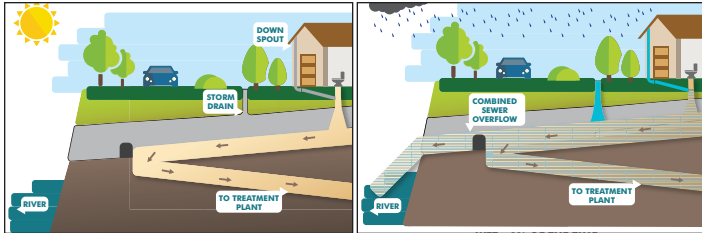


## What is a combined sewer?

A combined sewer is a one-pipe sewer designed to carry both stormwater and sanitary sewage. During dry weather, sanitary sewage alone is carried to a treatment facility. During wet weather, a mixture of stormwater and sanitary sewage is conveyed. With as little as 0.1" of rainfall, combined sewers can reach full capacity and begin to overflow to nearby bodies of water like the Papillion Creek or Missouri River.



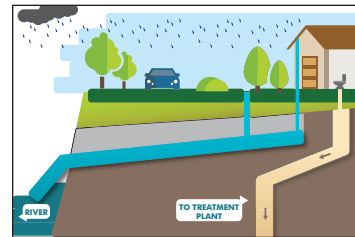
Dry – 99% of the time

Wet – 1% of the time

## Why are CSOs a concern?

CSOs contain raw sewage, which can be the source of disease-causing organisms. In addition, pollutants found in CSOs can adversely affect fish and other aquatic life and can create aesthetic problems – such as odors and sewage waste and debris.

## What is a separate sanitary sewer system?



A separate sanitary sewer system is a collection of pipes located under streets that are designed solely to transport sewage away from homes, businesses, and industry and carry it to the water resource recovery facility. This system

protects public health by treating human and industrial wastes to reduce pollutants so they can be safely discharged to a body of water. Cities that have these systems must also have a separate sewer system to handle stormwater.

## Why does Omaha have a combined sewer?



Omaha's combined sewer collection system dates back to the 1800s and was designed to move wastewater and stormwater out of increasingly urbanized areas and allow the

Missouri River to disperse and carry pollution away. By the 1960s, it became apparent dilution was not the total solution to pollution. A system of diversion structures, lift stations, and interceptor sewers was constructed to direct sewage to treatment plants before being discharged to the river.

Since the 1960s, Omaha's newer sewer systems include separate pipes for wastewater and stormwater, and many projects have begun to separate parts of existing combined sewers to prevent backups of sewage into basements. However, much of Omaha east of 72nd St. still utilizes the older combined sewer system.

## What is a combined sewer overflow (CSO)?

A combined sewer system collects rainwater, domestic sewage and industrial wastewater into one pipe. Sometimes the volume exceeds the capacity of the conveyance system or treatment plant, like during heavy rainfall events or snowmelt. To relieve pressure on the system and minimize backups into homes and businesses, excess wastewater flows are directed into local waterways. This is known as a combined sewer overflow, or CSO. When this occurs, untreated stormwater and wastewater, discharges directly to nearby streams, rivers, and other bodies of water.

## What is a separate storm sewer system?

A storm sewer system is a collection of inlets and pipes, located under streets, designed to transport rainwater and snowmelt away from streets, homes, and businesses and carry it to bodies of water like a stream or river. Storm sewers are usually much larger than sanitary sewer system pipes because peak stormwater flows from typical rain events greatly exceed sanitary flows. Water discharged through separate storm sewers generally receives no treatment and may contain pollutants.

## How does a CSO affect me and my water quality?

A CSO contains raw sewage and pollutants that includes human bacteria and viruses, chemicals, oils, animal wastes and other contaminants that all have the potential to cause health concerns. A CSO allows millions of gallons of untreated sewage and stormwater to enter our waterways in a typical year. Concerns include:

- The possibility of human contact with raw sewage that can carry disease-causing organisms
- Negative impacts to aquatic life
- Negative impacts on streams and park recreation.
- Offensive odors and unsanitary debris along river and stream banks

## **What should residents do during a CSO event?**

Residents should avoid water sports and activities like swimming and wading during rainfall and snowmelt conditions or when any discharge is observed from a CSO pipe.

