notification of public officials and media, and the operation of a telephone hotline. Unfortunately, most wastewater treatment plants ignore the EPA’s vague regulation and states have not clamped down on this violation. Moreover, this guidance does not officially extend to SSOs or, arguably, blending, so states are left to design their own procedures. While states often monitor beach closings resulting from sewage dumping, as required under the BEACH Act, the closings occur hours or even days after a sewage release and thus are largely ineffective at protecting public health.

The profiles in this report detail how each state is managing its RTK responsibility. Citizen knowledge of sewage dumping is essential not only to protect public health in the short-term but also to create support for stopping sewage dumping in the Great Lakes over the long-term. The bottom line is that a serious public health threat—particularly to children—is being largely ignored and thus is getting worse.

The chart on the following page summarizes state performance and rankings on the elements of a strong statewide sewage dumping notification program. These elements include direct, immediate public notification of all types of dumping (CSOs, SSOs, blending/bypasses) to different constituencies and agencies via multiple

methods, as well as prenotification, annual reports from each sewage treatment plant and from the state, and a public education program to teach citizens to avoid the water after dumping occurs. These are the criteria against which state programs are evaluated.



Sewage dumping site in Pennsylvania

State Sewage Right-To-Know Summary Chart

	Michigan	Indiana	New York	Minnesota	Pennsylvania	Illinois	Wisconsin	Ohio
Types of Dumping Included								
Sanitary Sewer Overflow (SSO)	+	-	+	+	-	-	+	-
Combined Sewer Overflow (CSO)	+	+	+	+	+	+	-	-
Blending/Bypasses	+	-	+	+	-	-	+	-
Must Notify								
State Environmental Agency	+	+	+	+	+	+	+	+
Health Department	+	+	+	-	-	-	-	+
Downstream Communities	+	+	-	+	-	-	-	-
Media	+	+	-	+	-	-	-	-
Public (opt-in)*	-	+	-	+	-	-	-	-
Notification Methods								
Signs at Every Overflow Site	-	+	+	+	-	-	-	-
E-mail Notification	-	-	-	-	-	-	-	-
Phone Hotline	-	-	+	-	-	-	-	-
Website	+	-	-	-	-	-	-	-
Public Education Program	-	-	-	-	-	-	-	-
Prenotification of Dumping								
	-	+	-	-	-	-	-	-
Annual Report from Each Sewage Treatment Plant								
	-	-	+	-	+	-	-	+
Annual Report from State								
	+	-	-	-	-	-	-	-
GRADE**	A-	B+	B-	C+	C-	C-	D+	D-
* Public (opt-in) means that sewage treatment plants have a system where anyone can sign up to be notified about dumping.								
** The grade takes into account all of the factors above plus the implementation of notification statewide and in key urban areas. Therefore, it is a qualitative measure.								
NOTE: Credit is given in this chart when there is a law or official policy/code.								

Results: State-by-State Assessments

Michigan: A-

Best overall law, although implementation needs to be improved.

Michigan has, arguably, the strongest sewage dumping public notification and RTK provisions in the Great Lakes. Under state law, all wastewater system operators must report within 24 hours that sewage dumping is occurring or has occurred to a major local newspaper, county or regional health departments, downstream communities and the Michigan Department of Environmental Quality (MDEQ).¹¹ If the discharge poses a public health threat, the health department issues a public health advisory to notify people of the dangers associated with water contact.¹² Once the dumping has ended, the wastewater treatment plant operator must provide public information about: 1) the volume and quality of the discharge, 2) the reason for the discharge, 3) the waters or land area, or both, receiving the discharge, 4) the time the discharge began and ended, and 5) verification of the municipality's compliance status with its permit and applicable state and federal statutes, rules, and orders.¹³ Perhaps most

importantly, the MDEQ is required to maintain a website “promptly” listing: 1) the volume and quality of the discharge, 2) the time the discharge began and ended, 3) receiving waters and/or land affected; 4) a description of actions taken by MDEQ to address the discharge, 5) whether the system is subject to a schedule of compliance, and 6) any other information the MDEQ deems relevant.¹⁴ This website is available at <http://www.deq.state.mi.us/csosso/>. Finally, the MDEQ annually publishes a report compiling and detailing reported CSO and SSO events. Michigan is the only state in the Great Lakes with this requirement.

