

Pipeline



Small Community Wastewater Issues Explained to the Public

COMBINED SEWER OVERFLOWS (CSOs)— A PRIORITY FOR SMALL COMMUNITIES

Combined sewer overflows, or CSOs, are a problem for many communities across the U.S. On April 11, 1994, the U.S. Environmental Protection Agency (EPA) announced a new national policy for controlling CSOs in order to help communities meet the requirements of the Clean Water Act. According to the CSO Control Policy, all communities that have combined sewer overflow problems should implement certain minimum controls as soon as possible, and no later than January 1, 1997. Additional CSO controls will be addressed in a long-term control plan.

While CSOs have long been recognized as a significant source of water pollution, this policy marks a new

initiative by EPA to regulate CSOs and to provide help and guidance for communities working to solve their CSO problems.

Small communities, in particular, will benefit from many aspects of the new policy, including a recognition of the site-specific nature of CSOs and more flexibility for compliance. Because of the upcoming deadlines for compliance, small community residents and officials need to be aware of their CSO status.

This issue of *Pipeline* focuses on CSO issues for small communities. For more information about the CSO Control Policy, and a list of the nine minimum controls and important CSO contacts, see the articles beginning on page 2. 💧

WHAT ARE CSOs?

Combined sewer overflows (CSOs) are remnants of the country's early infrastructure, when cities built combined sewer systems for collecting both wastewater and stormwater. Many of these combined sewer systems are still in operation today and are usually found in older communities.

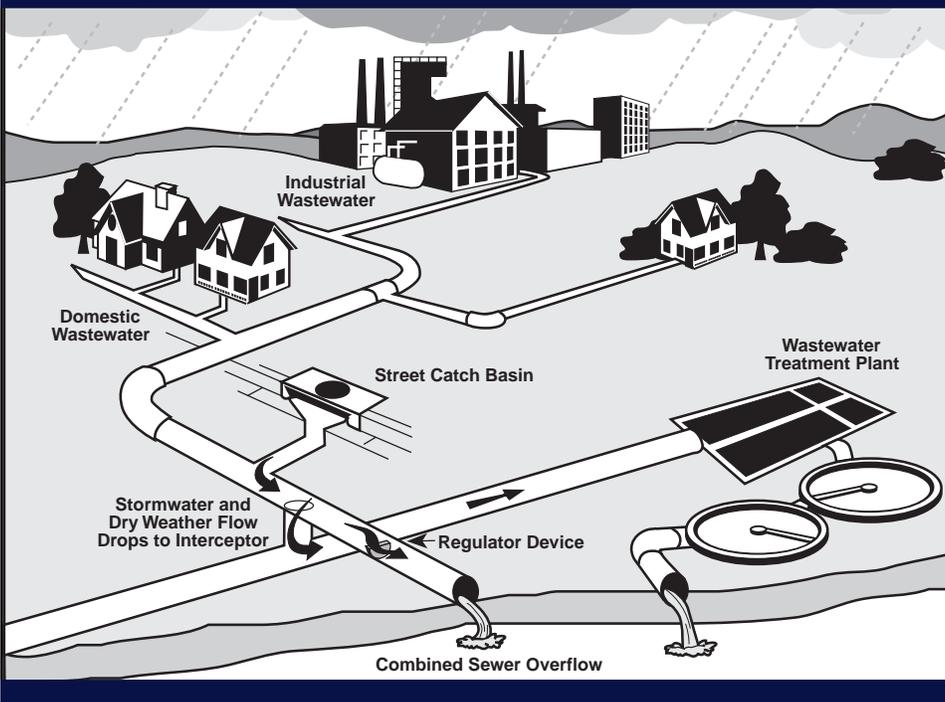
During dry weather, these combined systems often do not pose a problem and can effectively channel domestic and industrial wastes to the treatment plant. CSOs that do occur during dry weather discharge undiluted, untreated wastewater directly into streams and rivers and indicate maintenance problems or other serious deficiencies in the wastewater treatment system. Dry weather CSOs are prohibited and must be eliminated.

