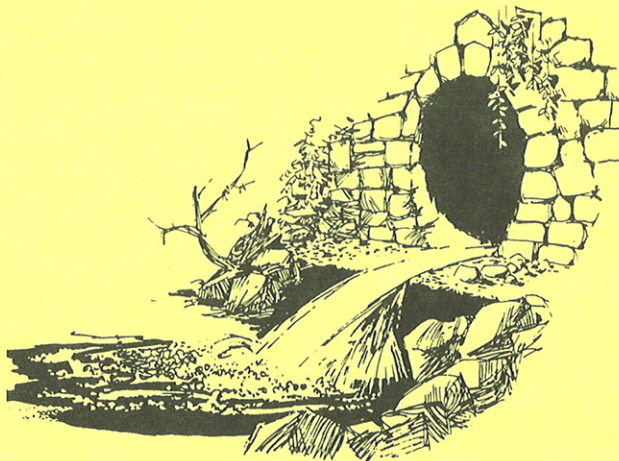


**DELCORA
CSO
LONG TERM
CONTROL PLAN
2011**

**PLAN
UPDATE**



Community Education Series

**What is a Combined
Sewer Overflow
(CSO)?**

Some communities collect both rainwater runoff and sanitary wastewater in the same sewer. These are called "Combined Sewers". Sometimes when it rains, sewers do not have enough capacity to carry all the rainwater and wastewater and the treatment plant is not large enough to treat the total combined flow. In these



situations, the combined wastewater overflows untreated into the nearest body of water, streams or rivers, creating a combined sewer overflow.

In the case of storm water from the street, whatever litter, also known as floatables, that is in the street washes into the CSO and either to the treatment plant or directly into our community's streams, rivers, and water bodies. Inlets help to keep trash and other floatables out of the sewer system.

PROGRAM ACTIVITIES

Under the current CSO Long Term Control Plant (LTCP), DELCORA provides \$75,000.00 per year to the City of Chester to replace storm-water inlets. The DELCORA program will act in concert with the City's efforts to replace the inlets with a PennDOT approved type M inlet. Inlets are the openings adjacent to the roadway curb that direct stormwater runoff to the sewer system. The type M inlet is installed in the roadway. It has steel grates that prevent trash from entering the sewer.

Inlets are replaced to reduce the amount of litter and other floatables that enter the sewer system. These pollutants clog the system, causing sewer backups, and increase treatment costs by adding non-biodegradable material to the waste stream. Replacement helps keep our streams and waterways cleaner.

DELCORA also replaces the regulators in the sewer system to maximize flow to the treatment plant. Regulators direct the wastewater to the treatment plants. To date DELCORA has replaced 15 of 25 regulators.

The US Environmental Protection Agency (EPA) ordered DELCORA to update its LTCP. The new plan was submitted February 1, 2011. EPA Approval is pending. New technologies were investigated and cost estimates were prepared. It is likely that sewer rates will increase as a result.





DELCORA'S LONG TERM CONTROL PLAN

- Identifies all Combined Sewer Overflow (CSO) Locations
- Prohibits all dry weather discharges
- Requires proper operation and maintenance of all CSO flow control regulators
- Requires an Inlet Replacement Program
- Maximizes flow treated at the Plant
- Schedules replacement of all CSO regulators over a 20 year period
- Outlines a detailed monitoring and up-keep schedule of all CSO regulators
- Develops implementation for a sewer cleaning program targeting segments with the greatest CSO impact
- Requires a Public Education program. A meeting was held November 17, 2011.

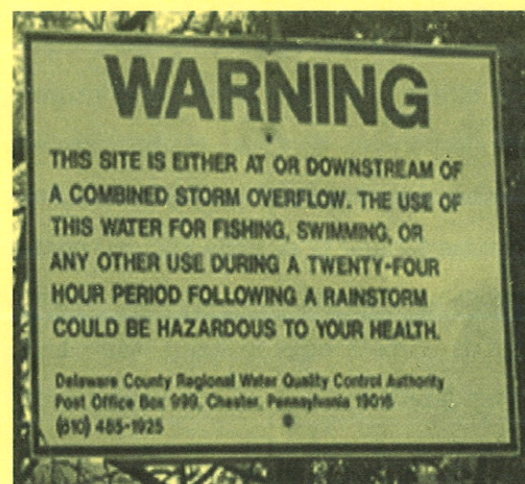
What are the benefits of the CSO Long Term Control Plan?

- ◆ A cleaner & healthier environment to live and work in.
- ◆ A planned program of level expenditures, helping to keep sewer rates stable. However, the USEPA's required update of the Plan may require more upgrades of the sewer system. It is likely that rates will increase.
- ◆ Citizen response, participation and input.
- ◆ A better citizen understanding of why the program is needed.
- ◆ Regular, monitored cleaning and repair of our sewer system.
- ◆ Improved stewardship of our water resources.

LEARN TO IDENTIFY CSO OUTFALLS

There are 28 CSO outfalls in the Chester area; thirteen drain to the Delaware River, ten to the Chester Creek and five to the Ridley Creek.

All outfalls are marked by a sign.



How you can help.

- Disconnect your downspouts from your sewer lateral.
- Don't litter! Keep trash out of sewer inlets.
- Keep grease, fats, and oils out of your drains.
- Use environment friendly cleaning agents and cleansers.
- Properly dispose of hazardous wastes.
- Dispose of prescription drugs and personal care products properly.
- Conserve your water usage.
- Learn more about CSO's.
- Remember—Clean water is everybody's business.