In many ways, Michigan's public notification and RTK laws and their implementation can serve as a model for the rest of the Great Lakes states. However, five issues remain:

- 1) Clean Water Action found in a 2001 report that the publicly available information on sewage dumping through the MDEQ's website did not

accurately capture all of the sewage dumping occurring.¹⁵ There has not been a follow up study to determine whether these inaccuracies have been corrected.

- 2) Michigan does not engage in public education and notification about dumping other than through the website, thus lacking signs, a phone hotline, e-mail notification and a public “opt-in” for direct notifications.
- 3) While the statewide annual report is useful, Michigan does not require each wastewater treatment plant to issue an annual report, so local information is difficult to find and characterize. A bill proposed in the Michigan Senate would rectify this situation, but it has languished in Committee.
- 4) It is not clear from Michigan’s public notification system when a sewage release is from blending as opposed to an SSO.
- 5) Michigan does not require notification when a release is predicted, only “promptly” after it occurs.

Recommendation: MDEQ needs to use multiple methods for notification in

addition to its website and ensure the accuracy of these methods, including separating blending from other forms of dumping. Michigan’s Legislature should require each wastewater treatment plant to produce and distribute an annual report on sewage dumping as well as provide prenotification before expected releases, signs at every outfall, a phone hotline with updated dumping information and a public option to receive e-mail notifications about each overflow.

In many ways, Michigan’s public notification and RTK laws and their implementation can serve as a model for the rest of the Great Lakes states.

Indiana: B+

A model for direct public notification, but misses some types of dumping

Indiana has recently moved from a laggard on public notification of sewage dumping to an emerging leader, largely with the passage in 2000 of new standards for the Indiana Department of Environmental Management’s (IDEM) dumping notification program.¹⁶ Under the new standards, passed through the Legislature with the urging of the nonprofit organization Improving Kids’ Environment,

wastewater treatment plant operators must notify the affected public, anyone who requests notification, and local health departments about CSOs.¹⁷ The facility must also notify IDEM, which will then notify relevant state and local government agencies. In addition, drinking water suppliers with intakes within 10 river miles downstream of each CSO outfall must be informed.¹⁸ If the discharge might be a threat to human

health or aquatic animals, IDEM informs the media within 48 hours. The facility must also annually ask newspapers, television and radio stations, and any other interested people if they would like CSO notification. Finally, Indiana is the only state in the Great Lakes to require prenotification of sewage dumping. Notification must be provided when a discharge is occurring or if a discharge is expected based on predicted or actual precipitation or snow melts. However, the specifics of what is required in the notification are not spelled out by the new standards, which also do not cover SSOs or blending.

Indiana does a particularly good job of requiring signage. Signs must be posted at access points to affected waterways, including boat ramps, bridges, parks, and school yards and green spaces.¹⁹ The signs must state or be equal in meaning to: “Caution—Sewage or Wastewater Pollution. Sewage or Wastewater may be in this water during and for several days after periods of rainfall or snow melt. People who swim in, wade in, or ingest this water may get sick. For more information, please call [insert local sewer authority, telephone number, and, if available, a Web site address].”

The city of Indianapolis represents a model of how to implement public

prenotification laws. When the city anticipates a rainfall of .25”, it sends an e-mail notice to citizens who have signed up and provides a phone number with updates for citizens who call in.^{20, 21}

Despite the strengths of Indiana’s sewage dumping RTK programs, significant weaknesses remain:

- 1) The program only applies to CSOs, leaving the public in the dark about SSOs and blended releases.
- 2) Indiana does not require standardized reporting of sewage dumping and thus statewide and local cumulative data are not collected for public distribution.
- 3) Indiana does not have a website or other means of public notification in addition to the public “opt-in” and government notification.
- 4) Some communities have reportedly not made a good-faith effort to implement the RTK provisions.

Recommendation: Indiana should amend its recent code changes to include SSOs and blending, require a statewide website and local hotlines, and require annual public reporting.