When it rains, it pours

CSOs are much more likely to be a problem during wet weather, when the addition of rainwater runoff or melting snow is enough to overload many combined sewer systems, causing untreated wastewater to overflow into the nearest body of water.

These overflows occur either because the sewers do not have the capacity to carry the combined rainwater and wastewater, or because the treatment plant itself is not large enough to hold and treat all of the combined flow.

Some communities experience CSO conditions as many as 80 times per year. These overflows discharge approximately 1,200 billion gallons of combined raw sewage and stormwater into U.S. streams, lakes, rivers, and estuaries each year, which has a significant impact on the environment and can pose risks to public health. 💧



LETTER FROM THE EDITOR

The new *Pipeline*— new look, new focus

Regular subscribers to *Pipeline* will notice a big change in the layout of the newsletter. Betsy Noullet, our National Small Flows Clearinghouse (NSFC) graphic designer, worked hard to develop a new, more inviting look for the newsletter. But what may not be immediately obvious is that the changes to *Pipeline* are not only skin deep. In response to feedback we received from our readers,



Cathleen Falvey, editor, and Betsy Noullet, graphic designer

Pipeline has a new main focus—to present and explain small community wastewater issues to the public.

As we reported in the winter issue of *Pipeline*, most of the respondents to our recent reader survey were local government officials, who make up the audience *Pipeline* has sought to address. But what we learned from the survey responses, from calls to the NSFC technical assistance hotline, and from talking with our readers at conferences, is that our readers use *Pipeline* not only as a source of information for themselves, but also as a

resource to educate the public about wastewater issues.

Many of the local officials, county extension agents, and engineers who subscribe to *Pipeline* use the articles to distribute to town residents or clients with questions about specific wastewater issues or proposed treatment projects in their communities. For the majority of our readers, presenting and explaining these issues to the public is one of their main responsibilities, and *Pipeline* covers technical topics in such a way that makes them easy for everyone to understand.

Using this feedback as our inspiration, we decided to make some changes. *Pipeline* will still present and explain timely wastewater issues and technologies that affect small communities, and we will be working to present technical information in a format that continues to encourage *Pipeline*'s use as an educational tool. But to better accomplish this, each issue will have a specific focus or theme.

The theme of this issue is combined sewer overflows, or CSOs, and how CSOs and the new national CSO Control Policy affect small communities.

Another change readers may notice will be less editorial space given to political news items and issues not likely to be of interest to the general public. While important political issues will still be addressed, this change will allow for more room to report on alternative wastewater technologies and resources for small communities—what you have asked for.

We encourage you to continue distributing copies of *Pipeline* or the information included whenever useful. For example, articles can be used at town meetings or put in the local newspaper.

The last new change to report is the departure of Kevin Wilcox, *Pipeline*'s editor for the past two years. Kevin left the NSFC to return to graduate school. We wish him luck. Filling his shoes and living up to our new mission will be a challenge for me as *Pipeline*'s new editor, and I hope that we continue to receive feedback from readers about the changes we make and the topics you would like us to cover.

Cathleen Falvey
Editor

Why are CSO controls important?

While it used to be believed that overflows from sewers during wet weather would be diluted by high stream levels, a 1984 U.S. Environmental Protection Agency study found more than 40 toxic pollutants present in CSOs, including high levels of metals and toxic organics.

The main pollutants in CSOs are untreated human and industrial wastes, toxic materials like oil and pesticides, and debris washed from the street into the sewer system. These pollutants can cause a variety of diseases in humans, including dysentery and hepatitis, and can also damage aquatic life. People can be affected by drinking or swimming in the polluted water, or by eating the contaminated fish. In fact, CSOs have been a major cause of recreational beach closings, shellfish bed closings, and fish kills in some communities, which can significantly impact local economies.

The risks that CSOs can pose to the health and environment of small communities and the effect CSOs have on the overall water quality should make them an important concern for residents. Communities that have not yet assessed their CSO status will need to make it a priority in order to comply with the minimum controls. 💧

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Flexibility and cooperation are key ingredients of new CSO Control Policy

The most important aspect of the CSO Control Policy for small communities is its flexibility. Under the policy, communities are strongly encouraged to work with EPA regional officials and other state and local agencies when trying to address CSO issues. By cooperating with regulatory agencies, local officials can take full advantage of the benefits and flexibility of the new policy. Agency representatives are willing to help communities tailor individual plans for compliance, based on particular needs and circumstances. (See lists of important CSO contacts on pages 4 and 6.)