Want to learn more?

DELCORA welcomes and encourages your input. Additionally, tours of the treatment plant can be arranged for civic, school or church groups.

If you would like to review a complete copy of the 2011 proposed DELCORA CSO Long Term Control Plan 2011, please call or fill out the form below and mail to "Administration/CSO Information". We will gladly schedule a time during daily business hours when you can visit our Administrative offices and review the plan.

NAME_____

ADDRESS_____

TELEPHONE_____

◆ I'D LIKE TO READ THE DELCORA CSO LONG TERM CONTROL PLAN.

MAIL TO:
DELCORA
ADMINISTRATION/CSO INFO.
100 EAST FIFTH STREET
PO BOX 999
CHESTER, PA 19016-0999

Phone: 610-876-5523
Fax: 610-876-2728
Email: CSOinfo@delcora.org
www.delcora.org

Special thanks to the City of Lynchburg, Virginia, and Blair Communications for help with this brochure.

This brochure was prepared under Cooperative Agreement Assistance #CX824505 between the Water Environment Federation (WEF) and the U.S. Environmental Protection Agency. For more information about sewer backups, overflows, and downspout disconnection, contact your local sewer system authority, or

Water Environment Federation
601 Wythe Street
Alexandria, VA 22314-1994
Phone: 703/684-2400
Fax: 703/684-2492
Web site: <http://www.wef.org>

For additional copies of this brochure, contact WEF at 1-800-666-0206 or <http://www.wef.org>.



**Delaware County Regional Water Quality
Control Authority**
100 East Fifth Street
Chester, PA 19013
610-876-5523
www.delcora.org



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How to Safeguard Your Home and the Environment by Disconnecting Downspouts

Stop Sewer Backups

Connected downspouts — what are they?



Many older homes, especially in cities, have gutters connected directly to the sanitary sewer. This means that rain from the roof runs directly into the sewer. Not all downspouts that look like this picture are connected to the sanitary sewer; some may empty into a storm drain. Call your local sewer system authority or public works department to find

out if your connected downspout empties into the sanitary sewer.

Why is this a problem?

The problem is too much water. Sanitary sewer systems can only handle a certain amount of water. During a rainstorm, water gets into the sewer from connected downspouts and other sources. When there is too much water for the system, the excess has to go somewhere, and that somewhere is often somebody's basement, a manhole, or a nearby creek or river. Municipalities have a legal requirement to stop water from overflowing out of sewers. Even if the water does not overflow, it's still a problem, because the wastewater treatment plant has to treat the extra water.



Why should you care?

Sewage backups and overflows are messy, costly, and a threat to health and the environment.

Cleaning house. When there is a sewer backup into a house, the homeowner may have to pay the cost



to clean up, repair damage, and replace ruined carpets and furniture. Basic homeowner's insurance often does not cover

this damage (unless the policy has an added clause or "rider").

Health. Raw sewage contains microorganisms that can cause diseases such as hepatitis, giardiasis, and gastroenteritis.

Long term environmental damage.

Raw sewage in streams and lakes can cause illnesses in fish, kill aquatic life, and make the water unusable for swimming, fishing, and as a drinking water source.



Higher costs mean higher utility rates. The utility ends up treating the extra water, and may even have to increase the size of the treatment plant. The utility may also have to pay fines when raw sewage is released to the environment. Increased utility costs are passed along to consumers as rate increases.

What can you do?

You should check to see whether disconnecting your home's downspouts can help solve the problem. Disconnection is usually a simple, relatively inexpensive process. The steps are shown on the inside of this brochure. Your local sewer system authority or public works department should be able to tell whether your downspouts are connected to the sanitary sewer and, if so, whether disconnection makes sense.

You can also let other people know why downspouts need to be disconnected and how sewer overflows cost the entire community.

How to Disconnect Your Downspout

Check Before You Start

The steps outlined below are general guidelines for disconnecting downspouts and do not apply in all situations. Contact your local sewer system authority or public works department to see what specific guidance is available and to obtain information on local conditions, materials, and regulations. You may want, or be required, to hire a professional contractor or plumber to do the work. In some areas, an inspection of the disconnection is also required. Be aware, too, that some municipalities discourage or prohibit downspout disconnection due to local zoning or concerns about runoff.

Use of the information provided in this brochure is voluntary. The organizations that prepared this brochure assume no responsibility for consequences arising from its use and specifically disclaim all liability for damages of any kind arising out of or resulting from the use of the information in this brochure.

1. Tools and materials you are likely to need:

safety glasses	bucket (for concrete)
work gloves	spare gutter pipe
hammer	splash block
chisel	gutter "elbows" or
hacksaw	other discharge devices
measuring tape	flexible/corrugated pipe
screw driver	concrete mix (or other permanent,
trowel or other	weatherproof sealant)
digging tools	plastic boot cap

2. Safety

Make sure that you have the safety equipment that you need, including work gloves and safety glasses. Many disconnections involve hammering and sawing which can be hazardous to your eyes. Aluminum gutters can be extremely sharp after being cut, so protect your hands with work gloves.