New York: B-

Some strong requirements, but significant loopholes.

New York has a unique tiered system of sewage dumping notification. Oral notification to the Department of Environmental Protection (DEP) and local health department is required within 2 hours “for discharges that would affect bathing areas during the bathing season, shellfishing or public drinking water intakes.”²² This immediate notification is

required unless the dumping is “due to a properly operating, wet weather combined sewer overflow or a discharge in accordance with a department approved plan for managing wastewater (provided that such plan is in compliance with applicable law and regulation).” For all other CSOs, SSOs and blended releases, notification to the DEP is required within 24 hours with the same

exception listed above. If notification is required, it includes the location, receiving water, estimated volume, characteristics and efforts taken to address the issue. Moreover, within 5 days, all wastewater treatment plants must provide a full report to the DEP. Finally, all facilities must provide quarterly monitoring reports and all records of dumping for public review.²³

New York is a leader in signage for sewage dumping and other water discharging activities. All factories, sewage plants, and other regulated polluters must post signs that mark their outfall pipes. A sample is provided in figure 2.²⁴ Overall, New York has some elements of a strong public notification system, with the phone and written requirements, but has left some wastewater treatment facilities with too much “wobble room”, particularly in CSO reporting and providing information directly to the public. The DEP and health department have the entire burden of direct public reporting, letting wastewater treatment plants largely off the hook.

Recommendation: New York needs to expand its code and Discharge Notification



Figure 2: Typical Sign Posted at Dumping Point in New York

Act to capture all CSOs, provide prenotification of releases, create a centralized database and website, ensure that all affected communities are directly notified by wastewater treatment plants, and require an annual report from the plants and the state.

Minnesota: C+

Notification system needs to be more systematic and coordinated.

Minnesota requires public notification of SSOs and blending, including “bypasses, spills or other environmental emergencies.”²⁵ Notification goes first to the Minnesota Pollution Control Agency and includes receiving water or basement backups, quantity, date/time, reason, level of treatment provided, downstream receiving water users within 25 miles, if local media/public have been notified, environmental damage, and assistance needed. Wastewater treatment plants are also responsible for immediate

notification of “other interested and affected parties” which can include homeowners, downstream users, the Department of Natural Resources, local press, interested citizens and organizations, and postings at beaches.²⁶ However, it is not clear how closely these guidelines are being followed. Minnesota’s 2 CSO communities, Minneapolis and St. Paul, are not required to provide immediate reporting of overflows but are required to submit annual reports and place signs at all outfalls.²⁷

Overall, Minnesota has a strong program

of requiring initial notification to the Pollution Control Agency for SSOs and blending, but does not have a comprehensive system of providing consistent, immediate information to the public and all affected entities for all forms of dumping.

Recommendation: Minnesota's sewage dumping notification program should be more systematic and include a website, e-mails and a phone hotline for interested

citizens as well as direct, real-time reporting to health department officials. The Pollution Control Agency needs to make sure that direct, immediate public notification from wastewater treatment plants is actually occurring and needs to require this notification for CSOs. Moreover, Minnesota should require an annual report on all overflow activities from the state as well as all wastewater treatment facilities.

Pennsylvania: C-

Notification is not comprehensive and does not reach public directly.

Pennsylvania requires reporting CSOs to the Department of Environmental Protection (DEP) if they “may cause, contribute, pose, and/or have potential to cause substantial present or future hazard to human health, adverse impacts to the environment, and/or noncompliance.”²⁸ The DEP is notified within 24 hours with a description, cause, dates/times, mitigation steps, adverse impacts, etc. Moreover, each CSO permittee must submit a comprehensive annual report to the DEP.

The Pennsylvania reporting program contains the basic elements of a good CSO notification program, although it does not

clearly spell out that all dumping incidents have to be reported (i.e., a wastewater treatment plant could make the argument that there is no “public health” threat). However, there is one major problem: Direct notification of the public is not required! Even the state environmental agency reporting requirements for CSOs are not required for SSOs and blending, thus exposing citizens to many unknown sewage hazards.