The purpose of the CSO Control Policy is to help communities meet the requirements of the Clean Water Act. It resulted from extensive negotiations by federal regulators, state and local governments, and representatives from business and environmental groups to provide guidelines for dealing with CSOs.

What are the policy requirements?

Until the control policy was released, little guidance was available for regulating and controlling CSOs, partly because of their site-specific nature, which makes them more complex than other point source pollution problems.

Under the policy, states have the guidance they need to incorporate specific CSO discharge criteria in National Pollutant Discharge Elimination System (NPDES) permits, which are required for all point source discharge sites. The new policy also helps guide the permitting authorities toward working effectively with communities and local officials to ensure that CSO controls are cost-effective and meet the objectives and requirements of the Clean Water Act.

CSO communities will need to complete the following steps to comply:

1. identify the discharge points and number of CSOs,
2. implement the CSO Control Policy's nine minimum controls,
3. develop a long-term CSO control plan in cooperation with EPA and state authorities, and
4. implement the long-term plan.

Again, because of the site-specific nature of CSOs, communities are encouraged to work with EPA regional staff, state agencies, and other local agencies to develop CSO control programs to meet their specific circumstances.

The nine minimum controls

All communities that experience CSOs are expected to immediately implement the nine minimum controls outlined in the CSO Control Policy, and to submit documentation of their implementation as soon as possible (see list of the nine minimum controls below). The goal is to implement the nine minimum controls by no later than January 1, 1997.

The long-term plan

Communities also are expected to immediately begin the development of a long-term CSO control plan. The unique problems faced by small communities are addressed in the CSO policy for developing a long-term strategy. The policy states that because certain elements of long-term CSO control plans may be difficult for smaller communities, the NPDES authority has the discretion to excuse communities with populations less than 75,000 from having to complete all of the formal steps outlined in the policy (a long-term

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WHERE ARE THE CSOs?

More than 42 million Americans are served by combined sewer systems located in about 1,100 communities. While more than three-quarters of the systems with CSOs are located in just 11 states (Connecticut, Maine, Michigan, New Jersey, New York, Pennsylvania, Ohio, Indiana, Illinois, Vermont, and West Virginia), CSOs also occur in some states in the Midwest and Northwest U.S.

Although most of the pollution from CSOs comes from large systems in the densely populated urban areas of the Northeast and Great Lakes regions, more than half of all combined sewer systems are in cities with fewer than 10,000 people. Therefore, small communities have more systems to be evaluated, monitored, and operated. 💧

According to the EPA CSO Control Policy, the nine minimum controls for CSOs are:

- 1 proper operation and regular maintenance programs for the sewer system and the CSOs;
- 2 maximum use of the collection system for storage;
- 3 review and modification of pre-treatment requirements to assure CSO impacts are minimized;
- 4 maximization of flow to the publicly-owned treatment works (POTW) for treatment;
- 5 prohibition of CSOs during dry weather;
- 6 control of solid and floatable materials in CSOs;
- 7 pollution prevention;
- 8 public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and
- 9 monitoring to effectively characterize CSO impacts and the efficacy of CSO controls. 💧

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CSO Control Guidance Documents

These eight guidance documents are still in the draft stage, but are currently being developed by EPA to help communities control CSOs and comply with the CSO Control Policy requirements:

- *Combined Sewer Overflow Guidance for Permit Writers* (EPA/832/B-95/008)
- *Combined Sewer Overflow Guidance for Monitoring and Modeling* (EPA/832/B-95/005)
- *Combined Sewer Overflow Guidance for Nine Minimum Control Measures* (EPA/832/B-95/003)
- *Combined Sewer Overflow Guidance for Long-Term Control Plan* (EPA/832/B-95/002)
- *Combined Sewer Overflow Guidance for Screening and Ranking* (EPA/832/B-95/004)
- *Combined Sewer Overflow Funding Options Guidance* (EPA/832/B-95/007)
- *Combined Sewer Overflow Guidance on Water Quality Standards and CSOs* (EPA/832/B-95/009)
- *Combined Sewer Overflow Guidance for Financial Capability* (EPA/832/B-95/006)

