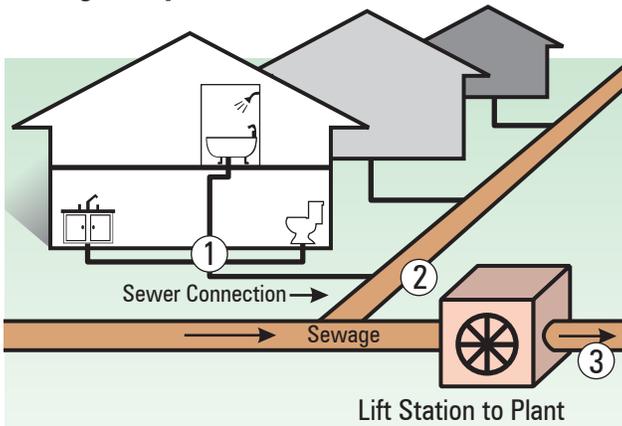
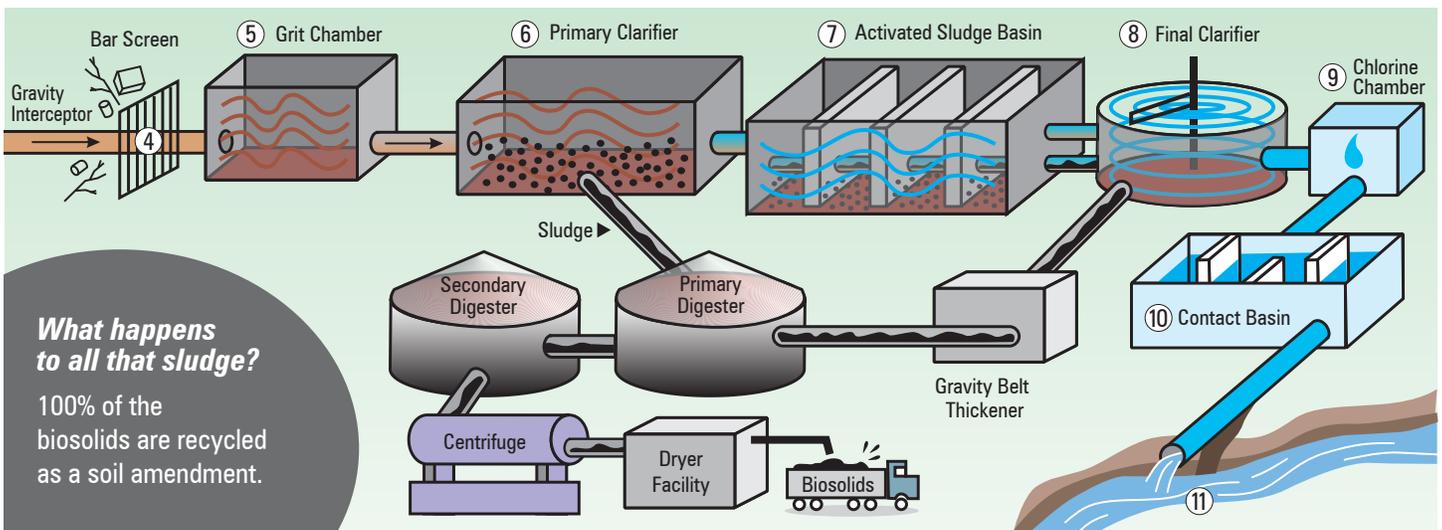


HOW DO WASTEWATER TREATMENT PLANTS WORK?

The collection system begins in your home...



1. **Sewer connections** drain water from toilets, showers, baths and sinks in buildings to a gravity sewer line.
2. **Gravity sewer lines** flow downhill to sewer interceptors.
3. Interceptors send wastewater to the treatment plant. **Lift stations** keep the sewage flowing to the plant.
4. Sewage flows through a **bar screen** to remove branches, rags, wipes and other objects.
5. In the **grit chamber** the flow of sewage is slowed to allow sand and rocks to settle to the bottom for removal.
6. In the **primary clarifier**, solids settle to the bottom and form a sludge. That, along with fats, oil and grease floating on the surface, are removed and sent to large tanks called **digesters**.
7. The primary clarified wastewater now goes to an **activated sludge basin**, where microbes remove contaminants. Air is pumped into the water to speed the process and keep microbes alive.
8. The **final clarifier** separates water from solids formed in the activated sludge basin. Solids are removed from the system and returned to the activated sludge basin to start again. A portion of the solids are sent to the digester tanks.
9. **Chlorine** is added to kill any remaining bacteria.
10. The treated wastewater then flows through a **contact basin** that holds the water for about 90 minutes while chlorine disinfects the water.
11. The treated wastewater is dechlorinated to prevent impacting aquatic life and then **discharged to a stream**.



What happens to all that sludge?