3. Call before digging

If you bury part of your discharge pipe, remember that even digging a shallow trench can sever a utility line. To be safe, call your local utilities (most jurisdictions have a "call before you dig" hot line) to make sure you avoid digging near service lines.

Disconnection Steps

STEP 1 — Remove downspout from boot

Unless your gutter downspout can be easily lifted out of the boot, you'll need to cut it just a few inches above the boot—making sure that you've left enough room for the downspout "elbow" or other end-of-pipe device.



© Blair Communications



© Blair Communications

STEP 2 — Remove the boot (Optional)

You can leave the boot in place, or remove the boot for a more finished look. To remove the boot, cut it with a hacksaw, or hammer and chisel. Be sure to wear safety glasses, and remove sharp edges that remain on the pipe after cutting.

STEP 3 — Seal the boot

The boot must be permanently sealed to keep water from entering the sewer line. There are different ways to seal the pipe so before proceeding, check to find out what approach is recommended for your area. Some jurisdictions suggest the following method:

The pipe can be sealed with concrete or other material that makes a permanent, weatherproof seal. Before starting, check the pipe to make sure that you will not block any other junction (such as your



© Blair Communications

washing machine draining into the same pipe). Then push balled-up newspaper tightly three or four inches down into the boot. Make sure that the fit is snug, otherwise the concrete could actually block the sewer. Carefully pour the concrete or other material that gives a permanent weatherproof seal into the pipe, and smooth the top surface.

Other areas do not recommend using newspaper and suggest the use of friction or sewer plugs, which are often available from licensed contractors.

STEP 4 — Redirect rainwater with end-of-pipe device(s)

The last step is to redirect the rainwater away from the house. The exact approach depends on individual conditions. It is important that the rainwater discharges a safe distance from your foundation (three or four feet is usually enough), that the runoff is not a nuisance to your neighbors, or causes other problems, like discharging across a sidewalk so that ice forms in the winter.

Sometimes all that is needed is an "elbow" pipe to the bottom of the gutter downspout and a plastic or concrete splashblock. Other situations (such as sloping ground) may require a different solution. There are a number of devices available designed to channel the rainwater away from your home (ask a hardware store to recommend the best one for your needs).

Check with your local sewer system authority or public works department for other redirection options in your area.



© Blair Communications

Disconnection is usually a simple, relatively inexpensive process.

Special Situations

Steep Slopes

If the gutter is next to a steep slope, be careful that the discharge from the new downspout will not wash away soil on the hillside. There are two ways to avoid this:

attach a pipe long enough to drain the rainwater to a safe area, or install an attachment that controls how fast water comes out of the gutter. Always make sure that you are not draining water onto a neighbor's property and that runoff from your downspouts does not cause erosion or flooding of your neighbor's yard. Do not discharge stormwater too close to your property line.



© Blair Communications

Extended Boot

Some older homes have boots that extend several feet above the ground. You can leave the boot in place and permanently seal the top of the pipe (step 3) or you can remove the tall boot. If you remove the boot, you will usually need to install a new section of gutter pipe and then an end-of-pipe device (step 4).



© Blair Communications

Inadequate Drainage

Some gutters may be located on very flat ground with no place for the water to drain. One solution is to pipe the water safely away from the house with a pipe attached to the downspout's "elbow." Another option is to use a device that will disperse the water enough so that it doesn't form a puddle. Make sure that it is draining away from your foundation.

- ✓ **Look for and check your sewer cleanout.** The cleanout usually is a small pipe, about 4 inches in diameter, outside your house or business that is used to access the service lateral for cleaning the sewer line. You can find it near the house, where the service lateral comes out, and/or near the street, where the service lateral connects to the main sewer line. Make sure the cap to the cleanout pipe is on and has not been damaged by a lawn mower or something else. Replace missing caps; otherwise, rain can get into the sewer line, causing it to overflow.
- ✓ **Avoid pouring grease down your sink.** When the grease cools in the sewer line, it can form clogs and blockages, which then can cause the sewer to overflow or back up into buildings. The grease also can contribute to restricted flow in your home plumbing and service laterals, resulting in costly repairs.
- ✓ **Avoid planting trees and shrubs above or near the service lateral** that runs from your building to the street. Roots can enter and clog sewers, causing them to back up and overflow.
- ✓ **Learn about your local sewer system.** Contact your local sewer authority or department of public works, and ask them to describe how the system works. Ask for the general location of the main sewer lines and treatment plant(s) and what type of monitoring is being conducted to detect SSOs.
- ✓ **Support local programs that aim to improve the way your sanitary sewer system is maintained and operated.** Proper operation and maintenance of the sanitary sewer system are key to preventing the damage caused by SSOs and prolong the life of the sewer system, saving taxpayer dollars.

This brochure is provided by Citizens Environmental Research Institute and funded by the U.S. Environmental Protection Agency, Cooperative Agreement Assistance I.D. No. CX824853-01. For more information about SSO's contact:

Citizens Environmental Research Institute
225 Main Street, Suite 2
Farmingdale, NY 11735
Web site: <http://www.ceriworld.org>
516-390-7150 Fax: 610-516-390-7160

DELCORA
100 East Fifth Street, P.O. Box 999
Chester, PA 19016-5523
Web site: <http://www.DELCORA.org>
610-876-5523 Fax: 610-876-2728



TOP SEVEN TERMS FOR BETTER UNDERSTANDING SSOs:

1. **INFILTRATION.** The water entering a sanitary sewer system through pipe joints, line breaks or cracks.