While these documents are not yet available, most will be published, one by one, by later this year. The guidance documents for the nine minimum control measures, screening and ranking, and permit writers are expected to be available by summer. When available, the documents can be ordered by calling the Center for Environmental Research Information (CERI) at (513) 569-7562, or the National Center for Environmental Publications and Information (NCEPI) at (513) 891-6561. Be sure to request each document by title and document number. 

control plan still would be required, but it would be a scaled-down version). Also, the policy provides flexibility to accommodate ongoing or completed CSO projects. For these reasons, it is in a small community's best interest to work with NPDES authorities when developing a CSO control plan.

The steps for developing the long-term plan include the following elements:

- characterizing, monitoring, and modeling of the combined sewer system, including evaluating rainfall data, the number, location, and frequency of overflows, and monitoring of pollution levels in the CSO discharges and receiving waters;
- developing a public participation process to involve the affected public in the decision-making process, including people living downstream from CSOs who also will be affected;
- giving special consideration to environmentally sensitive areas;
- evaluating alternative control technologies and options, and adopting either the "presumption" or "demonstration" approach for ensuring that water quality standards will be met (see explanation at right);
- providing a cost/performance analysis for each of these alternatives;
- developing an upgraded operation and maintenance program plan;
- developing a plan for maximizing treatment at the existing treatment plant;
- scheduling for implementation of the long-term plan, including plans for funding the controls; and
- developing a post-construction monitoring program to verify compliance with water quality standards and the effectiveness of the CSO controls.

The presumption and demonstration approaches

Communities, working with NPDES officials, can choose either of these approaches when developing their long-term plans. With the presumption approach, facilities designed to limit the frequency of CSOs to no more than four per year, or to eliminate or treat at least 85 percent of wet weather flow in the

combined sewer system, are presumed to be adequate to meet Clean Water Act standards. This approach requires that the CSOs that remain, after the implementation of the nine minimum controls, are disinfected (if appropriate) and cleared of heavy solids and floatables.

The demonstration approach requires a community to show the permitting authority that its CSO control program adequately meets water quality standards, provides the best pollution reduction reasonably possible, and can be cost-effectively adapted or retrofitted if water quality standards should change in the future.

By providing these two options for showing permitting authorities that a selected CSO control plan can meet water quality standards, the policy allows small communities more flexibility to find the most cost-effective solution to their problems.

How will the control requirements be enforced?

Certain control criteria outlined in the CSO policy have been incorporated into NPDES permits in most states, which makes them enforceable under NPDES regulations. While EPA intends to enforce against CSOs occurring during dry weather, the "spirit" of the policy indicates that EPA intends for officials to cooperate and maintain a working relationship with communities and state agencies for the entire period of time required to implement the control plans.

In addition, EPA is developing eight guidance documents to help communities understand the policy requirements and how to comply (see sidebar at left). 



Fixing the problem—CSO controls

Although CSO discharges are relatively easy sources of pollution to identify, their site-specific nature can make them difficult for communities to control. Some of the variables communities need to consider include the condition and type of sewer system, the amount of rainfall experienced per year, the type of pollutants discharged at each site, and the impact of the pollutants on the receiving waters. The situation is often even more complicated for small communities, which have a wider variety of circumstances to address.

Control technologies should be selected based on their ability to provide effective control at a reasonable cost; the solution will not be the same for every community. Again, communities should work with EPA, state agencies, other local agencies, and the public to formulate an effective control plan.

Control technologies

Technologies for controlling CSOs can range from simple improvements in operation and maintenance and pollution prevention techniques, such as improvements in street cleaning, to major capital expenditures, such as expanding a community's treatment facilities or installing separate sanitary sewer systems.

