

A photograph of a person swinging on a rope over a river. The person is shirtless and wearing dark shorts with orange and white stripes. They are in mid-air, holding onto a thick rope. The background shows a river with a forest of trees on the far bank. The sky is clear and blue.

WHAT'S IN YOUR WATER?

THE STATE OF PUBLIC NOTIFICATION
IN 11 U.S. STATES



American Rivers
Thriving By Nature

Acknowledgments

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EXECUTIVE SUMMARY

Our clean water is threatened by aging, overburdened sewer systems that overflow more than 860 billion gallons of raw and partially-treated sewage into our rivers and streams every year. Sewage spills threaten public health, spoil recreation, hinder economic values, and harm wildlife. As pipes age and the population grows, America's overburdened wastewater infrastructure is breaking down with increasing frequency and spreading this raw and partially-treated sewage throughout streams, rivers, lakes, and beaches across the country.

As soaring growth taxes existing infrastructure, and pipes and treatment facilities age, wastewater infrastructure needs have grown to the point that an investment of \$390 billion is

needed over the next 20 years to meet increasing demands.¹ Until America faces this mounting problem by upgrading and maintaining sewer treatment systems, millions will continue to fall ill every year from exposure to sewage.

Knowledge must be the first line of defense to keep our friends, families, and pets safe. To minimize public health consequences, we must strengthen federal and state sewage overflow public notification requirements, so that Americans have the necessary information to protect themselves from a rising tide of sewage. Citizens have a fundamental right to know when their local streams, rivers, and lakes are unsafe for playing, swimming and fishing due to sewage pollution.

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WHY YOU NEED TO KNOW

Wherever there are creeks, streams and rivers, people will want to swim, play and wade in them. This is certainly true of Massaponax Creek in Spotsylvania, Virginia, where sewer overflows have recurred over the past year.² From November 2006 to May 2007 utility workers reported 61 overflows, and each event is estimated to have sent 10,000-100,000 gallons of sewage into the creek. The frequent spills are caused by an overburdened sewer main, which cannot handle the large volumes of sewage in the system during peak hours, resulting in fecal coliform levels well above the state limit. Work is underway to repair 17 miles of sewage pipes, but the project will not be completed until 2008.

Meanwhile, area residents are living near and playing in a river that flows regularly with sewage. Unfortunately communication with the public has been woefully inadequate and many residents have been unaware of the danger. Although the state agency says that it is warning residents to stay out of the Massaponax until problems are resolved, the message does not appear to have gotten out. Signs have been posted where sewage overflows from the manholes, but not along the creek.

“We’re not the only people who play in the creek. Every time I go down there, there are teenagers and dogs swimming in the creek... I’m very upset that the county waited this long and there are potential health risks to our whole family now,” said Janny Sims, whose son and friends were soaked from playing in the creek.

Strong right to know policies are a smart solution to keep residents healthy.

Federal public notification regulations for sewage spills and overflows are virtually nonexistent and only a handful of states have effectively corrected this shortcoming. While a federal law is much needed to set a consistent minimum standard for public notification, each state must ultimately craft its own regulations to warn the largest possible segment of its population of sewage contamination in local waterways. Such a program should include:

- ❖ Improved monitoring of sewage systems for spills;
- ❖ Public notification in a timely manner to the broadest audience through several mechanisms;
- ❖ Notification to downstream drinking water intakes and recreation areas;
- ❖ Reporting to state environmental agencies no later than 12 hours after the spill;
- ❖ Involvement of public health agencies in assessing public health threats;
- ❖ Cumulative annual reports and audits by the state; and
- ❖ Consistent enforcement.

This report provides an overview of federal public notification requirements and then assesses public notification regulations in 11 states to provide a snapshot of sewage right to know requirements. Some states, such as Maryland, have recently adopted strong public notification guidelines and have worked diligently to ensure that they are implemented successfully. Other states, such as Kentucky, have virtually no public notification provisions and the public is unaware of the threat sewage poses to their health. Most states fall somewhere between these two extremes, with inadequate notification guidelines that are followed inconsistently throughout the state. In many states the effectiveness of public notification guidelines is greatly reduced by poor implementation and a lack of enforcement actions against treatment plants that fail to report spills. Alabama is the most striking example, where basic notification regulations are regularly ignored by the Department of Environmental Management and the regulated community. There is room for improvement in nearly every state.

INTRODUCTION

Every day, raw sewage from clogged, broken or overwhelmed sewer lines flows into our communities and waterways. While the full extent of the problem is unknown and likely underestimated, best estimates indicate that over 850 billion gallons of raw sewage from combined sewer systems flow into our waterways every year.³ Together with the sewage from the 23,000-75,000 estimated annual sanitary sewer overflows,⁴ these spills cause millions of illnesses each year.⁵ The bacteria, parasites and viruses in sewage cause a wide array of short-

and long-term illnesses that are especially dangerous for children, the elderly, and the immunocompromised (figure 1).

Illnesses from sewage exposure are often underreported and the problem could be far greater than the above data suggests. Sewage spills and the associated health effects are likely to worsen in coming years as the population grows, green space is replaced with impervious surfaces, and the resulting increase in stormwater runoff and wastewater overwhelms overburdened wastewater treatment systems. At the

Best estimates indicate that over 850 billion gallons of raw sewage from combined sewer systems flow into our waterways every year.



DON WILLIAMS

FIGURE 1 - ACUTE AND CHRONIC EFFECTS FROM WATERBORNE PATHOGENS⁶

	AGENT	ACUTE EFFECTS	CHRONIC OR ULTIMATE EFFECTS
BACTERIA	E. coli 0157:H7	Diarrhea	Death, Hemolytic Uremic syndrome
	Legionella pneumoniae	Fever, pneumonia	Elderly: death
	Helicobacter pylori	Gastritis	Ulcers and stomach cancer
	Vibrio cholerae	Diarrhea	Death
	Vibrio vulnificus	Skin and Tissue infection	Death in those with liver problems
	Campylobacter	Diarrhea	Death: Guillain-Barré syndrome
	Salmonella	Diarrhea	Reactive arthritis
	Yersinia	Diarrhea	Reactive arthritis
	Shigella	Diarrhea	Reactive arthritis
	Cyanobacteria	Diarrhea	Potential Cancer
	Leptospirosis	Fever, headache, chills, muscle aches, vomiting	Weil's Disease, kidney damage, liver failure, death
	Aeromonas hydrophila	Diarrhea	
PARASITES	Giardia lamblia	Diarrhea	
	Cryptosporidium	Diarrhea	Immunocompromised: death
	Toxoplasma Gondii	Newborn syndrome, hearing and visual loss, mental retardation	Dementia, seizures
	Acanthamoeba	Eye infections	
	Microsporidia	Diarrhea	
	Entamoeba cayetanensis	Amebiasis, amoebic dysentery, abscess in liver or other organs	
VIRUSES	Hepatitis viruses	Liver infection	Liver failure
	Adenoviruses	Eye infections, diarrhea, respiratory disease	
	Caliciviruses	Diarrhea	
	Coxsackieviruses	Encephalitis, Aseptic meningitis	Heart disease, diabetes
	Echoviruses	Aseptic meningitis	
	Polyomaviruses		Cancer of the colon

Knowledge must be our first line of defense while we work to eliminate sewage pollution.

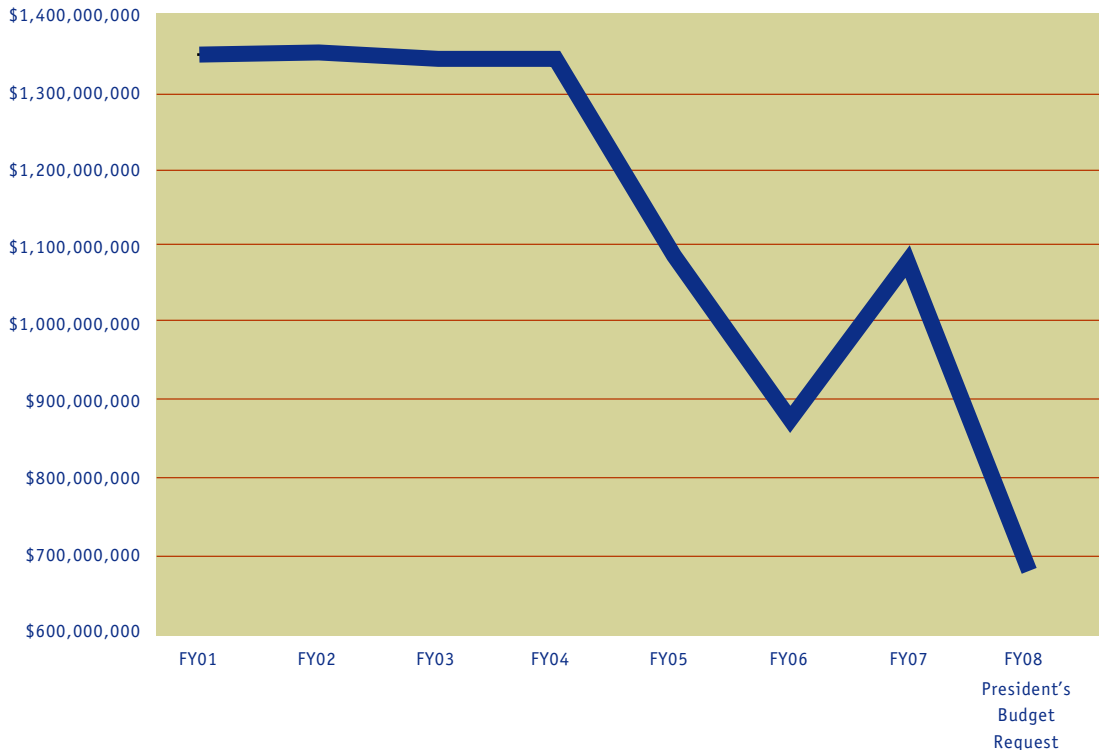
same time, funding for clean water infrastructure has been continually cut (figure 2) and climate change threatens to aggravate the problem by altering rainfall patterns and creating more extreme weather events yielding more sewer overflows in some regions.⁷