2. **INFLOW.** Rainwater from roofs, pavements, yards, manholes, and manhole covers that flows directly into a sanitary sewer.

3. **SERVICE LATERAL.** The sewer pipe that connects a house or other building to the main sewer line in the street.

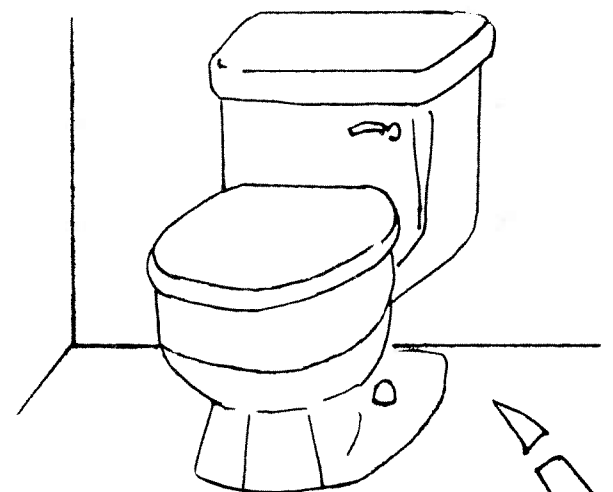
4. **SEWER CLEANOUT.** A small pipe with a cap, located near the place in a house or other building where the service lateral enters. The cleanout is used to free blockages that may form in the service lateral.

5. **PATHOGENS.** Organisms in raw sewage that cause diseases, including cholera, dysentery, hepatitis, and gastroenteritis.

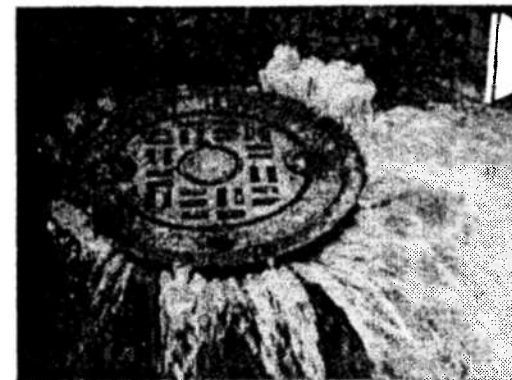
6. **MANHOLE & MANHOLE COVER.** A structure, usually found in a street, parking area, or sidewalk, that is used to provide access to the main underground sewer lines.

7. **COLLECTION SYSTEM.** The series of progressively larger pipes through which sewage is carried from homes and businesses to a treatment plant. The collection system includes service laterals and the main sewer lines.

SANITARY SEWER OVERFLOWS



*What are they?
Why are they a problem?
What can we do about them?*



A Citizens Guide

What is a Separate Sanitary Sewer and what is its purpose?

A *Separate Sanitary Sewer* collects and carries household and industrial sewage from individual buildings such as homes and commercial businesses through a series of progressively larger sewer pipes called the *collection system*. A *separate* sanitary sewer system is different from a *combined* system, which carries sewage and storm water runoff together. Separate sanitary sewer systems are not designed to carry rain water.

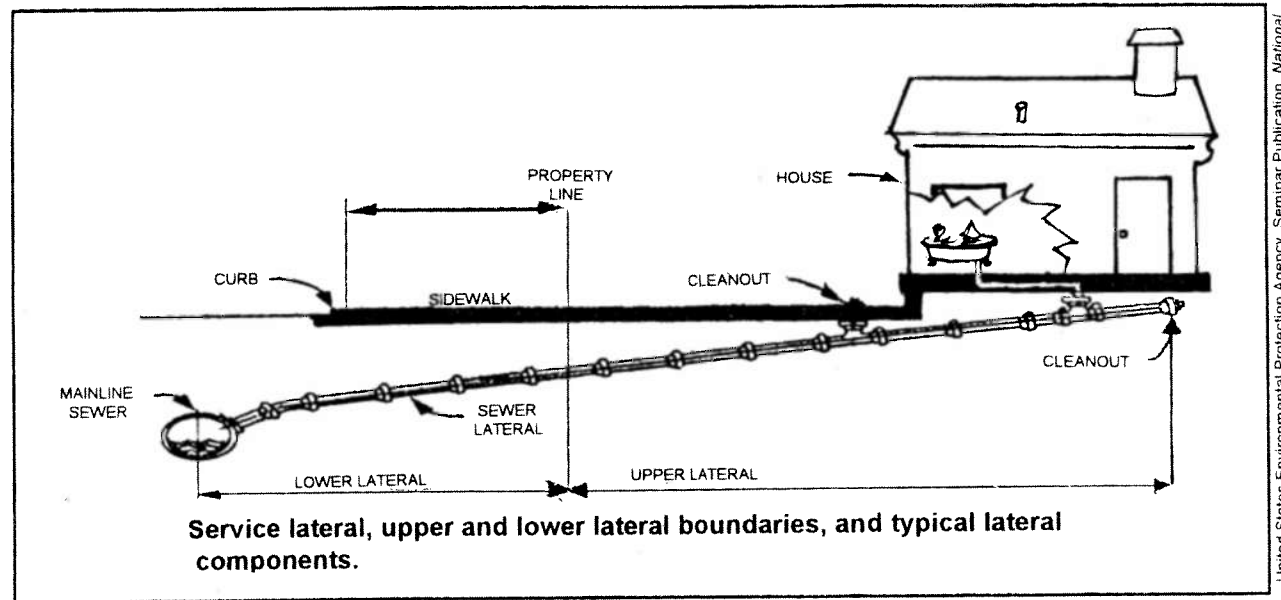
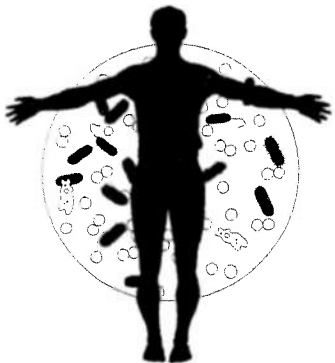
The *primary purpose* of a *separate sanitary sewer* is to *protect public health and the environment*. Raw sewage contains disease-causing organisms, which can make people sick if they become directly exposed. Raw sewage also can contain toxic chemicals and offensive odors. The sanitary sewer system carries the raw sewage away from homes and businesses to a treatment plant, where most of the harmful organisms are destroyed, odors are controlled, and the level of toxic chemicals is reduced.