Some of the more common CSO control technologies include the following:

- **in-system controls/in-line storage**—these technologies optimize the use of existing storage in the collection system and maximize the capacity of the system to transport the combined flows to the treatment plant. Before deciding on one of these controls, communities need to collect and analyze detailed data on their combined sewer systems. Many of these controls can be implemented for relatively low costs.
- **near-surface, off-line storage/sedimentation**—this technology reduces the quantity and frequency of overflows by storing and/or treating all or a portion of the CSOs occurring during storm events. With this technology, the community constructs storage/sedimentation collection tanks to collect excess flows. The size of the tanks varies depending on local site considerations and cost restraints. These tanks

provide sedimentation treatment for the wastewater they store and for any flows passing through the facilities, reducing the pollutants in the wastewater that is discharged.

- **deep tunnel storage**—this technology provides storage and conveyance of storm flows in large underground tunnels. It is the most costly type of storage, but has certain advantages. For example, tunnels are often more effective for storing larger volumes, and may reduce flooding problems for some communities. The geological conditions in an area will influence a community's decision to use this technology.
- **coarse screening**—this technology helps to remove coarse solids and floatable materials before they reach the treatment plant. Because it can't remove nonsolid toxics, it is not usually considered as a stand-alone CSO control, but is used by many communities as part of their overall treatment system.
- **swirl/vortex technologies**—these technologies are also used to remove heavy solids and floatable materials by separating them from the rest of the flow by inducing a swirling motion within a vessel. They are located at individual overflow points to provide some level of treatment before direct discharge, and they can include additional storage chambers to allow for further treatment of the wastewater. The efficiency of these technologies depends on the characteristics of the CSOs to be treated.
- **disinfection**—this process inactivates or destroys microorganisms in overflows. Some of the more common applications include chlorine, ultraviolet radiation, and ozone. Disinfection is often a required part of CSO control, but is never the only control applied. Communities will need to know whether their CSO controls are required to include reductions of bacterial levels to protect the quality of the receiving waters.

There are a variety of alternative control technologies and strategies available.

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CSO CONTACTS

Under the CSO Control Policy, communities are strongly encouraged to work with EPA regional officials when trying to address CSO issues. The following is a list of CSO contacts by EPA region:

Region 1

Steve Silva
U.S. EPA Region 1
Mailcode WCC
JFK Federal Building
Boston, MA 02203
(617) 565-2489

Region 6

Brent Larsen
U.S. EPA Region 6
1445 Ross Ave.,
Suite 1200
Dallas, TX 75202-2733
(214) 665-7523

Region 2

Larry Gaugler
U.S. EPA Region 2
290 Broadway, Floor 24
New York, NY 10007
(212) 637-3859

Region 7

Ted Geppert
U.S. EPA Region 7
Mailcode 8WM-C
726 Minnesota Ave.
Kansas City, KS 66101
(913) 551-7444

Region 3

Elaine Harbold
U.S. EPA Region 3
Mailcode 3WM53
841 Chestnut Building
Philadelphia, PA 19107
(215) 597-0547

Region 8

Robert Shankland
U.S. EPA Region 8
999 18th St.
Suite 500
Denver, CO
80202-2466
(303) 293-1597

Region 4

Greg Beatty
U.S. EPA Region 4
345 Courtland St., NE
Atlanta, GA 30365
(404) 347-3555,
ext. 2952

Region 9

Doug Liden
U.S. EPA Region 9
Mailcode WD-134
75 Hawthorne St.
San Francisco,
CA 94105
(415) 744-1920

Region 5

Jim Novak and
Peter Swenson
U.S. EPA Region 5
77 West Jackson Blvd.
Chicago, IL 60604

J. Novak: (312) 886-0177
Mailcode WCC-15J

P. Swenson: (312) 886-0236
Mailcode WQP-16J

Region 10

William Chamberlain
U.S. EPA Region 10
Mailcode W-5-1
1200 Sixth Ave.
Seattle, WA 98101
(206) 553-8515





OTHER IMPORTANT CSO CONTACTS

Water Environment Research Foundation (WERF)