Recommendation: Pennsylvania needs a comprehensive public notification program which includes a DEP website and immediate, direct notification (and prenotification) about all forms of dumping by wastewater treatment plants to local media, health departments, downstream communities and interested members of the public through e-mail and a phone hotline. The DEP should also produce a public annual report on statewide sewage dumping, as should each wastewater treatment plant.

There is one major problem:

Direct notification of the

public is not required!

Illinois: C-

Scattered approach needs to be strengthened and institutionalized.

Illinois' public notification system varies considerably by municipality. There is a requirement of "periodic" reports to the Illinois EPA (IEPA) for CSOs.²⁹ In addition, CSO permits are supposed to include public notification in "beach areas and areas where contact recreation occurs", although implementation of this requirement in the 108 CSO communities is scattered at best.³⁰ Finally, permittees are required to "consider internet CSO notification as well as mass media notification."³¹ There are no standardized reporting requirements for SSOs and blending. According to the IEPA, "Large municipalities are required to hold meetings with citizens to decide what type of public notification system should exist in the area."³²

Despite the scattered statewide approach, Chicago, under intense public pressure, has developed a CSO notification program, which includes a website (www.mwrdd.org/mo/csoapp/default.htm), e-mail notification for interested citizens, and notification of water supply agencies when the dumping occurs in the Lake Michigan watershed.³³ The reporting is "upon occurrence of a CSO." Moreover, Chicago is currently putting signs at all 241 outfalls saying that pipes "may discharge sewage contaminated with rainwater during and following rainfall" at 37 locations and adding that the discharges "may contain bacteria that can cause illness" at the other 204 locations (Figure 3). These signs are particularly important since Chicago dumped over 10 billion gallons of raw sewage without using chlorination first into the Chicago River last year, and about 60% of the river's flow is treated, unchlorinated sewage.³⁴

Recommendation: Illinois needs state-wide requirements for direct, immediate public notification through an IEPA

website and local phone hotlines and e-mail lists. Additional requirements should include media and health department notification, prenotification, statewide signage and annual statewide and municipal reports.

Figure 3: Chicago's new sewage dumping notification signs



Wisconsin: D+

Vague rule needs to be expanded, clarified and codified.

Wisconsin only has two CSO communities, but one of them—Milwaukee—is infamous for its large releases of raw or partially treated sewage into Lake Michigan. In 2004, Milwaukee dumped 4.6 billion gallons of raw sewage.³⁵ Statewide, “if an unscheduled sanitary sewer overflow, bypass, or any non-compliance which may endanger health or the environment the facility occurs, the facility must notify the Department of Natural Resources regional wastewater staff by telephone (Fax, e-mail, or voice mail, if staff are unavailable) within 24 hours.”³⁶ Moreover, wastewater treatment plants must provide a written report within 5 days containing “a description of the noncompliance and its cause, the period of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the non-compliance.”³⁷ “Noncompliance” is defined as any unanticipated bypass or exceedances of permit limits.

While this rule may appear to be strong, there are four major problems.

- 1) It is unclear whether releases during rain events that are expected yet potentially hazardous are required to be reported. This is a major oversight



A typical sewage dumping site.

and appears to conflict with federal guidelines. Because of this exemption, it does not appear that most routine dumping events are being reported.

- 2) Once notification reaches the Department of Natural Resources, there is no provision for reaching the public, which means that citizens are likely to be left in the dark about the conditions of local waterways.
- 3) There are no provisions for prenotification, annual reports or other similar measures which would ensure that the public is provided with critical health information.
- 4) Rules do not mention CSOs, although with only 2 CSO communities and with the unique situation in Milwaukee (see below), this is not a major oversight.

Some communities have adopted stricter regulations than those required by the state. For example, due to local pressure, the Milwaukee Metropolitan Sewerage District offers information about potential and current CSOs and blending releases through a website and e-mail notification system. This “stormtracker” portion of the website (<http://www.mmsd.com/news/stormupdate.cfm>) is updated every 5 minutes with overflow and weather data. Moreover, Milwaukee recently started posting signs at 180 dumping points along Lake Michigan and other waterways.³⁸

Recommendation: Wisconsin needs to strengthen, enforce and codify into law its current Administrative Code. The rule needs to call for clear and complete notification and prenotification of all dumping and include signage requirements. It also needs to require annual reports, public education, a statewide website and local phone hotlines.