This combination of factors leads to sewage pollution that threatens public health and the environment decades after passage of the federal Clean Water Act. Knowledge must be our first line of defense while we work to eliminate sewage pollution. Astonishingly, however, most people are unaware of local sewage overflows because of weak or ineffective notification

requirements. Currently, federal notification, or “right-to-know” requirements for sewage are weak, and state requirements, where they exist, are highly variable. While homeowners recognize and act on this serious problem when sewer overflows back up into their basements where it can’t be ignored, similar backups into rivers and streams don’t inspire the same outrage because they are largely unknown.

Raising awareness of sewage pollution is essential for several reasons. First and foremost, this knowledge allows citizens to reduce their health risk from contact with untreated sewage. Given the extent of sewage spills, it is impera-

FIGURE 2 – DECLINE IN FEDERAL CLEAN WATER FUNDING



tive that people have ready access to this information so they can keep themselves and their families safe. Second, once people are made aware of the presence of raw sewage in their local waterways, there will be increased demand for solutions to restore clean water and reclaim local waterways for health, safety, and local economies. Widespread awareness of pollution problems generates public concern and galvanizes political pressure to fix the problem, whether on a local, state or national level. Public pressure, in turn, can motivate polluting facilities to reform. In some cases, negative publicity can be a great incentive to reduce sewage pollution from publicly owned treatment works (POTWs), especially when government oversight and enforcement is lacking.

To raise awareness of sewage problems, protect public health and ultimately reduce sewage and restore healthy rivers, notification requirements must be established or strengthened at the state and federal levels. While a federal law is much needed to set a consistent

KNOWLEDGE IS POWER

The power of public information as a catalyst for environmental improvement is illustrated by the case of toxics right to know law. As a result of public reporting requirements for toxics created by national Right-to-Know law, releases of chemicals subject to reporting dropped by 48% from 1988 to 2000.⁸ By making transparent the company's polluting activities, the Toxics Release Inventory (TRI) has been effective in causing the reduction of toxic chemical releases, and there is a need to make sewage spills similarly evident.⁹ Not only are right to know laws effective, but they also serve to further democratic decision making by equipping citizens with full information allowing them to participate more equally in discussions affecting their community while also promoting accountability.¹⁰

Given the extent of sewage spills, it is imperative that people have ready access to this information so they can keep themselves and their families safe.



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WHAT YOU DON'T KNOW CAN HURT YOU...

Illnesses contracted from pathogens in sewage are seldom pleasant affairs, but few are as gruesome as Waikiki, Hawaii resident Lisa Kennedy's experience. In March, 2006 she went surfing, unknowingly, shortly after the massive 48 million gallons sewage spill into Ala Wai Canal and subsequently contracted a bacterial infection. Kennedy is currently suing the City of Waikiki claiming that she was unaware of the spill because signs had not been posted at all access points to the contaminated waters.¹¹ Regardless of who is at fault, the sewage laden waters have had serious consequences. She spent nearly two weeks in the hospital and had surgery to remove the infection, which left a sizeable wound. Kennedy also incurred \$42,000 in medical costs and lost months of wages.

minimum standard for public notification, each state must ultimately tailor its own policies to local conditions to warn the largest possible segment of its population of sewage contamination in local waterways.

Additionally, this information should be amplified and distributed in a meaningful way so that residents can take action, defensive and proactive, to protect public health and safety and the environment. This report summarizes the status of public notification and reporting for sewage spills, briefly at the federal level, and then more in-depth for 11 states.¹² Comparing state policies against a model policy reveals gaps in notification that highlight the need for stronger state laws and rules, and for a consistent federal requirement to provide a baseline requirement to protect all communities, regardless of state.

FEDERAL SEWAGE NOTIFICATION REQUIREMENTS

There are no nationwide public notification requirements for sewer overflows, from either type of sewage system found in the U.S., sanitary or combined sewers systems, sufficient to protect public health.

Sanitary Sewer Systems

Serving over half the U.S. population, Sanitary Sewer Systems (SSS) were designed to convey only sewage and not stormwater (figure 3). In these systems, stormwater is usually conveyed directly and untreated into local waterways. SSSs are found in all states, and municipal sanitary systems serve approximately 164 million people.¹³ EPA does not have exact numbers for the amount of sewage spilled from SSSs in Sanitary Sewer Overflows (SSOs), but based on modeling EPA estimates that the annual SSO discharge is between three and ten billion gallons.¹⁴ The primary causes of SSOs are line breaks from deterioration and lack of maintenance, line blockages, and infiltration from stormwater runoff.¹⁵

Public Notification for SSOs

Unfortunately, NPDES permits do not require public notification for sewage spills from SSSs. Instead, NPDES permit holders must report instances of noncompliance with permit conditions to the NPDES permitting authority, usually the state environmental agency, but not the public.¹⁶ Because SSOs that result in a discharge to waters of the U.S. represents noncompliance they

must be reported.¹⁷ If the overflow or spill also may endanger health or the environment, the permittee must report this to the permitting agency within 24 hours of becoming aware of the problem, and submit a written report within five days.¹⁸ The written submission must include the cause of noncompliance, corrective actions taken, and steps planned to reduce and eliminate similar occurrences.¹⁹ Other cases of noncompliance that do not endanger health or the environment must be reported as part of the permittee's monthly discharge monitoring

PERMIT SYSTEM FOR SEWAGE DISCHARGES

Under the Clean Water Act, pollution discharges into our waters require a National Pollution Discharge Elimination System (NPDES) permit from the state or EPA.²⁰ An NPDES permit includes end of the pipe effluent limits based on available technology and water quality standards.²¹ Municipal sewage treatment plants require "secondary treatment" as a technological minimum, which removes about 85% of oxygen-consuming waste.²² Many treatment plants must now upgrade to more advanced treatment technologies to meet water quality standards. Permits for sanitary and combined systems are handled differently, although neither requires timely direct public notification when there is an overflow (see below).

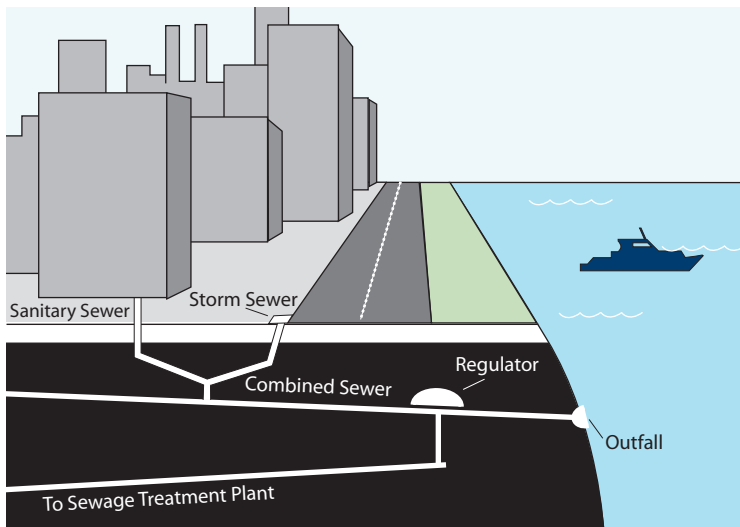
FIGURE 3 - SANITARY SEWER SYSTEM



KING COUNTY WASTEWATER TREATMENT DIVISION

Sanitary sewer systems have separate conveyance pipes for stormwater runoff and domestic sewage. Wastewater from homes and businesses is carried in one pipe to a treatment plant where it is treated before being discharged. Stormwater collects in a separate pipe and is discharged into local waterways.

FIGURE 4 - COMBINED SEWER SYSTEM



NY/NJ HARBOR ESTUARY PROGRAM, REVISED BY CASCO BAY ESTUARY PARTNERSHIP

Combined sewers transport domestic wastewater and stormwater to the treatment plant together in one pipe. During rain storms, the volume of water in the pipes is often too great for a CSS and untreated sewage is released directly into local waterways prior to the treatment plant. CSSs are generally older treatment systems and are found primarily throughout the Northeast, Great Lakes and Northwest.