As the research arm of the Water Environment Federation, WERF is now in the process of developing a series of wet weather research initiatives through its targeted collaborative research (TCR) program. WERF is working to provide communities with peer-reviewed research results for controlling the impacts associated with wet weather events, and is presently looking for participants to serve on a program steering committee for assessing wet weather control and treatment technologies. **For more information, contact:** Michael Kakuska, research program manager, 601 Wythe St., Alexandria, VA 22314-1994 Phone: (703) 684-2470, Fax: (703) 684-2492

Ohio River Valley Water Sanitation Commission (ORSANCO)

One of this organization's goals is to study and coordinate efforts of communities along the Ohio River to control CSOs. The study includes the compilation of CSO-related information and the development of methodologies to assess their impacts. **For more information about ORSANCO and the study, contact:** Peter Tennant, technical programs manager, 5735 Kellogg Ave., Cincinnati, OH 45228-1112, Phone: (513) 231-7719, Fax: (513) 231-7761

The CSO Partnership

The CSO Partnership is dedicated to assisting CSO cities and towns, particularly medium-sized and small communities, in dealing with CSO control in an environmentally protective and fiscally responsible manner. **For more information, contact:** Mark W. Poland, Executive Secretary, P.O. Box 26505, Richmond, VA 23261, Phone: (804) 780-5293, Fax: (804) 649-9661

Two small communities work to solve their CSO problems

Springfield, Vermont

Incorporated in 1761, Springfield, Vermont, is also known as the precision tool capital of the world. It has a population of approximately 10,000, and has been labeled one of the hilliest communities in the country. "The Black River runs right through the valley, and to get anywhere in town, you must either go up or down a hill," said Jeffery Slade, Springfield's director of public works.

According to Slade, Springfield's original sewer system dates back to the mid to late 1800s, when, as was common throughout the country, both the sanitary and stormwater flows were combined and discharged directly into the river.

This practice continued through the mid 1900s, when it became apparent that discharging raw sewage into streams and rivers was harming the environment. Springfield's wastewater treatment plant was constructed in 1959 and was one of the first in the state.

"When the collection system was constructed to tie all of the discharge lines to the new treatment facility, the river discharge lines were left in place for overflows during rain events or spring snow melt," Slade said. "To this day, no major changes have been made to the collection system."

Springfield started to examine its CSO situation in 1988, and conducted a study to assess the town's options. Aware of the CSO policy requirements, the public has been involved in the process through board of selectmen meetings, public hearings, and the media.

The town is currently working with Vermont's Agency of Natural Resources (ANR), the state CSO permitting authority, which approved Springfield's plan for CSO abatement on December 29, 1994.

"We have found them to be very helpful," Slade said.

Springfield plans to use a practical, cost-effective combination of different strategies for controlling CSOs, including adding storage tanks in some parts of town, separating some sewers, and improving treatment. This approach is in keeping with EPA's emphasis on flexibility and cost-effective solutions.

"We have scheduled a bond vote to cover the town's share of the cost in May of this year," added Slade. "If the bond vote passes, the first phase of the five-phase plan will commence this summer."

The latest cost estimate for Springfield's CSO abatement program is \$5,743,900. The funding is broken down as follows:

25% state/federal grants	\$1,435,975
50% no-interest state loans	\$2,871,950
25% local money	\$1,435,975

The Springfield Board of Selectmen has discussed how the 25 percent local money and the money to pay back the 50 percent no-interest loan will be raised. A final decision has not yet been made, but the town has discussed a tax rate increase.

Village of Montpelier, Ohio

Montpelier is a small community of approximately 4,300 in northwest Ohio. Originally a predominantly agricultural community, and once home to a 10-track railroad repair and switching yard, the current economy is based on light manufacturing, retail, construction, and agriculture. The town is aware of the national CSO Control Policy and is working with National Pollutant Discharge Elimination System (NPDES) authorities to comply.

According to Dan Clum, village deputy manager, sometime in the early part of the century the town rerouted a creek, known

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Fixing the problem—CSO controls

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More information about these technologies is available in a free CSO Control Manual published by EPA and available from the NSFC. More information about the manual

is included on page 8. For help with CSOs, local officials can contact their regional EPA representatives directly (see lists of CSO contacts on pages 5 and 6), or contact the National Small Flows Clearinghouse at (800) 624-8301.