## **What can I do to help improve water quality?**

Even when CSO Solutions are implemented, stormwater from our City will flow to streams and rivers during wet weather events. This stormwater picks up pollutants as it flows across the land, whether it comes from streets, open areas or rooftops. You can help to reduce pollution by:

- Dispose of household chemicals and used oil properly— never pour down storm sewers
- Pick up and properly dispose of pet waste
- Fix fluid leaks from vehicles
- Carefully apply lawn chemicals to minimize runoff to storm sewers
- Consider green infrastructure as a way to reduce runoff

## **What are the water quality standards for Nebraska? How are they defined?**

Nebraska water quality standards and definitions can be found in the Nebraska Department of Environmental Quality's Title 117 (<http://www.deq.state.ne.us/RuleAndR.nsf/pages/117-TOC>). The main concern in the metropolitan area is bacteria entering our waterways. Controlling and treating combined sewer overflows will allow the City to meet standards.

## **Why don't we focus on stormwater management? What is the City's position?**

As the Long Term Control Plan was developed, Omaha considered how CSO solutions could be integrated into a comprehensive watershed management plan for stormwater. In most cases green infrastructure serves as an enhancement to physical controls that form the backbone of the CSO control plan.

## **Do all users pay the same rates?**

Rates for sewer fees are based on customer classification. All customers of a given class (residential, commercial, industrial) pay at the same rate, based on the volume of their contribution to the system. Rate structure for commercial and industrial customers is based, in part, on the size of the water meter used by those customer classes. All customers (inside and outside Omaha\*) help fund CSO improvements necessary to meet the federal mandates.

\*Cities included in the service area: Omaha, Bellevue, Papillion, La Vista, Ralston, Gretna, Bennington, Boys Town and Carter Lake

## **How can people with low or fixed incomes receive rate assistance?**

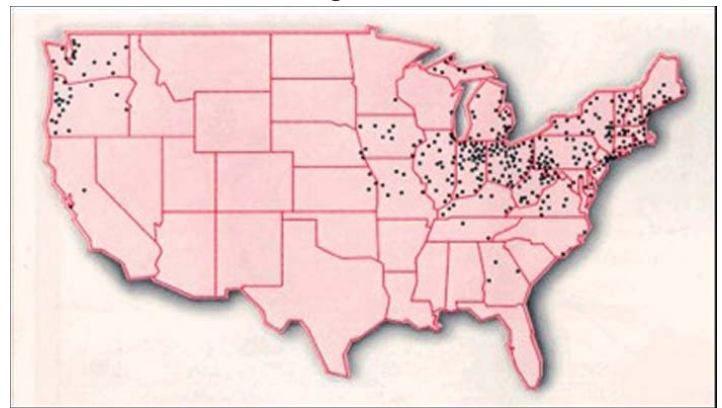
Wastewater service is a utility, like water and gas, with charges based on use. Customers that qualify for energy assistance also receive a utility bill credit to help with rising sewer fees.

## **What will the cost to the individual homeowner be? Will the City incur costs for hook-ups or changes to the home/business, or will that be a homeowner/business cost?**

Sewer separation work will be funded through fees collected from all users of Omaha's regional treatment system. There are no direct costs assessed to individual homes or businesses where new sewers are constructed.

## **What other communities are subject to CSO regulations?**

There are approximately 772 cities in the United States that are subject to CSO regulations. Most of these communities are located in the Northwest, Great Lakes, and Northeast portions of the country adjacent to large bodies of water or rivers. This map shows those areas that have combined sewer systems and are on the EPA's list of regulated CSO communities.



## **What causes the sewer system to overflow?**

In the combined sewer service areas, one pipe exists to convey both sewage and stormwater. When the runoff from rain adds to the sewage component of the flow in the sewer, the system relieves itself to a creek or river at a CSO outfall. If there are no designed overflow points, excess sewage would overflow at other low-lying locations, like basement floor drains.