CAUSES OF SSOs

- ❖ **Pipe blockage:** One of the most common causes of SSOs is pipe blockages. Debris can clog sewer lines and cause effluent to overflow out of manholes or other openings. Cooking grease can also cause blockages when it solidifies in sewer lines.
- ❖ **Line break:** Tree roots cause breaks in sewer pipes, allowing sewage to spill out. Construction activities also cause breaks in sewer lines.
- ❖ **Inflow/Infiltration:** Stormwater can enter sanitary sewer systems through manholes or holes in pipes. The excess flow can overwhelm the system and cause an overflow. Overflows due to I/I tend to have higher volumes than other overflows.
- ❖ **Malfunctioning pumping stations:** Power failures or a malfunction at a pumping station can cause sewage to overwhelm a part of the system and spill into surrounding areas.

reports (DMRs) that are submitted to the state or federal permitting authority.²³ While there are no federal requirements for public notification of an SSO, states can require and individual permits can include public notification provisions.

A proposed SSO rule that was rescinded at the beginning of President Bush's term in 2001 would have expanded and strengthened public notification by requiring:²⁴

- ❖ Immediate reports to the permitting authority including SSOs that do not reach waters of the U.S.;
- ❖ Immediate notification to the public, public health agencies, drinking water suppliers, and others of SSOs that may imminently and substantially endanger human health;
- ❖ Clarified requirements for what information about SSOs should be reported on DMRs;
- ❖ Publicly available annual reports summarizing all SSOs; and
- ❖ Posting of overflow locations where there is a potential to affect human health.

Combined Sewer Systems

Combined Sewer Overflows (CSOs) are from sewer systems designed to convey sewage and stormwater together for treatment (figure 4). During wet weather, these combined systems overflow into local waterways, releasing untreated sewage and disease-causing pathogens. Forty-six million Americans in 32 states and the District of Columbia are served by combined sewer systems and EPA estimates that 850 billion gallons of untreated sewage and stormwater are released annually.²⁵

Public Notification for CSOs

Public notification is one of the required Nine Minimum Control Measures (see box this page), with the goal to inform the public as to the location and occurrence of CSOs and the public health effects.²⁶ However, EPA does not impose specific requirements for notification, because the “mechanism will probably vary with local circumstances.”²⁷ EPA has provided some guidance for what types of notification may satisfy the CSO Control Policy, including posting at affected use areas, posting at selected public places, posting at outfalls, placing notices in local media, letter notification to affected residents, and a telephone hotline, all of which could suffice.²⁸ An analysis in the Great Lakes revealed that public notification for CSOs is highly variable and may be required via permit, rule or legislation.²⁹ Some states, such as Michigan, require real time reporting by the sewer plant operator to the state environmental agency, public health departments, and the local newspaper.³⁰ In contrast, in Minnesota, permittees are merely required to post identification signs at CSO outfalls.³¹ Even in Michigan, where reporting requirements are strong, both CSOs and SSOs have been underreported.³² Likewise, in Kentucky, some CSS permits require notification while others do not, reflecting the inadequacy of current regulatory policy.



US FISH & WILDLIFE SERVICE

REGULATION OF CSOs

Although CSSs are covered under the NPDES permitting system, they are not required to meet secondary treatment standards.³³ Instead, EPA issued a CSO control policy in 1994 that was subsequently codified in the Clean Water Act.³⁴ The CSO Control Policy requires that each CSO permittee meet nine “minimum control measures” and develop a long term control plan if necessary to meet water quality standards by incorporating these requirements into NPDES permits.³⁵ The Nine Minimum Control Measures include operation and maintenance, maximizing storage and treatment of wastewater, and public notification, among others, and if implemented are designed to meet the objectives of the Clean Water Act while providing flexibility.³⁶ Thus far, compliance with requirements to implement the nine minimum control measures and develop long term control plan has been inconsistent.³⁷

Based on modeling, EPA estimates that the annual Sanitary Sewer Overflow (SSO) discharge is between three and ten billion gallons every year.

MODEL STATE POLICY FOR SEWAGE SPILL NOTIFICATION

Public notification and reporting of sewage spills is key for public safety.

Given the skeletal and insufficient nature of federal notification requirements, states can play an important role in filling this public safety gap by requiring public notification and reporting. The following model notification program would achieve maximum awareness of sewage pollution, protect Americans from waterborne disease, and catalyze public support for solutions to reduce sewage pollution in the future. Such a program would include:

- ❖ Improved monitoring of sewage systems for spills;
- ❖ Public notification in a timely manner to the broadest audience through several mechanisms;
- ❖ Notification to downstream drinking water intakes and recreation areas;
- ❖ Reporting to state environmental agencies no later than 12 hours after the spill;

WHEN SPILLS GO UNREPORTED...

In April 2007, a fist-sized hole in a sewer pipe in Des Moines, Iowa allowed untreated sewage to leak from the system. The spill went undetected until it began bubbling up onto the streets near an intersection. Some of the sewage flowed into a nearby creek. Stronger system monitoring procedures would have allowed officials to contain the spill before it became a hazard to public health.³⁸

- ❖ Involvement of public health agencies in assessing public health threats;
- ❖ Cumulative annual reports and audits by the state; and
- ❖ Enforcement.

Improved Spill Monitoring

A critical first step necessary for effective public notification is knowing when an overflow occurs. In some cases, when a pipe bursts, workers may not know about the spill for hours or days. If sewage treatment plant workers and operators are unaware of spills, timely SSO reporting is unachievable thus precluding useful public notification. It is essential that wastewater treatment facilities work to improve monitoring throughout their entire collection and treatment infrastructure. To improve monitoring, states should require each POTW to submit overflow detection plans that may include technological solutions such as installing cameras throughout the system. In conjunction with strong reporting requirements and consistent enforcement this could significantly cut the number of unreported spills.

Public Notification

There are a variety of public notification methods, and states should use the optimal combination of newspaper notices, phone hotlines or email to reach the broadest possible audience in a timely manner. Different segments of the population receive their information from different

sources, and each state must make an effort to reach as many residents as possible by choosing the most effective methods of notifying their citizens of sewer overflows given their population characteristics. Ideally every state would choose several methods to reach as large a segment of the population as possible.

Prominent notices in newspapers and on TV newscasts can be an effective way of reaching many residents if they are timely enough to allow residents to avoid contact with sewage. In some states, such as North Carolina, POTW

RIVER ALERT PROGRAMS

While this report focuses on public notification after a known spill from a sewage collection system, river alert programs offer another, more proactive approach to informing the public that local waterways are contaminated. In Philadelphia, the Philly Rivercast program forecasts potential pathogen levels in a portion of the Schuylkill



River and uses the forecasts to make recommendations about safe use of the river. It also serves as an early warning system for drinking water contamination. The city used historical data to determine the relationship between water quality, stream flow and rainfall. Using this relationship, they can now predict bacteria levels by analyzing rainfall, stream flow and turbidity in real time. By using these predictors of pathogen presence, Philadelphia does not have to wait for time-consuming lab tests to determine whether there is a health risk. Using this relationship, the city makes recommendations about the safety of various recreational activities on the river that day and posts this information on their website where it is easily accessible. Similar programs exist for the Chattahoochee River in Atlanta, for the Charles River in Boston, and others around the country.

For more information visit:
<http://www.phillyrivercast.org/>

workers can wait 48 hours before contacting the media, rendering the purpose of public notification largely useless. In addition, states must ensure that media outlets consistently print or broadcast overflow notices. In several states, media notification is required, but notices are seldom published. Maryland avoids this problem by requiring POTWs to place paid advertisements in the paper. Although this might not be feasible in certain media markets, each state must consider this challenge if they decide to use the media as a primary method of public notification.

A quicker way of reaching people is direct notification via the phone or internet. Few states currently use the internet or phone hotlines to notify the public of sewer overflows, even though they are inexpensive and easy to implement. Certain municipalities and counties such as Portland, Oregon send interested residents emails when there is an overflow. Others, such as Kentucky's Sanitation District No. 1, maintain a phone hotline that tells residents whether there is an overflow alert in effect. Finally, the Michigan Department of Environmental Quality is required to maintain a website "promptly" listing information about sewage spills. Each state should adopt at least one of these methods of notification, as they offer cheap and effective means of communicating with affected citizens. These direct notification methods can be especially effective in communicating risk to regular recreational users that are at the highest risk of contact with sewage.

Posting signs at sewer outfalls and public access points to recreational waters is an essential means of notifying the public of dangerous pathogen levels. POTW workers and operators should be required to post signs at these points as soon as possible, but no later than 24 hours after becoming aware of a spill. The signs should be designed or approved by the state environmental agency or public health department to ensure that they are visible and readily comprehensible. The signs should either be in multiple languages corresponding to the local population or use universal warning symbols.



BOB NICHOLS, NRCS

Notifying public water intakes and other downstream water users is one of the most important steps for protecting public health and avoiding treatment plant problems.



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decrease the risk to public health. There is little reason why workers would be unable to report spills within several hours of discovery.

Annual Reporting

Thorough oversight by enforcement agencies is also an essential part of public notification. State environmental agencies should review each POTW's performance on an annual basis to determine what steps, if any, are necessary to decrease overflows. Environmental agencies can either require POTWs to submit annual reports of overflows or maintain a database of all reports for later synthesis and review. This database, or the reports, should be made publicly available, as they are in Michigan, as a further means of providing transparency and accountability. For either approach, it is important to maintain a systematic approach to monitoring and reducing overflows.