Why are Sanitary Sewer Overflows a public health, environmental and economic problem?

Sanitary Sewer Overflows (SSOs) occur when raw or partially diluted sewage is discharged from a sewer collection system before it reaches the sewage treatment plant. SSOs threaten public health because they can cause people to be directly exposed to disease-causing

germs called *pathogens*, such as *E. coli* and *Cryptosporidium*, which are present in sewage. SSOs also can have negative impacts on the natural environment, causing poor water quality in lakes, rivers and streams, and polluting groundwater, which may be used for drinking water purposes. SSOs can cause economic damage as well, hurting water-dependent businesses,

such as commercial fishing and tourism. SSOs that result in basement flooding not only are unhealthy, but also are extremely unpleasant and costly to clean up. Where these chronically occur, property values may be reduced.



How might you be contributing to the problem of SSOs?

Many property owners are not aware that the maintenance of the sewer line connection between a home or a business (i.e. "upper lateral" in figure) and the main sewer line in the street usually is their responsibility. When poorly constructed or improperly maintained, these connections, called *service laterals*, frequently cause raw sewage to back up in basements.

The connection of roof-gutter downspouts or sump-pump drains directly to the service lateral adds excess water to the main sewer lines, and can contribute to raw sewage being discharged into the streets (SSO) and other public areas. Homes and small businesses, such as restaurants, can contribute to SSOs by disposing grease into the sewer line. When grease cools, it can form blockages, which then cause the sewer to overflow.

What should you do when you identify an SSO?

Make sure that people are kept away from the area of the overflow, typically a *manhole* cover. This is especially important for children and pets who may play

near the overflow area (e.g. street, public park, or local stream). Report the sewer overflow immediately to the local health department, the sewer operator, and the state environmental agency. Precautions then can be taken by them to reduce the risk of public exposure to raw sewage by monitoring the impact of the overflow and ensuring proper cleanup.

What can you do to prevent and reduce SSOs?

You can prevent and reduce SSOs if you:

- ✓ **Make sure the basement sump pump does not connect to your sewage drain pipes or to a sink or floor drain in your basement.** Such connections are illegal. The water from these pumps can overload the sewer, causing it to overflow raw sewage into a stream, the street, or someone else's basement.
- ✓ **Inspect the gutters** on your house or business to see if the downspout connects to a sewer line. Such connections are illegal in many communities. **If the gutters are connected to the sewer line, have them disconnected—the runoff water from the roof can contribute to an SSO.**

What Restaurant and Building Owners Need to Know About Grease Traps or Interceptors

Restaurants, large buildings, such as apartment complexes; and other commercial establishments may have grease traps or interceptors that keep grease out of the sewer system. For a grease trap or interceptor to work correctly, it must be properly

- 1** Designed (sized and manufactured to handle the amount that is expected),
- 2** Installed (level, vented, etc.), and
- 3** Maintained (cleaned and serviced on a frequent basis).

Solids should never be put into grease traps or interceptors. Routine, often daily, maintenance of grease traps and interceptors is needed to ensure that they properly reduce or prevent blockages.

Be cautious of chemicals and additives (including soaps and detergents) that claim to dissolve grease. Some of these additives simply pass grease down pipes where it can clog the sewer lines in another area.

This brochure was prepared under Cooperative Agreement Assistance #CX824505-01-0 between the Water Environment Federation (WEF) and the U.S. Environmental Protection Agency. For more information, contact your local sewer system authority or the

Water Environment Federation

601 Wythe Street
Alexandria, VA 22314-1004

Phone: 703/684-2400

Fax: 703/684-2492

Web site: <http://www.wef.org>

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Fat-Free Sewers

**How to Prevent
Fats, Oils, and
Greases from
Damaging Your
Home and
the Environment**

Fats, Oils, and Greases aren't just bad for your arteries and your waistline; they're bad for sewers, too.

Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. An increasingly common cause of overflows is sewer pipes blocked by grease. Grease gets into the sewer from household drains as well as from poorly maintained grease traps in restaurants and other businesses.

Where does the grease come from?