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as Cranberry Run, to flow through town and empty into the St. Joseph River. The creek was used as the main sewer for most of the village until the first wastewater treatment plant was built in 1957, when dry weather flows were diverted to the treatment plant via a pumping station. Until the late 1960s or early 1970s, however, nearly every sewer in town was still considered a combined sewer.

As the village grew and new interceptor sewers were constructed, overflow points were added to the system. At one time in the early 1970s, the village had seven CSOs. The two largest, #54, which served the Cranberry Run drainage area, and #36 still remain, but many of the smaller overflows have been eliminated.

"We currently have a total of four CSOs remaining," said Clum. "We are, under the conditions of our new NPDES permit, effective March 1, 1995, beginning to conduct another study of the system and implement CSO management programs."

Clum added that the first step in Montpelier's compliance program will be to conduct studies to look at the CSO effects on the receiving stream. A study of this data has not been done since the late 1970s, and the results will help the town make decisions toward its next steps.

Montpelier's new permit more or less outlines its CSO control program for the next few years, as the town will be studying the overflow water quality, stress testing the plant, adopting the minimum controls, and addressing its customers' stormwater problems.

"The biggest problem with CSOs for the customers, and the most often discussed, is the overloading of sewers during storm events with many basements becoming stormwater retention ponds," Clum said.

Surface flooding in the Cranberry Run areas also presented problems, especially during one heavy spring thaw as overflow from the saturated farmland flowed into town. In 1991, Montpelier diverted the Cranberry Run flow away from town, farther north to the St. Joseph River. This lessened flows to the plant by an average of 200,000 gallons per day, solved a lot of flooding problems within the village, and significantly decreased the CSO flows from the #54 regulator. "It has to be understood that in many cases the CSO issue is in fact a stormwater and flooding issue within the

village, and, in many cases, the action to prevent flooding or improve drainage lessened the CSO impact on the stream both in frequency and quantity."

According to Clum, finances will undoubtedly be the limiting factor in all of the village's future infrastructure improvements. In the 1970s, Paul Hutchison, Montpelier's first village administrator, is quoted as saying, "It would be cheaper to move the town than to separate the sewers!"

"But," said Clum, "it is our understanding that EPA recognizes the fact that separation in many cases is not cost-effective. And we, as users of the river, and in cooperation with our users downstream, understand that we have to do all we can to prevent, minimize, and manage the effects of CSOs." 💧



SPECIAL OFFERS FROM NSFC CELEBRATE EARTH DAY 1995

- **Special Earth Day Discount**
The NSFC is offering a 50 percent discount for all product orders faxed or phoned on Friday, April 21, 1995, the day before Earth Day. Shipping and handling charges still apply. Call NSFC at (800) 624-8301, or fax (304) 293-3161.

- **Free Newsletters for Earth Day**
The NSFC has the following back issues of *Pipeline* available for free:

June 1992	September 1992
December 1992	March 1993
September 1993	Summer 1994
Winter 1994	

Includes free shipping and handling. For more information or to order, call NSFC at (800) 624-8301, or fax (304) 293-3161.



How much will CSO controls cost?

The EPA estimates that the total capital cost of compliance with the new policy will be more than \$41 billion for the whole country. Factors such as the severity and frequency of CSOs, the condition of the combined sewer systems, plus the local water quality standards will affect the cost for each community. Small communities are anticipated to need relatively more expensive upgrades, and are expected to be in less of a position to raise the necessary funds.

Funding for CSO controls generally will be available through the State Revolving Loan Fund (SRF) and Community Development Block Grant (CDBG) programs and can be raised in a variety of ways, including local tax and rate increases. The EPA and state agencies will work with small communities to find the most economically achievable solutions.

For more information about funding options for small communities, be sure to request the EPA document, *Combined Sewer Overflow Funding Options Guidance* (refer to list of guidance documents on page 4). 💧

EPA sponsors technology workshop

The U.S. Environmental Protection Agency is sponsoring the fourth National Wastewater Treatment Technology Transfer Workshop at the Marriott Downtown Hotel in Kansas City, Missouri, May 17-19, 1995. The workshop is intended for consulting engineers, state and city personnel, and others associated with the municipal wastewater treatment field.