Finally, although few states currently require it, notifying public water intakes and other downstream water users is one of the most important steps for protecting public health and avoiding treatment plant problems.³⁹ Water intakes must know when source waters are contaminated so that they can take additional steps to protect drinking water. Workers at shellfish harvesting areas must also be notified so that contaminated harvests are not put on the market.

Public Health Agency Involvement

Another important component of public notification programs is the involvement of public health officials. In some states, health departments are not involved in notifying the public of overflows, while they have primary responsibility for notification in other states. In Virginia, for example, the health department may send a notice to newspapers when it deems an SSO threatens public health (although these notices are rarely printed).

Reporting to the State

Nearly all states currently require POTW workers to notify the state environmental agency of overflows within 24 hours of becoming aware of the spill, but the most protective programs require

more rapid reporting. Certain states such as Washington require immediate reporting when an overflow threatens shellfish areas, while Iowa is considering a 6 hour notification limit. Ideally, states would require POTW workers to report spills as soon as possible but no later than 12 hours after the spill. This would allow governments to react to spills more rapidly and



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A MODEL OF HEALTH DEPARTMENT INVOLVEMENT

Treatment plant operators in Kitsap County, Washington, are required to report sewer spills to the County Health Department. The Health Department provides quick and effective public notification by ensuring that signs are posted in the spill area and alerting the media with health advisories. The Health Department also works with the treatment plant to ensure clean up.

For more information; http://www.kitsapcounty-health.com/environmental_health/water_quality/sewagespills.htm



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Numerous states in this study are already lacking in basic enforcement of water pollution permits.

While it is not imperative that the health department notify the public or post signs, they should be integrally involved in some capacity, as they have expertise in communicating health



NELSON ROSS, TENNESSEE IZAAK WALTON LEAGUE

risks to the public. Additionally, public health agencies should be aware of sewage spills so they can better track illness occurrences and outbreaks that might otherwise be overlooked. POTW workers and operators should therefore contact public health officials of overflows on the same timely basis as environmental agencies.

their enforcement. Numerous states in this study are already lacking in basic enforcement of water pollution permits. Many environmental agencies do not have the resources or political will to identify, penalize and remedy sewer spills or discharges of other pollutants to state waters. Wastewater treatment facilities across the country may not report spills because there is little chance they will be held accountable. Thus passing new regulations is not a panacea, but a first step. State environmental agencies must also be given the resources to prevent sewage pollution and impose strict penalties to deter noncompliance, and funding for clean water infrastructure must be restored.

risks to the public. Additionally, public health agencies should be aware of sewage spills so they can better track illness occurrences and outbreaks that might otherwise be overlooked. POTW workers and operators should therefore contact public health officials of overflows on the same timely basis as environmental agencies.

Enforcement

Adopting the above recommendations is an important step towards protecting the public from the billions of gallons of untreated sewage released into American waterways every year, but passing new laws will only be as good as

NOTIFICATION AT COASTAL BEACHES

The federal BEACH Act provides grants to states to monitor beaches on coastal waters and in the Great Lakes and alert the public when there are elevated bacteria levels.⁴⁰ This is an important step to protecting public health, but places the responsibility on states to monitor waters without a similar duty for wastewater treatment plants and other polluters to alert the public when there is a spill. Notably, the BEACH program does not apply to inland freshwater streams, rivers, and lakes.

EVALUATION OF STATE NOTIFICATION PROGRAMS AND POLICIES

Sewage spill notification programs from 11 states throughout the country were evaluated against components of the model program.⁴¹ Research on state laws, rules, and policies was supplemented by speaking with state agency personnel and conservation organization staff (the methodology used for selecting states and researching state programs is detailed in Appendix A). The chart below indicates the extent to which residents are at risk of unknowingly coming into contact with sewage based on the information available to them.

The more detailed chart on page 19 summarizes the findings of this report and reveals the

great disparity between state programs – some have excellent procedures and implementation while others have virtually no right-to-know requirements. These findings underscore the vital need for a strong and consistent federal right-to-know requirement, as well as the great opportunity for states to implement robust and tailored programs to best protect their citizens. Further, the results highlight the central importance of implementation for states such as Alabama, which have a number of notification measures on the books, but a complete lack of implementation that negates the requirements and keeps the public in the dark.

NOTIFICATION PROGRAMS AND POLICIES BY STATE		
	States	Description
RED ALERT	Alabama, South Carolina, Kentucky, Tennessee	No public notification regulations on a statewide basis and/or a complete lack of implementation
ORANGE ALERT	Georgia, North Carolina, Virginia, Iowa, Oregon, Washington	Information is available sporadically, only for certain kinds of spills, or only in certain parts of the state
GREEN ALERT	Maryland	Strong public notification measures and successful implementation

FIGURE 5 - PUBLIC NOTIFICATION SUMMARY CHART

	AL	GA	SC	NC	TN	KY	VA	MD	IA	OR	WA
MUST NOTIFY											
State Environmental Agency within 24 hours	+	+	+	+	+	+	+	+	-	+	+
Health Department	+	+	-	-	-	-	+	+	-	+	+
Downstream users	+	+	-	-	-	-	-	+	+	+	+
PUBLIC NOTIFICATION METHODS											
Media	+	+	-	+	-	-	-	+	+	+	+
Signs at every overflow	-	+	-	-	-	-	-	+	-	+	-
Annual report from each plant	+	-	-	+	-	-	-	-	-	-	-
Direct notification (phone or internet)	-	-	-	-	-	-	-	-	-	-	-
DEGREE OF IMPLEMENTATION (1-5) (one is lowest and five is highest)	1	2	2	3	2	1	3	5	4	3	3

ALABAMA

A vague notification law on the books, and little to no implementation by the state environmental agency.

State Requirements

Alabama has vague reporting and public notification regulations and has been unsuccessful in implementing even these requirements. The state’s administrative code requires owners and operators of POTWs to report any unpermitted discharges to the Alabama Department of Environmental Management (ADEM) within 24 hours of becoming aware of the spill and to submit a written report of the spill within 5 days.⁴² This report must contain a description of the event, the timeframe of the spill, and actions taken to prevent future spills.⁴³ In addition to these general requirements, owners and operators are required to report SSOs to ADEM, the public, the county health department, and other affected entities such as public water systems as soon as possible.⁴⁴ There are no special regulations for CSOs because Alabama does not have any CSSs. Treatment plants are also required to file annual reports with ADEM detailing many aspects of their plant’s performance, including

the number of SSOs they have experienced in the past year. If POTWs have a large number of SSOs and are not addressing the problem, ADEM may take enforcement actions against the plant.⁴⁵

Implementation

Alabama’s regulations ostensibly provide for reporting and public notification of sewage overflows, but they are vague and largely ignored by ADEM and POTWs. The regulations do not specify how the public is to be contacted or establish a timeline for notification. Most importantly, there appears to be a complete lack of enforcement by ADEM. It is unclear what percentage of spills is reported to the state at all and there are few repercussions for failing to report. ADEM officials maintain that they are aware of most overflows but admit that treatment plants report sewage spills with varying degrees of diligence; some of them report spills as small as 100 gallons, while others only report larger spills or none at all.⁴⁶ There is little incentive to fulfill reporting requirements, as polluters in Alabama rarely face any repercussions for failing to comply with regulations.⁴⁷ In addition, many of the overflow reports ADEM receives

are inaccurate and do not provide adequate estimates of the volume of the overflow.⁴⁸

The mode of public notification varies across counties and there is no consistent process for determining which spills trigger notification. ADEM does not coordinate regularly with public health departments or ensure that they or the public have been notified as required by law.⁴⁹ Further, ADEM does not know whether either requirement has been fulfilled unless there is a large spill and it is brought to their attention that public health officials aren't involved.⁵⁰ As a result of Clean Water Act violations and subsequent legal action, certain municipalities, such as Mobile, have stricter public notification requirements.⁵¹ On the statewide level, however, there is a lack of consistency and enforcement of the notification requirements.

As a result of these shortcomings, there is very little awareness of sewage overflows among the public.⁵² While some larger spills might be publicized, most are not, and public health officials are either not informed of most spills or do little to publicize them.⁵³ Although strengthening public notification is currently not a top priority for environmental groups there is an environmental coalition to reform ADEM and force it to perform its duty of protecting the environment.⁵⁴

Analysis and Opportunities

Alabama needs stronger public notification regulations that will keep citizens of the state informed of the dangers of sewage pollution in their waterways. Improvements to existing regulations should clarify what spills are to be reported and establish consistent procedures for fulfilling the public notification requirements in the state's administrative code. Ultimately, the public would benefit from implementing internet or phone notification of spills. If there is to be any chance of success, however, ADEM must be willing and able to enforce these regulations, and at present this appears unlikely.

GEORGIA

Strong regulations, but uneven enforcement.