Ohio: D-

No significant statewide public notification program exists.

Ohio's sewage dumping notification system is highly scattered and has—in recent years—been moving in the wrong direction by preventing citizens from easily accessing information. Officially, NPDES permits include a requirement for “public notification for any areas affected by CSOs, especially beach areas and areas where contact recreation occurs. Ohio EPA expects communities to develop and implement an effective public advisory system that informs the public of the possible health and environmental impacts associated with CSOs, that notifies the public

when discharges from CSOs occur and advises against contact recreation when elevated bacteria levels may endanger public health.”³⁹ The Ohio CSO Strategy includes a checklist for CSO operational plans, including: “1) Has a program been proposed to announce use restrictions on TV, radio, newspaper, or by other means, 2) Will notices be posted at affected areas, 3) Will CSO structures be identified so the public can avoid the overflow, and 4) Will a public information program be initiated where all major CSO issues, possible solutions, and associated costs are explained.”⁴⁰ Note

Cincinnati's CSO Public Notification System

As part of a settlement with Sierra Club and other organizations, the city of Cincinnati offers CSO advisories through a 1-800 number (this is unique and may be the most equitable way to provide notification in an inner city) and e-mail.⁴¹ The notice that is sent out is as follows:

“WET WEATHER SEWER OVERFLOW WARNING TODAY

Thank you for signing up to receive email information about wet weather overflows in the Metropolitan Sewer District of Greater Cincinnati service area. When it rains or when water levels in area rivers and streams are elevated, the sewers in the older parts of the MSD Service Area can overflow—sending untreated rainwater and sewage into our streams.

Today, weather conditions indicate a strong possibility that overflows could occur. After a rainstorm, you should avoid contact with streams in the combined sewer areas for at least 72 hours. You also should avoid contact with streams in the combined sewer areas until 72 hours after water levels in area rivers and streams have returned to normal elevation. Signs are posted along our waterways to identify wet weather overflow outfalls. Contact with the water in these areas could be hazardous.

Even in dry weather, it's best to avoid contact with urban streams and teach children to stay away from waterways in the combined sewer area. MSD is currently implementing a program to reduce and control combined sewer overflows and improve the conditions of our waterways. For more information please visit the MSD website at <http://msdgc.org>.”

that this is a questionnaire, not a rule, and it is not clear what happens if the plant answers these questions with a negative response. Moreover, this plan is not mandated by state legislation and is not being implemented around the state.

In reality, facilities across Ohio have highly variable reporting requirements. Some must report CSOs only once a year, some in monthly reports while others must report after every overflow. SSOs must be reported to Ohio EPA (OEPA) and local health departments in monthly operating reports and annual reports but not immediately or in any systematic manner. Blending or other bypasses are not effectively tracked by OEPA and thus reporting is uneven at best. There is no statewide requirement or standard for direct public reporting and no statewide annual report on sewage dumping. Therefore, public notification is highly variable at best and

public access to sewage dumping information is available only by sifting through boxes of monthly reports at locations across the state. It is not available in real time or soon thereafter in most communities, with a few notable exceptions (see box on previous page).

Recommendation: OEPA needs to fully implement its CSO and SSO strategy, and begin tracking blended releases. Since OEPA has not implemented its own requirements, statewide legislation which requires full, immediate notification (and prenotification) to interested citizens, local communities and the media via e-mail, phone hotlines and a website is needed. This legislation should require wastewater treatment plants to develop public education programs, signage at all overflow sites and a statewide annual report on dumping.