Most of us know grease as the byproduct of cooking. Grease is found in such things as:

- Meat fats
- Food scraps
- Lard
- Baking goods
- Cooking oil
- Sauces
- Shortening
- Dairy products
- Butter and margarine

Too often, grease is washed into the plumbing system, usually through the kitchen sink. Grease sticks to the insides of sewer pipes (both on your property and in the streets). Over time, the grease can build up and block the entire pipe.

Home garbage disposals do not keep grease out of the plumbing system. These units only shred solid material into smaller pieces and do not prevent grease from going down the drain.

Commercial additives, including detergents, that claim to dissolve grease may pass grease down the line and cause problems in other areas.



© James L. Graham, Jr., P.E.

The results can be:

- Raw sewage overflowing in your home or your neighbor's home;
- An expensive and unpleasant cleanup that often must be paid for by **you, the homeowner;**
- Raw sewage overflowing into parks, yards, and streets;
- Potential contact with disease-causing organisms; and
- An increase in operation and maintenance costs for local sewer departments, which causes higher sewer bills for customers.



© NYCDEP

What we can do to help

The easiest way to solve the grease problem and help prevent overflows of raw sewage is to keep this material out of the sewer system in the first place.

There are several ways to do this.

- 1) Never pour grease down sink drains or into toilets.
- 2) Scrape grease and food scraps from trays, plates, pots, pans, utensils, and grills and cooking surfaces into a can or the trash for disposal (or recycling where available).
- 3) Do not put grease down garbage disposals. Put baskets/strainers in sink drains to catch food scraps and other solids, and empty the drain baskets/strainers into the trash for disposal.
- 4) Speak with your friends and neighbors about the problem of grease in the sewer system and how to keep it out. Call your local sewer system authority if you have any questions.

2009

Drug-Free Drains

You can help protect our water
from pharmaceuticals and
personal care products!



601 Wythe Street
Alexandria, Virginia
22314-1994 USA
Tel. 1-800-666-0206
Fax. 1-703-684-2492
www.wef.org

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HS1802

6/2008



You can help protect our water from pharmaceuticals and personal care products!

Every day the average adult uses nine personal care products that contain 126 unique compounds that could end up in our water. In addition to traces of products like shampoo, toothpaste, sunscreen, and cosmetics, minute amounts of prescription and over-the-counter drugs also make their way into water. They should be limited or prevented from entering our environment.

Due to our increased use of these products and greater analytical sensitivity, very tiny amounts of compounds and drugs can be detected in conventional treatment plant outflow and end up in creeks, streams, and rivers. While there is no evidence these traces pose a risk to human health, scientists can sometimes find interference with aquatic organisms, and studies continue. Meanwhile, it's prudent to control what we put into water, and everyone's help is important.

In addition to following product recommendations for use and disposal and decreasing use when possible, you can help keep water clean by simply not flushing unused medication down the toilet! Controlling what goes down the drain is the easiest and most effective way to protect the environment, and you can start today!



Help keep our drains drug-free!

For more information on how to dispose of household products, please visit:

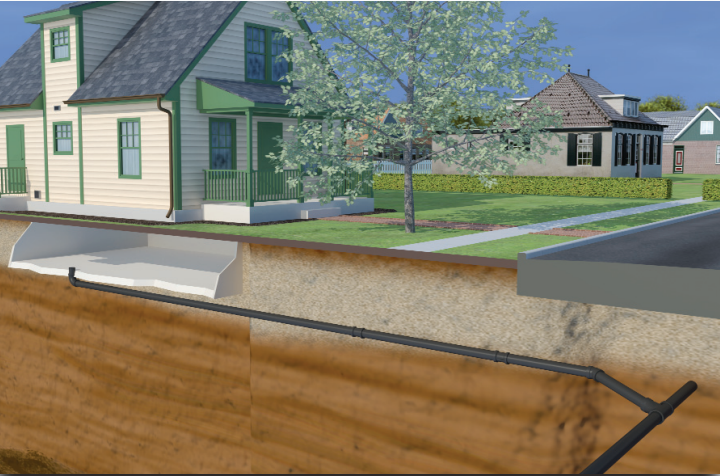
<http://www.wef.org/AboutWater/ForThePublic/FactSheets/FactSheetDocuments/HouseholdWaste.htm>

Visit the White House Office of National Drug Control Policy consumer guidance for the Proper Disposal of Prescription Drugs at

http://www.whitehousedrugpolicy.gov/drugfact/factsht/proper_disposal.html

EVERY YEAR DELAWARE COUNTY RESIDENTS PAY MILLIONS OF DOLLARS TO TREAT RAINWATER IN THE SANITARY SEWER SYSTEMS!

THAT'S TENS OF THOUSANDS OF DOLLARS WASTED EACH WEEK AND IT'S PAID FOR THROUGH YOUR SEWER FEES!



Your sewer lateral is the pipe from your house to the sewer main in your street. You own the sewer lateral under your yard.

Leaky sewer laterals, connected downspouts, and sump pumps allow rainwater to enter the sanitary sewer system.

Once that rainwater mixes with the sewage, it must be treated at the sewage treatment plant.

You are responsible for properly maintaining your sewer lateral to stop rainwater from entering the sanitary sewer system.