State Requirements

Georgia adopted public notification requirements for sewer overflows in 2001 in response to widespread concern among residents about public health threats from upstream sewage spills.⁵⁵ Previously, treatment plant owners were only required to report "major" spills to the Environmental Protection Division (EPD) — defined as any release of raw sewage in excess of 10,000 gallons or causing water quality violations — and there were no public notification requirements.⁵⁶

Current regulations require the owner of a POTW to immediately notify the EPD in person or by telephone of any spills that occur in the system.⁵⁷ They must also follow up with a written report within five days of the incident. The report must include, at a minimum, the date, location and volume of the spill as well as measures taken to reduce the spill's impact. The owner must also report the spill to public health departments in the area and notify the public in several ways.⁵⁸ They must report the incident to local media including television, radio, and print sources within 24 hours. They must also post notices where the spill occurred, where it enters state waters and at downstream public access points, although it is left to POTW workers to interpret these rules and place the signs.⁵⁹

A subset of Georgia's notification regulations only apply to major spills. The owner or opera-



tor responsible for a major spill and the EPD are both required to notify all county, municipal and other public agencies whose water supply is within 20 miles downstream and any others that might be affected.⁶⁰ The owner must also publish a notice of the spill in the official media source of the county, which is published within seven days of the incident. Finally, the treatment plant must establish a comprehensive water monitoring program of waters affected by a major spill for at least one year at their own expense. The results are provided to all downstream public agencies using the waterway as a public water supply source.⁶¹

Implementation

The impact of Georgia's strong public notification guidelines is greatly reduced by a lack of effective implementation or enforcement. There has been an overall increase in reporting since the introduction of the new regulations, especially in sensitive, high-growth areas such as Atlanta, where spills trigger automatic enforcement actions.⁶² However, there is still widespread non-compliance with reporting regulations, and the public remains uninformed of many spills.⁶³ One of the largest problems is that many treatment plants do not regularly report spills due to the lack of enforcement for non-reporting. Although there are fines for failure to report spills (in addition to noncompliance penalties), treatment plants that are violating their NPDES requirements may decide not to report assuming that EPD does not have the resources to investigate or take enforcement actions, and in many cases they are correct.⁶⁴ Even when penalties are assessed, they are not sufficient to encourage POTW owners to address the underlying overflow problems, as fines are significantly less costly than capital improvements necessary to address the problem.

In addition, public notification is not reaching many parts of the population. Larger spills are publicized on television, but many smaller spills are not reported in the media, and posting of contaminated waterways is erratic.⁶⁵ Despite these shortcomings, there are localized efforts to improve public notification in areas with chronic overflow problems and poor reporting records such as the City of East Point.⁶⁶



NELSON ROSS, TENNESSEE IZAAK WALTON LEAGUE

Analysis and Opportunities

Georgia's notification requirements are a model for the region, but they need to be accompanied by increased enforcement and improved implementation. EPD needs additional resources to ensure that spills are being reported, and it needs to increase penalties to discourage intentional non-compliance with notification regulations. The agency could also benefit from improving its methods of outreach to the public. EPD either needs to ensure that spill notices are picked up by local media outlets or create a website or phone hotline to notify the public. Additional resources and stronger implementation would make Georgia a regional leader in protecting public health from sewage pollution.

SOUTH CAROLINA

Weak notification laws with uneven enforcement.

South Carolina has minimal reporting and notification requirements. All sewage spills that enter state waters or have a volume greater than 500 gallons must be reported to the Department of Health and Environmental Control (DHEC) within 24 hours.⁶⁷ DHEC also requires POTW owners to submit an SSO reporting form within 5 days of a spill.⁶⁸ Regional DHEC water officers decide whether or not to contact public



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Implementation

Even the minimal reporting and notification requirements currently in place in South Carolina do not function effectively. Many overflows go unreported and DHEC may be unaware of as many as half of all spills.⁷⁴ Anecdotal evidence further suggests that communication between DHEC and POTWs is inadequate. For instance, a 2007 news article revealed that DHEC did not have any record of overflow reports submitted by the city of Greenville.⁷⁵ A city employee claimed they reported all 13 unpermitted discharges in 2006, but a DHEC official admitted that they were “not sure where they’re sending those reports.”⁷⁶ Furthermore, the only form of statewide public notification, posting signs at outfalls, is lacking. At one park in Columbia with a canoe launch directly downstream from a sewer overflow point, there are no signs warning the public.⁷⁷

Opportunities and Analysis

Although the sponsor of the 2002 bill is no longer in the legislature, adopting the requirements in that bill would be a good first step towards strengthening South Carolina’s notification procedures. The following steps would provide a comprehensive program that would greatly reduce the threat to public health. First, officials should require that POTW owners report all spills to DHEC, not just those that reach state waters or exceed 500 gallons in volume as is currently required. Spills that do not require reporting under current guidelines could still pose a threat to human health. The state also needs to clarify procedures for contacting public health officials, posting outfall points and notifying downstream communities. These actions should be undertaken in any circumstances where there is a threat to public health. In addition, the state must work to inform its citizens of sewage spills by requiring POTWs to report spills to media outlets in a timely manner and preferably by directly notifying residents through email, internet and phone hotlines. South Carolina must furthermore strengthen enforcement and work harder to ensure that current reporting guidelines are being followed.

health officials, and there is no set policy outlining which spills warrant their involvement.⁶⁹ There are no regulations requiring DHEC or POTWs to contact water intakes or other downstream users, although DHEC sometimes notifies them.⁷⁰

There is virtually no public notification of spills in South Carolina. DHEC may require POTW owners and operators to post signs at sewer outfalls, but it exercises that authority irregularly, on a case by case basis. There is no statewide requirement that POTW operators or agency staff notify media outlets or contact the public directly, and a DHEC official could not recall ever contacting a newspaper to notify them of a spill.⁷¹ However, an environmental reporter for the Columbia-based newspaper *The State* has received occasional reports of spills from DHEC but suspected that there were many more spills for which he didn’t receive notice.⁷²

There has been a push for stronger public notification in recent years. A bill was introduced in the State Legislature in 2002 that would have required DHEC to notify the public and downstream users of unpermitted sewage spills, but the bill did not make it out of committee.⁷³

NORTH CAROLINA

A partial public notification law with key omissions and irregular enforcement.

State Requirements

North Carolina has the beginnings of a successful public notification program. POTW owners and operators are required to report spills to the Division of Water Quality (DWQ) within 24 hours.⁷⁸ They are also required to submit an SSO reporting form to the regional DWQ office within 5 days of becoming aware of an SSO.⁷⁹ While reporting to DWQ has been required since the early 1990s, public notification requirements were legislated in the North Carolina Clean Water Act of 1999.⁸⁰ These new requirements were written in response to public concern over a series of high profile sewage spills throughout the mid to late 1990s.

The 1999 changes to North Carolina state law require the owner or operator of a treatment plant or collection system to issue a press release to all electronic and print media sources in the county within 48 hours of any sewage spill over 1,000 gallons that reaches state waters.⁸¹ Discharges to state waters of over 15,000 gallons require owners or operators to publish a notice of discharge in a major newspaper in any counties affected by the spill within 10 days.⁸² The bill also mandates that POTW owners provide customers and the Department of Environment and Natural Resources with an annual report on the treatment plant's performance, including any violations of laws or regulations such as unpermitted sewage spills.⁸³

Implementation

North Carolina's reporting and public notification regulations have been successfully implemented in parts of the state, especially urban areas. POTWs in heavily populated areas diligently report spills to DWQ and news outlets.⁸⁴ A survey of media outlets reveals numerous reports of sewage spills, especially in the New Bern area. The DWQ ensures that owners are aware of their reporting responsibilities by issuing a comprehensive set of NPDES reporting requirements to treatment plants. Groups such as

the Neuse Riverkeepers have contributed to program success and have been very involved in ensuring that spills are reported and publicized.⁸⁵ They have developed relationships with workers at POTWs and receive personal notification when there is a spill. As a result of this external oversight, most POTW owners within this watershed are diligent about reporting spills and notifying the public for fear of negative media attention and enforcement by state environmental officials.

Despite these successes, there are a number of key shortcomings that diminish the effectiveness of the public notification regulations. To begin, DWQ enforcement of sewage spills and notification regulations is erratic and occurs consistently only in certain well-populated areas.⁸⁶ In rural areas that lack dedicated environmental groups, enforcement is less stringent. There is less risk of being punished for failing to comply with reporting regulations, and the DWQ has insufficient resources to enforce the regulations throughout the state.⁸⁷ Uneven enforcement is compounded by the fact that health department involvement in public notification varies by county⁸⁸. There is no statewide requirement to post overflow sites or notify downstream water users or health departments of overflows. However, certain county health departments diligently post signs and notify downstream users such as shellfish harvesters while others do not.⁸⁹ Finally, overflow notices in media outlets are ineffective at present. The 48 hour deadline for issuing a press release does little to protect public health,⁹⁰ and the notices aren't always published or presented in a manner that attracts public attention.⁹¹

Analysis and Opportunities

Despite having some of the stronger regulations in the region, North Carolina needs to take steps to increase the effectiveness of its public notification requirements. First, the state must shorten the time period for issuing press releases and work with POTW operators and media outlets to ensure that notices are printed. The state should also supplement media notices with direct notification methods such as email or phone hotline notification. These methods could significantly

increase the visibility of sewage spills. The state would also benefit from defining the role of local health departments, establishing guidelines for posting at outfalls and requiring notification of downstream users. This would increase the regularity and dependability of sewer overflow notification. Finally, the state must increase enforcement actions for NPDES permit violations in rural areas.