The workshop will consist of technical presentations by national experts on key engineering technologies, including some for small communities.

There is a \$20 workshop fee.

For further information or to register, contact Dr. Rao Surampalli, P.E., U.S. EPA, 726 Minnesota Avenue, Kansas City, KS 66101. Phone: (913) 551-7453, or Fax: (913) 551-7765 💧

ADDITIONAL INFORMATION

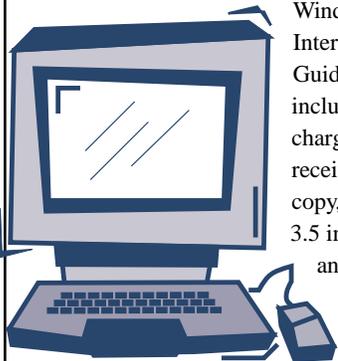
- **EPA CSO Control Policy —**

For a free copy of the CSO Control Policy, please contact the EPA Office of Water Resource Center in Washington, DC, at (202) 260-7786. Or write to the Office of Water Resource Center, U.S. EPA, Mailcode RC-4100, Washington, DC 20460. Request EPA document 830-Z-94001, April 1994.

- **Software to monitor and model CSOs available in August 1995 —**

An updated version of an EPA software program, *Storm Water Management Model*, or *SWMM*, which will be available in August 1995, can be used to monitor and model combined sewer systems nationwide. The software is a complex urban runoff model and can be used for municipal planning regarding CSO design and predicting CSO loadings to receiving waters. Three 3.5 inch disks containing SWMM (OSU) Version 4.3, its Windows interface, with example data sets, and the SWMM

Windows Interface User's Guide will be included free of charge. To receive your copy, send three, 3.5 inch disks and a letter of request to Ibrahimia



Bryan Goodwin or King Boynton at U.S. EPA, Office of Science and Technology, Mailcode 4305, 401 M Street SW, Washington, DC 20460. Or call King Boynton at (202) 260-7013.

- **Combined Sewer Overflow Control Manual —**

This EPA manual will help CSO communities select and design CSO control measures for reducing pollutant discharges. It will be useful for municipal public works staff, design engineers, and regulatory agency staff tasked with the development and review of facility plans and long-term CSO control programs. It provides detailed information on CSO control technologies and it includes information on the site-specific nature of CSOs, the quality characteristics of combined flows, and how these variables impact the design and selection of CSO controls. The manual is available free from National Small Flows Clearinghouse, (800) 624-8301. Please allow \$2.00 for shipping and handling. Request NSFC product #WWBKDM75.

- **NSFC Bibliographic Database —**

The National Small Flows Clearinghouse (NSFC) is in the process of updating its bibliographic database with a number of articles and case studies on CSOs. For information about these articles, call NSFC technical assistance at (800) 624-8301.

- **NSFC offers CSO brochure —**

A free brochure titled *Combined Sewer*

Overflows in Your Community, published by the EPA, defines CSOs and their impact and briefly describes control measures and costs. The brochure is written for the general public. To order, call the National Small Flows Clearinghouse at (800) 624-8301, and request product #WWBRPE22.

- **WEF offers CSO publication —**

The Water Environment Federation (WEF) is offering a book containing information to help communities with CSOs. *Combined Sewer Overflow Pollution Abatement MOP FD-17* provides the essential tools needed to analyze the variables to determine the best strategies for reducing or eliminating CSO pollution. The manual costs \$30 for WEF members and \$40 for nonmembers. The order number is MFD17GA. To order call WEF at (800) 666-0206.



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Jill Ross - Publications Supervisor
Murty Susarla - CSO Technical Advisor
Cathleen Falvey - Editor
Betsy Noullet - Graphic Designer

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For Wastewater Information, Call the NSFC at 1-800-624-8301.



National Small Flows Clearinghouse
West Virginia University
P.O. Box 6064
Morgantown, WV 26506-6064

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