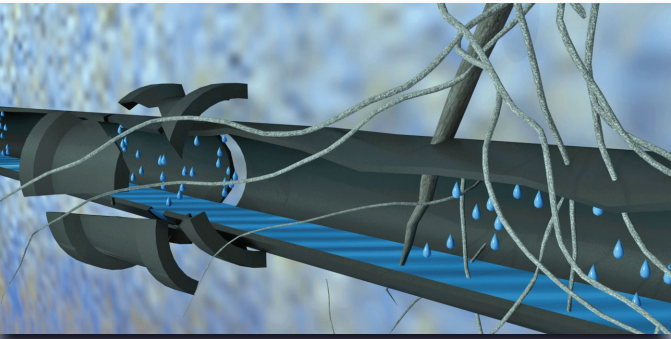
A well-maintained lateral protects public health and the environment and can help you save money.

SEWER LATERALS NEED TO BE INSPECTED PERIODICALLY. IF YOU HAVE NOT INSPECTED, REPAIRED, OR REPLACED YOUR LATERAL, IT COULD BE FAILING.

Failing laterals have old-age cracks, loose pipe joints, and tree roots, which let rainwater into the sewer system. Rainwater also enters the lateral through connected downspouts, basement sump pumps, foundation drains, and driveway drains.

WHEN RAINWATER IS ALLOWED INTO YOUR LATERAL, THE SEWER MAINS CAN OVERLOAD, LEADING TO A BACKUP OF RAW SEWAGE IN BASEMENTS.

Sewage is foul smelling, very difficult to clean up, and it can make your family very sick. It is a nightmare if sewage backs up into a house, damaging furniture, children's toys, irreplaceable family photos, or an entertainment/recreational area.



DELCORA
100 East Fifth Street
P.O. Box 999
Chester, PA 19016-0999

**STOP THROWING
MONEY DOWN THE
DRAIN!**



**How to Safeguard your Home,
Community, and Environment**

SEWAGE TREATMENT PLANTS ARE DESIGNED TO TREAT THE WASTEWATER FROM THE HOMES, BUSINESSES, AND INDUSTRIES IN YOUR COMMUNITY. BUT WHEN CONNECTED DOWNSPOUTS, SUMP PUMPS, AND LEAKY LATERALS LET RAINWATER INTO THE SYSTEM, THE EXTRA WATER CAN OVERLOAD THE SEWAGE TREATMENT FACILITY.



If extra water overwhelms the treatment facility, raw sewage may overflow manholes into the streets.

Raw sewage may even be discharged from the treatment facility directly into streams and rivers in your community.

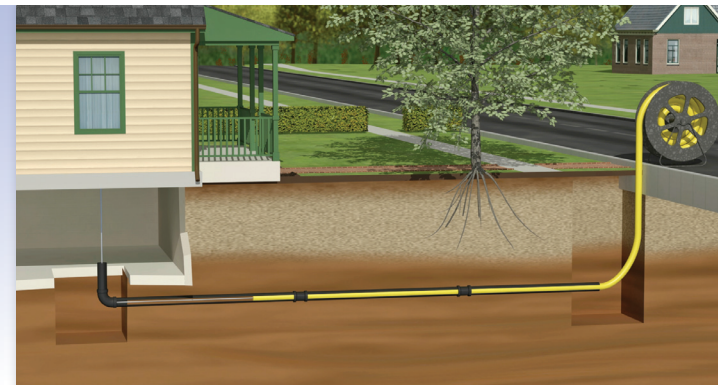
Raw sewage in public areas can make people very sick! And raw sewage in creeks and streams is an environmental disaster!

A QUALIFIED PLUMBER CAN FIND PROBLEMS IN YOUR SEWER LATERAL AND HELP FIND ANY IMPROPER CONNECTIONS USING ONE OF THE FOLLOWING TECHNIQUES:

- **Visual inspection** - A special camera is pushed through your lateral. The plumber can view the lateral's interior on a video screen and see any problems.
- **Dye testing** - A non-toxic dye is dripped into locations around your house, including downspouts and the soil above the lateral. Dye appearing in nearby manholes indicates problems.
- **Smoke testing** - A special, non-toxic smoke is pumped from the sewer main into your lateral and monitored to see where the smoke appears. Smoke escaping from the pipe up through the ground indicates a break in the pipe. Smoke escaping from the downspout indicates an improper connection.

IF A DOWNSPOUT OR SUMP PUMP IS CONNECTED TO YOUR LATERAL, YOU MUST HAVE IT DISCONNECTED.

IF YOUR LATERAL HAS CRACKS, LOOSE PIPE JOINTS, OR TREE ROOTS, YOU MUST HAVE IT REPAIRED OR REPLACED.



YOU CAN HAVE YOUR LATERAL REPAIRED IN SEVERAL WAYS:

- **Open cut excavation** is the traditional method of digging out your lateral for removal and replacement.
- **Slip lining** (pictured left) does not require extensive excavation. A winch pulls a flexible, liner pipe into place inside your existing pipe.



- **Pipe bursting** is like slip lining except a small, metal ram is pulled through your existing pipe. The ram breaks the pipe and pushes the pieces into the soil, pulling a new pipe into place behind it.

- **CIPP (cured-in-place pipe)** involves a felt tube, saturated with glue, being inflated inside your existing damaged pipe. Once the glue has set, the felt tube liner is left in place and the repair is complete.