TENNESSEE

Very limited public notification and poor implementation.

State Requirements

Owners and operators of POTWs are required to report any unpermitted discharges to the Tennessee Department of Environment and Conservation (TDEC) within 24 hours of becoming aware of the spill, and they must also follow up in writing within 5 days.⁹² They are not required to contact the health department, although the Water Pollution Control Office of TDEC notifies them in the case of large spills.⁹³

The only form of statewide public notification is the posting of signs at chronic overflow points. Signs are posted at the discretion of the commissioner of TDEC, and are placed at most outfalls where water quality guidelines are exceeded or where there is a high potential for human contact with sewage.⁹⁴ Some POTWs with a history of sewer overflows have consent decrees that require stronger public notification measures.⁹⁵ Knoxville, for instance, posts signs at overflow sites, issues media releases, maintains a website that lists all SSOs within 24 hours of being reported⁹⁶ and even distributes door hangers in certain cases.⁹⁷ These measures were motivated by a citizen's lawsuit in response to the city's poor record on reducing overflows and notifying the public.⁹⁸

Implementation

TDEC's implementation of reporting and notification regulations is uneven and insufficient in many parts of the state. There are POTWs that do not comply with reporting regulations, and the modest penalties provide little incentive for

dishonest POTW owners and operators to reform.⁹⁹ There is disagreement on this point, as a TDEC official maintained that past penalties for non-compliance had discouraged further violations.¹⁰⁰ In many parts of the state there is virtually no information available to the public about sewer overflows, and little awareness of sewage pollution in general.¹⁰¹ Signs posted at outfalls are too small to be effective and are not maintained.¹⁰² Thus even this basic form of public notification is ineffective. One exception is Knoxville, where media notices and signs are prevalent and keep the public well informed.¹⁰³

Analysis and Opportunities

Tennessee needs to begin building a public notification program to protect its citizens from sewage pollution. To begin, they should require POTW owners and operators to inform downstream water intakes and local health departments of spills. They must also institute a statewide requirement that the public be notified through the media and preferably through other methods such as the internet and phone hotlines. Requiring annual reports from POTWs would also help TDEC identify chronic violators and reduce untreated discharges.

KENTUCKY

No public notification and little effort to reduce sewage pollution.

State Requirements

POTW owners and operators are required to report all spills to the Division of Water within 24 hours and to follow up in writing within 5 days.¹⁰⁴ Reports must be made to both the central office of the Division and the regional office where the spill occurred.¹⁰⁵ This regulation pertains to any type of spill including CSOs and SSOs, even if they do not reach state waters.¹⁰⁶ There is no requirement to contact health departments or downstream communities of spills.

There are no statewide public notification requirements in Kentucky at present. The Division of Water posts waterways that regularly exceed water quality criteria, but there is no posting after individual spills.¹⁰⁷ NPDES permits

for a handful of the state's 17 CSO communities require municipalities to post signs at CSO outfalls as required by federal law, and the state is pursuing consent decrees that would include a posting requirement for all of these communities.¹⁰⁸ In addition, 40 communities have SSO control plans, but none of these include public notification requirements.¹⁰⁹ The state is planning to revisit the SSO control plans in 2007 and may incorporate signage requirements.¹¹⁰

One exception to Kentucky's lack of public notification requirements can be found in Northern Kentucky's Sanitation District Number 1, which has a model notification program. The district came under a consent decree in 2005 after repeated sewage discharges in violation of the Clean Water Act.¹¹¹ Under the consent decree the district was required, among other things, to notify the public of sewer overflows, and it has initiated an ambitious program to accomplish that goal. The district sends email alerts and maintains a phone hotline that informs residents of CSOs in their area.¹¹² The district also issues advisories when precipitation sufficient to trigger a CSO (0.25 inches or above) is predicted. Finally, the district diligently posts warning signs near all CSO outfalls.

Implementation

Local groups agree that there is very little information available to the public about sewer overflows.¹¹³ While some more informed residents in larger cities may be aware of sewage pollution issues, the majority of the state's citizens remain unaware. Compounding the lack of publicly-available information is DEP's general reluctance to take enforcement actions or levy substantial fines against POTWs for overflows, and there is thus little incentive to reduce pollution.¹¹⁴ Only Louisville and Sanitation District No. 1 regularly pay fines due to automatic penalties under consent decrees.

Analysis and Opportunities

Kentucky needs to begin building a public notification program to protect residents from sewage pollution. Untreated waste from sewage treatment plants is the third most important

source of water pollution in Kentucky, impairing 13% of the state's monitored waterways.¹¹⁵ The state must involve local health departments to help determine the threat a spill poses to human health, and institute regulations requiring notification of downstream water intakes. Finally, the state should follow the lead of Sanitation District No. 1 and institute strict posting guidelines as well as phone hotlines and web notification to inform residents of bacterial contamination of their waterways. While the Water Division's plan to institute posting requirements in SSO control plans is a first step, Kentucky has the opportunity to create a more effective body of notification regulations that will protect the public from a major source of water pollution.

VIRGINIA

Little notification at present but additional requirements under consideration.

State Requirements

Virginia currently has basic reporting and notification requirements that could be significantly strengthened, as the Department of Environmental Quality (DEQ) is considering regulatory changes. At present, state law requires reporting of all unpermitted wastewater discharges, includ-



ing SSOs and discharges from satellite collection systems that do not have permits, to DEQ.¹¹⁶ DEQ receives these reports and notifies the Virginia Department of Health (VDH) of any spills that are over 1,000 gallons in volume or last longer than 24 hours.¹¹⁷ There are no regulations requiring notification of downstream communities or annual reports from POTWs.

Virginia has few public notification provisions at present. When the health department deems that an SSO poses a threat to human health, it sends a press release to newspapers. Newspapers do not routinely report on SSOs, however, and a DEQ official could not recall ever seeing notice of an overflow in a newspaper.¹¹⁸ There is no requirement to post signs at outfall sites and posting does not occur regularly.¹¹⁹

Because these requirements are clearly insufficient to protect public health, DEQ and VDH are in the process of revising notification procedures. The dual agency committee to address new notification is expected to reconvene soon, and new regulations may be in place in 2007.¹²⁰ The committee is considering implementation of posting requirements and ways to improve media notification and health department involvement. They are also considering creating a website for reporting and public notification of sewer overflows.¹²¹

Virginia's three CSO communities have different reporting requirements. Overflows are only reported to DEQ in annual reports.¹²² The only method of public notification commonly employed is posting notices where CSOs enter state waters and at recreational access points. These signs are inspected weekly and replaced when necessary. Officials concentrate on educating residents about the connection between rainfall and CSOs rather than notifying them of each individual occurrence.¹²³

Implementation

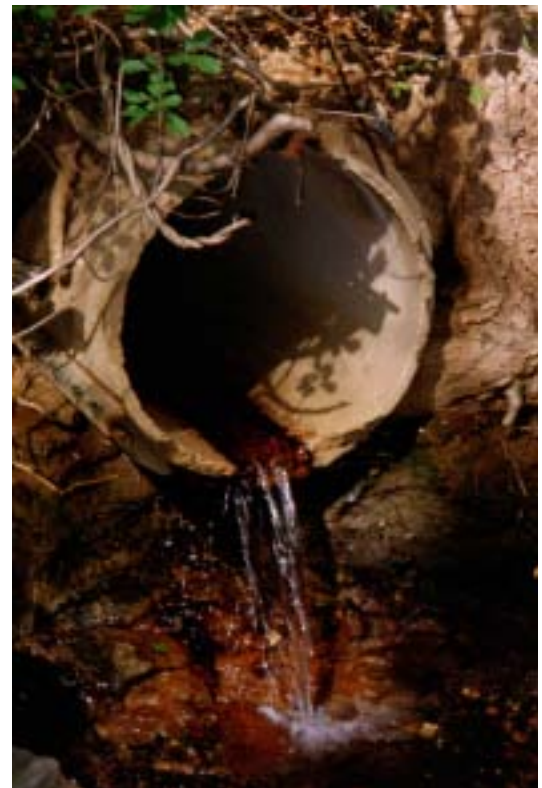
Communication with the public regarding sewer overflows is ineffective in Virginia. Environmental groups mostly hear about spills from citizens that notice a fish kill or other indications of a pollution event.¹²⁴ The breakdown in communication stems from several sources. First, VDH,

which receives notification of spills from DEQ, often fails to take any action to protect public health.¹²⁵ When press releases are issued, they are rarely printed and few people see them.¹²⁶ The public is consequently unaware of most spills.

Despite the ineffectiveness of public notification regulations, portions of Virginia's reporting system work well. POTW owners and operators are well aware of the reporting requirements and follow the guidelines diligently. Most cases of non-reporting occur when owners are unaware of spills.¹²⁷ In addition, there are well-established lines of communication between DEQ and VDH for reporting sewer overflows, and there is a strong working relationship between the agencies.¹²⁸ Strong interagency communication is ineffectual if neither the DEQ nor VDH use the information to inform the public, however.