Sewage dumping pipe in Ohio

Conclusion: The Need for Statewide Policies

Citizens deserve to be informed when the fragile waters they use for drinking and recreation are being inundated with hazardous sewage. To protect public health in states around the Great Lakes, an ideal system for providing public notification for all forms of sewage dumping would have four interrelated components:

- 1) Signage and public education:** The first step to informing the public about dumping is to make the health threat visible. Signs should be posted at all dumping locations and public spaces where water quality degradation is likely. A sample informative sign can be found in Figure 4. Moreover, wastewater treatment plants should provide public information about the hazards of sewage dumping on their website and in all of their outreach materials, including bills. This will help build support for stopping sewage dumping.
- 2) Prenotification and public “opt-in”:** Wastewater treatment plants should ensure that citizens are informed about their right to know about dumping and

their right to sign up to receive direct notifications. This is best done through local media several times per year. A wastewater treatment plant typically knows if it will be dumping and should, 6 hours before a predicted overflow, directly inform local media (radio, television and newspapers), downstream communities, local health departments, public facilities at risk (i.e., schools), and any members of the public who would like to be informed (an “opt-in” system). In this way, citizens can be prepared in advance for any potential sewage dumping.

- 3) Immediate notification during events:** Once sewage dumping begins, a statewide website should be providing as close to real-time information as possible. Moreover, each wastewater treatment plant should activate its 1-800 phone hotline and e-mail listserve so citizens can learn about dumping immediately. As soon as the dumping ends, notification should be provided to all of the constituencies who receive prenotification as well as the state environmental agency. Information

should include the cause, start/end time, volume of sewage dumped, quality (i.e., diluted, blended, etc.), immediate and ultimate receiving water, number of people potentially exposed and any punitive action taken.

- 4) **Reporting:** After a dumping event, wastewater treatment plants should provide a written report with full details on the release to the state environmental agency and health department. Annually, each plant should publicly release a report that compiles all information in an accessible format. Similarly, each state should compile statewide dumping information in an annual report. A citizen oversight board should be in charge of ensuring that the state environmental agencies and wastewater treatment plants are fulfilling these obligations.

The ideal situation is for all components of this sewage dumping notification plan



Figure 4. Dumping sign in Portland, Oregon. A model for other cities.

to be codified into law and enforcement codes. In reality, different states in the Great Lakes excel at or are deficient in different parts of this ideal sewage dumping notification plan and no state has all of these pieces in place. Therefore, citizens throughout the Great Lakes are being unnecessarily exposed to the hazards of raw or inadequately treated sewage.

Sewage Solutions

Currently, wastewater treatment plants are dumping a hazardous substance which threatens the health of citizens (especially children) and wildlife, and are often not telling the public until long after the threat is gone, if ever. Even more basic than the public right to know about this health threat is the right to clean water for fishing, swimming and drinking. Releasing untreated or partially treated sewage is illegal, regardless of whether the public is informed or not. Therefore, what we need in the Great Lakes is the “virtual elimination” of sewage dumping. This goal runs parallel to the “virtual elimination” of toxins goal set out by the Great Lakes Water Quality Agreement, and means full treatment of sewage in all but the most extreme circumstances.

There are three steps to achieving this goal:

1. **“Catch the Rain”:** The most efficient way to stop sewage overflows is to stop water from flooding treatment systems when it rains. Infiltration and inflow is the single largest cause of overflows, yet there are cost-effective ways to

stop it. “Soft-path” or “Low-Impact Development” (LID) and other non-infrastructure ways to reduce dumping have received scant attention and funding in part because of the way federal funding is structured and in part because of the narrow-minded vision of engineers who control wastewater systems. Soft-path approaches include onsite wastewater treatment technologies, stormwater retention and filtration (such as rain gardens, constructed wetlands and native species plantings), stream buffers, water conservation fixtures, rain barrels, reuse of “greywater”, and other low impact development designs.⁴² The goal is to “retain, detain, filter, treat, use, and reduce stormwater.”⁴³ Incentives, strategies, examples and tools for controlling overflows without costly infrastructure improvements are needed. Efficiency in controlling overflows decreases the farther “downstream” in a wastewater system that the control occurs (i.e., controlling at the lot-level is more efficient than in the conveyance system which is more efficient than control at

the plant). On-site, soft-path controls have the additional benefit of reducing stormwater runoff that often flows directly into waterways.