AS LATERALS AGE WITHOUT BEING INSPECTED OR REPAIRED, THE COST GOES UP TO TREAT RAINWATER AND THE CHANCE INCREASES FOR A SEWAGE BACKUP IN YOUR BASEMENT.

Everyone knows how important it is to maintain your property and home. It is just as important to maintain your sewer lateral even though you cannot see it.

You must inspect your sewer lateral to ensure that you are not contributing to the problem.

The Delaware County Regional Water Quality Control Authority (DELCORA) exists to protect and improve the quality of life of our communities.



For more information, contact:

DELCORA
100 East Fifth Street
P.O. Box 999
Chester, PA 19016-0999

Or

Your Local Sewer Agency
You may find the address on your sewer bill or in the phonebook

OR WATCH A FREE VIDEO ON THE INTERNET: WWW.DELCORA.ORG

Function of Sump Pumps & Downspouts

Rainwater can enter the basement through many sources. The job of a sump pump is to divert the water from inside your basement to a location outside of the house. A sump pump is usually installed in a sump pit which stores the water. When this water reaches a certain level, it triggers the sump pump which pumps the water back outside, away from the house. A downspout's purpose is to direct water from the roof gutters away from the house.

The Problem of Inflow

Inflow is caused by improperly connected foundation (footing) drains, sump pumps, and downspouts. Instead of directing the clear rain water outside and away from the house, it directs the water into the sanitary sewer system. Inflow is a problem because it creates an extra water burden for the sanitary sewer system, and when this system is overloaded, sewage can back up into our streets, buildings, and your home. It also means that our utility bills are higher because we are collectively paying for the unnecessary treatment of clean water!

Rules and Regulations

Inflow is a problem for all of Delaware County's communities and sanitary sewer systems. All municipalities have adopted ordinances which make it illegal to have improper connections to the sanitary sewer. Fees and other enforcement measures can be used to achieve compliance. To avoid fines make sure your sump pumps and downspouts discharge properly.

Homeowners have an impact on preventing or causing the problem of inflow. Your community and neighbors are relying on you to take responsibility for making sure that your connections are not contributing to the problem.

For more information regarding what is being done about inflow in your community, contact your local municipality or sewer author-



**DELAWARE COUNTY REGIONAL
WATER QUALITY CONTROL
AUTHORITY
100 EAST FIFTH STREET
CHESTER, PA 19013
WWW.DELCORA.ORG
610-876-5523**

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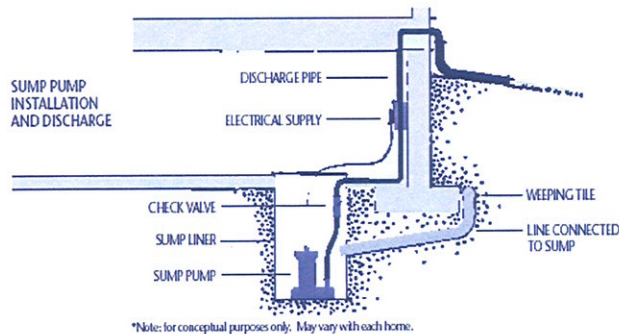
**Disconnecting &
Redirecting Your
Sump Pump &
Downspouts**



In wet weather it only takes a few improperly connected sump pumps to cause a sanitary sewer backup into basements, streets and waterways.

How Do I Know If My Sump Pump Is Improperly Connected?

Your sump pump is improperly connected to the sanitary sewer if it is connected to the drain or sink in your basement. Unless you are sure your basement drain is not connected to the sanitary sewer, your sump pump is probably improperly connected.



Proper sump pump discharge connections are to the outside of the house only!

How Do I Know If My Downspout Is Improperly Connected?

If your downspouts disappear into the ground rather than discharging into your yard, they may be connected to the sanitary sewer. While connections to the *storm* sewer are permitted, connections to the *sanitary* sewer must be disconnected and redirected.



Downspouts that look like this could be connected to the sanitary sewer.

Disconnecting Your Sump Pump

If your sump pump discharges to the sanitary system in any way, the discharge must be re-directed out of the sanitary sewer system. The change could be as simple as directing the discharge outside the house through a hose. If you aren't familiar with the work, contact a plumbing professional, your local municipality, or your sewer authority for more information.

Each household or business that redirects their stormwater out of the sanitary sewer helps solve the problem of sewage backing up into basements, streets, and waterways.

Disconnecting Your Downspout

Disconnecting your downspout from the sanitary sewer is easy to do yourself.

1. Cut the downspout, leaving enough space to insert the elbow.
2. Tightly cap the end of the pipe sticking out of the ground that leads to the sanitary sewer.
3. Attach an elbow to the end of the downspout and use an appropriate extension to direct the water away from your home.



Where Should I Direct the Flow of My Disconnected Sump Pump and Downspout?

Water should be discharged away from your house or it may seep back into your basement. It should flow to an area where it can seep into the ground or be stored for later use. Direct flow to:



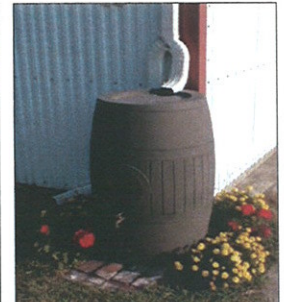
Rain garden



Lawn



Trees



Rain Barrel

Never direct stormwater into a sanitary sewer or onto a neighboring property!