Analysis and Opportunities

Sewage pollution is a major problem in Virginia, and well publicized spills such as the 17 million gallon overflow at Washington D.C.'s Blue



AMERICAN RIVERS IMAGE LIBRARY

Plains sewage treatment plant into the Potomac River in 2006 have stirred public interest in the matter.¹²⁹ The state needs to respond to public concern and improve its public notification regulations. As Virginia reconsiders its public notification procedures, it must expand its outreach methods. The state should institute a requirement to notify downstream public water supplies, improve posting of recreational waterways and directly communicate with the public to alert them of the dangers of sewage pollution. A routinely updated website would allow many residents to avoid contact with polluted waters.

MARYLAND

Strong notification regulations and effective implementation.

State Requirements

Maryland has strong public notification requirements for sewer overflows. Maryland's new notification regulations, which went into effect in 2005, were required by earlier state legislation that mandated stronger reporting of SSOs.¹³⁰ In addition to state law, the impetus for new regulations resulted from pressure by environmental groups and a desire for stronger regulations from Maryland Department of the Environment (MDE) staff, who previously had to rely on voluntary reporting to the agency.¹³¹ The current reporting and notification requirements are comprehensive and cover any discharges of raw, diluted or partially-treated wastewater.

Under the new regulations, all wastewater system operators must report any sewage discharges into state waters to MDE and the local health department within 24 hours.¹³² The initial telephone report must provide comprehensive information on the spill including the date, location and cause of spill, as well as steps taken to mitigate the impact of the spill and whether public notification has occurred. Within five days of telephone notification, the owner or operator of the plant in question must submit a written report to MDE and health officials.¹³³

Maryland regulations require the wastewater system operator to directly notify the public within 24 hours any time a spill poses a threat to

SOME COUNTIES TAKE THE LEAD

Ultimately, each Maryland county health department determines how it will notify the public and whether it will surpass the minimum requirements. Anne Arundel County, on the Western shore of the Chesapeake Bay, has an exemplary notification program that includes email alerts, a regularly updated website and a phone hotline. The county public health department issues beach closures or health advisories depending on the size of the spill and uses the above methods as well as local media involvement to inform affected communities. Anne Arundel also has fliers which community service agencies may use in door-to-door notification campaigns.¹³⁴ The whole state could benefit from such rigorous regulations.

human health or is over 10,000 gallons.¹³⁵ Public health officials can waive public notification requirements if they decide they are unnecessary in a given case. When notification is required, the owner or operator must place a public service announcement or paid advertisement in a daily newspaper, radio station or television station. Public health officials can also require operators to post signs at affected waterways where they consider there to be a threat to human health. Wastewater system operators must also directly notify downstream establishments with vulnerable populations such as day care centers, schools or hospitals. If a spill is less than 10,000 gallons and does not pose a health threat, operators can instead notify the public through quarterly or annual reports, reports included in water bills or a website. The owner or operator must also monitor affected waters after the spill and provide sample results to MDE within 14 days.¹³⁶

Implementation

Maryland's strong notification regulations benefit from effective implementation. There has been a significant increase in reporting of large overflows since the new regulations have been put in place, and most spills are reported and



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appear in local media outlets.¹³⁷ MDE draws generally positive remarks for its performance on sewer overflow reporting and notification issues.¹³⁸ It remains unknown, however, what percentage of spills are detected and reported. The only method of ensuring that owners/operators are complying with the regulations is to follow up on reports of spills from citizens and environmental groups. MDE has only assessed penalties for non-compliance with reporting regulations one time.¹³⁹ However, MDE has inadequate staff and funding to increase enforcement.¹⁴⁰ While increased resources could improve enforcement, most agree that notification in Maryland is fairly good.¹⁴¹

Analysis and Opportunities

While Maryland's notification requirements encompass all types of sewage releases and are a step in the right direction, there are a number of ways they could be strengthened. Maryland residents could benefit from the use of email, website or phone alerts of sewage overflows. These could significantly strengthen outreach to the

public and improve citizens' ability to avoid contact with untreated sewage. MDE maintains a list of CSOs, SSOs and bypasses for the past five years on its website, but it is not updated quickly enough to protect public health.¹⁴² Maryland could also strengthen its notification regulations by requiring annual reports from each wastewater treatment plant and pre-notification of spills prior to wet weather events. While current regulations are protective of public health, they could be better.

IOWA

Notification requirements currently under consideration, but none currently in existence.

State Requirements and Expected Changes

Iowa has virtually no formal reporting and notification requirements at present beyond federal requirements to report bypasses within 24 hours and to report overflows as part of monthly discharge monitoring reports.¹⁴³ Owners and operators are not required to contact the media, notify the public, or post signs at all outfalls. However, Iowa is a unique state in which reporting and notification practices exceed requirements of state law. In practice, owners and operators report some spills to the Iowa Department of Natural Resources (DNR) and even notify downstream drinking water intakes.¹⁴⁴ When the DNR receives a report of a spill that threatens public health, they often notify downstream water intakes and public health departments if the owners or operators have not. The majority of the time DNR also puts a story on the newswire.¹⁴⁵ None of these actions are required by state regulations or law, however. While not a statewide requirement for SSOs, certain CSO communities with a history of sewage spills into recreational waters are required to keep signs posted at outfalls in compliance with national CSO policy.¹⁴⁶

The DNR is currently in the process of writing new regulations, and is expected to formulate rules later this year defining the actions field

offices must take when they receive a report of a sewage spill. The full body of regulations defining the reporting and public notification responsibilities of POTW owners will likely not be finished for a year or more.¹⁴⁷ Officials expect that new rules will require treatment plant owners to report SSOs within 12 hours of becoming aware of them, but do not expect that the new rules will address CSOs or posting at outfalls for any type of sewer overflow. State officials are focusing on reducing CSOs rather than improving public notification.¹⁴⁸

Implementation

The DNR is one of the few agencies that notify the public of sewer overflows in the absence of regulations requiring such action. Reporting and public notification are increasingly gaining visibility among state regulators, and the rule revision process has the potential to formalize the measures currently implemented by the DNR. The need for better public notification is gaining traction following a spate of sewage bypasses in the spring of 2007.

Analysis and Opportunities

It is difficult to gauge how successful Iowa has been at protecting citizens from sewage pollution. The near-complete lack of reporting and notification guidelines is certainly alarming. This is tempered somewhat by the fact that officials sometimes notify the media and downstream users when they become aware of sewage spills despite the lack of regulations or outside pressure to do so.

Iowa is essentially starting from scratch in building a public notification program. A formalized system that ensures communication between owners/operators and state environmental officials, mandates media alerts, and defines the circumstances under which downstream users are notified would greatly strengthen the state's ability to protect public health. Including stronger posting requirements, email notification of spills and annual reports from treatment plants would further add to the state's fledgling program. This upcoming rulemaking process presents an immediate opportunity to create a robust program.

OREGON

Basic notification requirements with inconsistent implementation.

State Requirements

Oregon has separate reporting and notification requirements for SSOs and CSOs. All non-CSO communities are required to report spills by telephone within 24 hours to the Department of Environmental Quality (DEQ) during normal business hours and to the Oregon Emergency Response System (OERS) at other times.¹⁴⁹ In practice, most reports are received in less than 24 hours.¹⁵⁰ The speed of notification to the state following a spill depends on the season. In winter, wet weather causes frequent overflows, most of which are diluted by stormwater, and POTW workers wait until morning to notify officials. In summer, when spills are not related to wet weather and have higher pathogen concentrations,¹⁵¹ workers alert officials as soon as they are aware of a spill.¹⁵² In every case, they must also follow up with a written report within five days.¹⁵³

NPDES permits for sanitary sewer systems state that Oregon DEQ may require owners and operators to notify the public of overflows through posting at affected sites, news releases or paid announcements on radio or television.¹⁵⁴ DEQ requires public notification on a case by



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case basis when they deem there is a threat to public health. In practice, all spills near coastal beaches trigger notification and posting based on BEACH Act regulations, while inland spills trigger public notification when they are close to recreational waters or during low flow conditions.¹⁵⁵ While it is not written in NPDES permits, downstream public water intakes are regularly notified of spills by the POTW, DEQ, OERS or sometimes all three.¹⁵⁶

Public notification and reporting requirements for Oregon's three CSO communities vary from permit to permit. One CSO community, Corvallis, had not had an overflow for six years prior to this winter's extreme storms and flooding, while Portland has the largest number of CSOs, and Salem has a small number of overflows every year.¹⁵⁷ Portland has strong notification guidelines, as mandated by a legal agreement in 1991 that required the city to reduce CSOs and notify the public.¹⁵⁸ From mid-May to mid-October, when the river alert program is in effect, the city opens hinged flip-down CSO warning signs, and sends alerts to the media.¹⁵⁹ The city also maintains a River Alert Hotline with recorded messages about

overflow alerts and sends CSO alerts via email to interested residents. In the winter, there is a blanket CSO advisory because of frequent overflows, and CSO warning signs are kept open.¹⁶⁰ Contact with the Willamette River is discouraged for the entire season.