Developers contribute greatly to sewage discharges through impervious surface-centered, sprawling construction which is displacing agricultural and natural land features that retain storm water. Every person and business contributes to storm water problems through plantings and lawn maintenance, personal water consumption habits, etc. The goal of “catching the rain” is to reduce or eliminate stormwater runoff at its source, in every developed lot.

2. Increase Funding: The old, crumbling infrastructure around the Great Lakes is in dire need of improvement to prevent overflows. These improvements often involve better maintenance and operation, but also can involve major capital investments. Infrastructure improvements are a complementary strategy to “Catching the Rain”. Infrastructure is funded in part through the SRF (although local and state funding represents a larger portion of total funding), yet much of

this money is not being spent wisely. For example, SRF funding often subsidizes urban sprawl or industrial agricultural operations instead of prioritizing existing development and ensuring that “catching the rain” is the preferable strategy to expensive new infrastructure.⁴⁴ We need to not only increase SRF funding, but also to reform SRF and provide prioritized funding to stormwater and lot-level projects in addition hard infrastructure.

3. Enforce the Laws: In many cases, the regulatory authority to stop sewage dumping exists but is not being used. Long-term, all overflows are supposed to be eliminated, as required under the Clean Water Act. In the short-term, many plants are getting away with violating their NPDES permits. Generally, EPA and state environmental agencies have been lax in enforcing regulations on CSOs and SSOs, and the federal EPA is proposing allowing increased sewage dumping through its “Sewage Blending Guidance.” What is really needed is a ratcheting down on NPDES permits with an enforceable goal of “virtual elimination”, which would lead to major water quality and public health improvements.

Great Lakes Restoration: An Opportunity for Resources and Innovation

Sewage dumping is a major problem throughout the Great Lakes region. Since all Great Lakes basin residents are dependent on an interconnected source of water and since the Great Lakes have such a high concentration of sewage dumping, a coordinated regional solution is disparately needed. Fortunately, an unprecedented coalition of environmental and conservation organizations—the Healing Our Waters (HOW) Great Lakes Coalition—was recently formed to advocate for restoration of the Lakes. This Coalition is currently working with the EPA-led Great Lakes Regional Collaborative to develop a consensus Great Lakes Restoration plan. The goal is for this plan to be submitted to Congress for funding by the end of 2005.

A significant component of this plan is a new perspective and additional resources for stopping sewage dumping in the Great Lakes. A team of government officials, wastewater treatment plant operators, industry officials and environmental organizations is in the processing of setting goals,



Great Lakes beaches need protection from sewage dumping.

timelines and funding requests for “virtual elimination” of sewage dumping in the Great Lakes to ensure that beaches, recreational water and drinking water are safe. The emphasis is on comprehensive stormwater management, including the use of low-impact development and other “soft-path” controls as a trigger for funding. This unprecedented approach and collaboration has the potential to turn the tide and put an end to sewage dumping in the Lakes if the restoration plan is acted on in Congress and in the Great Lakes states.

The bottom line is that eliminating sewage dumping in all but extreme circumstances is not a technological issue (we know exactly how to do this), but rather is an issue of political will, citizen activation, funding and creative thinking about problems and solutions. Strong public notification about this eminent health hazard is a necessary and long-overdue step in stopping sewage dumping and ensuring that citizens are safe when overflows do occur.