Implementation

There is considerable disagreement between DEQ and community groups over the effectiveness of public notification. Enforcement officers maintain that they are very active in visiting the sites of spills and ensuring that the regulations are followed. They further note that papers regularly publish overflow notices and that municipalities are very cooperative in working with DEQ to fulfill public notification guidelines.¹⁶¹ Environmental advocates in parts of the state note that they rarely see notices of sewer overflows, and many consider notification to be inadequate.¹⁶² Some also note that enforcement is lacking in rural areas, where DEQ has fewer resources and employees.¹⁶³

More broadly, DEQ has been criticized for a failure to clamp down on polluters. A 2005 EPA review of Oregon's NPDES program finds a lack of enforcement actions associated with SSOs and notes that DEQ is overly reliant on mutual agreements with extended timeframes to reduce noncompliance.¹⁶⁴ The report confirms that the quality of permits and enforcement is inconsistent across the state, but also notes that the NPDES permit program needs additional resources to fulfill its mandates.

Analysis and Opportunities

Public notification of sewer overflows in Oregon is characterized by inconsistency. While it is very strong in certain areas, it seems to be lacking in rural regions. DEQ needs to ensure that public notification regulations are implemented consistently across the state. They could also benefit from expanding the use of phone hotlines and the internet to alert residents of sewage pollution. The basic elements of a successful program are in place, but increased enforcement is essential to realize their full potential.



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WASHINGTON

Successful informal policies for SSOs but little notification for CSOs.

State Requirements

Washington State has a unique system of public notification for SSOs that relies on personal relationships with treatment plant owners and operators rather than legal requirements. Basic reporting requirements for SSOs are written into NPDES permits, which require owners of sanitary sewer systems to report overflows to the Department of Ecology (DOE) by telephone within 24 hours and follow up in writing within five days.¹⁶⁵ The written report must contain a description of the overflow including the duration and volume of the spill as well as actions taken to prevent future spills.¹⁶⁶ In addition, any overflows that affect shellfish areas require immediate notification to the regional Ecology office and the Department of Health's shellfish number.¹⁶⁷

DOE maintains that the public is regularly notified of SSOs despite the fact that public notification is not required by law or written into

NPDES permits. DOE often asks owners and operators to contact the media, health officials or downstream communities after spills. Posting at overflow outfalls follows a similarly informal pattern. Inland outfalls with frequent overflow problems are regularly posted.¹⁶⁸ Only coastal waters must be posted by law, under requirements set by the federal Beach Environmental Assessment and Coastal Health (BEACH) Act.¹⁶⁹

Reporting of CSOs is handled differently from SSOs. All owners and operators of CSSs are required to submit annual reports detailing their overflows, but are only required to report individual CSOs when they are caused by a mechanical failure or some other unusual circumstance rather than wet weather.¹⁷⁰ NPDES permits for municipalities with a history of overflows, such as Bremerton, require the permittee to contact local health officials.¹⁷¹ Public notification of CSOs varies depending on the permit, and while newer permits include basic notification guidelines such as posting at outfalls, others do not,¹⁷² in violation of EPA's Nine Minimum Control measures, which require all combined sewer systems in the country to inform citizens of CSOs.¹⁷³ DOE does not require other public



notification measures for CSO communities, although a number of facilities contact the media voluntarily or use internet and email notification.¹⁷⁴ The DOE is recommending that others follow suit, but has yet to require any of these measures in permits.

Implementation

It is unclear how effective DOE has been in implementing public notification for SSOs. Ecology officials maintain that they have been successful due in large part to an emphasis on visiting treatment plants and building relationships with the staff.¹⁷⁵ They note that the combination of personal relationships and substantial fines when POTWs fail to report spills has encouraged compliance. This is difficult to confirm, as public attention has focused more on CSOs. Community members note that DOE favors the business community at times by issuing weak fines and not enforcing some cases of non-compliance.¹⁷⁶

Public notification of CSOs is inadequate at present. While some municipalities with CSSs have signs at outfalls, there is very little media coverage and the public is mostly unaware of the problem.¹⁷⁷ Environmental groups have sent

comments to the Department of Ecology requesting that they install signs at outfalls and implement newspaper and email notification for CSOs.¹⁷⁸ As yet, DOE has failed to adopt a consistent state-wide approach to inform the public of CSOs and comply with federal law governing CSO control.

Analysis and Opportunities

While Washington has built a partially successful notification program despite lacking a legal grounding, there are a number of changes that could strengthen the existing program and increase its consistency. It is unclear whether the public notification methods are implemented evenly across the state, and codifying the practice of contacting public health officials, notifying downstream communities and contacting the media would help ensure consistent practices throughout Washington. There is greatest room for improvement in the CSO communities that violate federal law by failing to notify residents of CSOs. Strengthening the regulations by making voluntary reporting to the media mandatory, and expanding the use of web and email notification would allow a greater number of citizens to avoid contact with polluted waterways.

CONCLUSION

The rising tide of sewage polluting our waterways poses a significant health threat to the American public and the ecosystems on which they depend. Reducing the volume of sewage pollution requires innovative approaches and a significant investment of resources to meet the needs of a growing population while protecting the public's right to a safe and healthy environment. In the interim, as sewers continue to overflow on a regular basis, citizens have a basic right to know when it is unsafe to swim or play in local streams, rivers, and lakes. It is essential that all Americans are informed of sewage contamination in their waterways so that they may protect themselves and their families. Timely information is a powerful first line of defense.

To improve the public's access to information about sewage spills, state and federal notification requirements must be improved. Stronger federal

requirements such as those proposed by the Clinton administration and in proposed federal legislation would establish a minimum standard that all states must meet. This would provide an enforceable and consistent baseline that states may not fall below, providing a safety net for all Americans. Given the complete lack of public notification in a number of states examined in this report, such a minimum standard is essential. States should also be encouraged to implement more stringent notification policies using the outreach methods that best suit the characteristics of their population as highlighted throughout this report. Taking action on both state and federal levels is the best way to ensure that all Americans will know when they can safely use local waterways and will promote accountability and transparency that will ultimately help drive a reduction in sewage pollution.

Timely information is a powerful first line of defense.



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APPENDIX A

Research Methodology

American Rivers considered a number of criteria in choosing the eleven states examined in this report. Certain areas such as the Great Lakes and Florida have previously been the subject of extensive studies addressing public notification regulations. American Rivers chose the eleven states in this report in part because it has ongoing projects in the northwest and southeast. Examining an array of states across the country also allows for comparisons across very different environmental and political circumstances. By examining these states, this report fills a gap in the literature and provides a snapshot of public awareness of sewage pollution in the United States.

In conducting the research, American Rivers used a number of sources to evaluate public notification regulations. The research process consisted of three steps. We began by examining the text of relevant state laws, regulations and NPDES permits. Some states had detailed accounts of notification procedures readily available, while others had little information. This provided an initial account of the notification procedures in place. Next we conducted informal telephone interviews with officials at regulatory agencies in each state. This process allowed us to get a better sense for how the public notification regulations are implemented in each state. These conversations were also an important source of information on informal notification procedures environmental agencies regularly follow that are not formalized in state laws or regulations. Finally, we contacted a number of water policy staff at environmental organizations in each state to determine whether regulations are being followed and what changes are necessary to strengthen these programs.

While the set of questions evolved over the course of the interviews and were specific to the circumstances in each state, the following queries were used most often in interviews.

State Officials

- ❖ Do your reporting and/or public notification regulations pertain to CSOs, SSOs or blending?
- ❖ Are there any special requirements pertaining to CSOs?
- ❖ Did your state set public notification measures for CSOs as required under the 1994 EPA CSO Control Policy?
- ❖ *If there are notification requirements passed by the state legislature: When were the requirements passed? What was the motivation? Were there environmental or public health groups involved in getting them passed? Was there any funding attached to the bill?*
- ❖ Are there any public notification requirements?
- ❖ Do you notify downstream communities of overflows?
- ❖ Do you notify public health officials?
- ❖ Do you notify the media?
- ❖ Are press releases picked up by the media?
- ❖ Is there any kind of direct notification of spills through phone, email, or fax?
- ❖ Do you maintain a website with overflow information?
- ❖ Are there signs at overflow sites?
- ❖ Are POTW owners required to make annual reports about overflows during that year?
- ❖ Are there currently any efforts in the state legislature or within your agency to strengthen requirements?
- ❖ Are there any counties or municipalities going beyond the minimum requirements?

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- ❖ How successful has implementation been?
 - ❖ What percentage of SSOs do you think are reported?
 - ❖ Have there been examples of noncompliance by POTWs?
 - ❖ Are these regulations sufficiently protective of public health?
 - ❖ Are additional requirements necessary?
 - ❖ Are there any nongovernmental groups advocating for additional reporting requirements?

Environmental Organizations

- ❖ Is information on sewer overflows available in a timely manner?
- ❖ Does the information reach large portions of the population?
- ❖ Is it an issue the public is aware of and concerned about?

- ❖ Are there signs at outfalls or spill sites?
- ❖ Are there notices in the paper or on television?
- ❖ Do treatment plants report most spills?
- ❖ Have there been cases of non-reporting?
- ❖ Is the state environmental agency diligent in ensuring that POTWs report and do they penalize noncompliance?
- ❖ How is your state environmental agency on enforcement in general?
- ❖ Is there an incentive to change bad behavior?
- ❖ Are you or any other environmental or public health groups in the state working on sewage issues or public notification?
- ❖ What could be done to improve public notification and protect public health in your state?



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