Notes

1. Stoner, Nancy, M. Merkel & M. Dorfman. *Swimming in Sewage*. Natural Resources Defense Council and Environmental Integrity Project: February 2004 (p. 18).
2. USEPA. *Report to Congress: Impacts and Controls of CSOs and SSOs*. EPA 833-R-04-001: August 2004 (ES-5).
3. USEPA. *The Clean Water and Drinking Water Infrastructure Gap Analysis*. EPA-816-R-02-020: September 2002 (p. 8-9)
4. USEPA. *Report to Congress: Impacts and Controls of CSOs and SSOs*. EPA 833-R-04-001: August 2004 (4-15).
5. Ibid (4-14).
6. Ibid (ES-5 & ES-7).
7. Ibid (ES-7).
8. Stoner, Nancy & M. Dorfman. *Testing the Waters 2004*. Natural Resources Defense Council: August 2004.
9. H.R. 1720. The Raw Sewage Overflow Community Right-to-Know Act. April 20, 2005.
10. EPA. *CSO: Nine Minimum Controls*. http://cfpub.epa.gov/npdes/cso/ninecontrols.cfm?program_id=5 (accessed: May 3, 2005).
11. Michigan Public Act 451, Section 1112a.
12. Michigan Department of Environmental Quality. *Combined Sewer Overflow (CSO) & Sanitary Sewer Overflow (SSO) Annual Report: July 2000-December 2001*.
13. Michigan Public Act 451, Section 1112a.
14. Roper, Cyndi. *Wasting Our Water Wonderland: Michigan Officials Violate the Public's Trust Sewage Overflows Under-Reported by Tens of Billions of Gallons*. Clean Water Action and Clean Water Fund: October 9, 2001 (p.5)
15. Ibid.
16. Indiana Title 327 Water Pollution Control Board: Proposed Rule as Preliminarily Adopted with IDEM's Suggested Changes Incorporated.
17. Tom Neltner, Director of Improving Kid's Environment, provided much of the information for this section.
18. Indiana Title 327 Water Pollution Control Board: Proposed Rule as Preliminarily Adopted with IDEM's Suggested Changes Incorporated.
19. Ibid.
20. Improving Kids' Environment. *Indiana Clean Water Coalition, Sewage in Our Streams Newsletter*. June 2002.
21. City of Indianapolis. *Department of Public Works: Raw Sewage Overflow Notification Program*.
22. New York State Department of Environmental Conservation. *6 NYCRR §750-2.7*.
23. Working Group on Community Right to Know. *Posting Pollution Increases Awareness*. <http://www.crtk.org/postingandlabeling.cfm?view=current> (Accessed: April 28, 2005).
24. Ibid.

25. Minnesota Pollution Control Agency. *Emergency Notification Guidance for Wastewater Collection Systems*: March 1999. <http://www.mrwa.com/mpcaemergency.htm> (accessed: April 15, 2005).
26. Ibid.
27. Merkel, Michelle. *Backed Up: Cleaning Up Combined Sewer Systems in the Great Lakes*. Environmental Integrity Project: May 2005.
28. Pennsylvania Department of Environmental Protection. *Fact Sheet: Authorization to Discharge under the NPDES General Permit for Wet Weather Overflow Discharges from Combined Sewer Systems*. 3800-PM-WSWM0076f: 9/2004
29. 35 Illinois Admin. Code 305.102.
30. Based on conversations with the Illinois Environmental Protection Agency.
31. Merkel, Michelle. *Backed Up: Cleaning Up Combined Sewer Systems in the Great Lakes*. Environmental Integrity Project: May 2005.
32. Ibid.
33. Metropolitan Water Reclamation District of Greater Chicago: Combined Sewer Overflow Public Notification Plan, Revised April 2004.
34. Rhode, Marie. Sewage district will post signs at dumping points. *Milwaukee Journal Sentinel*: April 25, 2005.
35. Ibid.
36. State of Wisconsin, Department of Natural Resources. *Sanitary Sewer Overflow or Bypass Notification Summary Report*. Form 3400-184: April 2002.
37. Wisconsin Administrative Code & Register nr 205.07.
38. Rhode, Marie. Sewage district will post signs at dumping points. *Milwaukee Journal Sentinel*: April 25, 2005.
39. Ohio Environmental Protection Agency. *Ohio CSO Control Strategy*.
40. Ibid.
41. Metropolitan Sewer District http://msdgc.org/consent_decree/public_notification (accessed: April 10, 2005).
42. Woodworth, James. *Out of the Gutter: Reducing Polluted Runoff in the District of Columbia*. Natural Resources Defense Council: July 2002.
43. Belan, Gary & B. Otto. *Catching the Rain: A Great Lakes Resource Guide for Natural Stormwater Management*. America Rivers: 2004.
44. Otto, Betsy & G. Belan. *Follow the Money: An action agenda for making smarter clean water state revolving fund investments in the Great Lakes region*. American Rivers: 2004.