100% of the biosolids are recycled as a soil amendment.

- Two wastewater treatment plants serve Winston-Salem and Forsyth County, the Archie Elledge and Muddy Creek Wastewater Treatment Plants.
- Combined, these plants treated 12.6 billion gallons of wastewater in 2018 and removed 97.2 percent of regulated pollutants, well over state and federal requirements.
- The Archie Elledge and Muddy Creek Wastewater Treatment Plants have a combined capacity of treating 51 million gallons a day.
- Each resident served by Winston-Salem/Forsyth County Utilities produces an average of 375 gallons of wastewater every day.
- Methane produced in the digester treatment process is collected and used to help power the treatment plants.
- The Archie Elledge plant has a biosolids drying facility that converts wastewater biosolids from both plants into a pellet-like substance that is sold as a soil amendment.
- The wastewater collection system includes about 1,785 miles of sewer lines, 50 lift stations and a chemical odor-control station.
- The wastewater collection and treatment system is operated by Winston-Salem/Forsyth County Utilities and is overseen by the Utility Commission, whose members are appointed by the City Council and the Forsyth County Commissioners.

Water Conservation Saves You Money!



TOILETS

Most toilets use more water than necessary. Fill a plastic soap or laundry bottle with water and put it in the tank. (Don't use bricks, they disintegrate and can cause plumbing problems.)



SHOWERS OR BATHS?

Partly-filled tubs use far less water than a long shower. A short shower uses less water than a full tub. Reduced-flow shower heads can cut water use while still providing a strong spray.



LEAKS

Fix leaky plumbing. A slow drip can waste 15 to 20 gallons a day. A 1/16-inch faucet leak wastes 100 gallons a day!



IN THE KITCHEN

Dishwashers use 12 gallons every time they run. Make sure yours is full before you run it. And don't leave the faucet running while you prepare food or wash dishes.



DOING LAUNDRY

Many washing machines use up to 40 gallons per load. Save up for a full load, or adjust your washing machine for a smaller load.



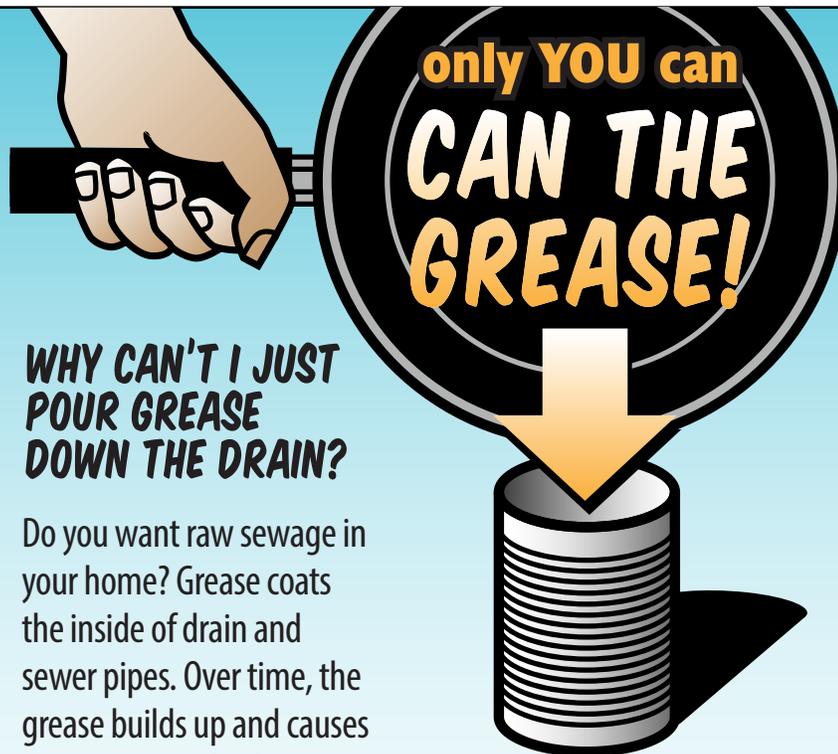
LAWNS

Garden hoses can pour out 600 gallons in a few hours. Set a timer to remind you to turn off your sprinkler promptly. Water at night so there's less evaporation and more water sinks in.



OUTDOORS

Use a bucket when washing your car and run the hose only for rinsing. Never hose off sidewalks and driveways. Use a broom instead.



WHY CAN'T I JUST POUR GREASE DOWN THE DRAIN?

Do you want raw sewage in your home? Grease coats the inside of drain and sewer pipes. Over time, the grease builds up and causes raw sewage to back up into your house!

Follow these simple steps for clog-free drains:

1. Pour or scrape grease from pots and pans into a can.
2. Store the can in your refrigerator.
3. When the can is full and the grease is chilled solid, throw it in the garbage.
4. Pour used liquid frying oil into containers that can be capped and thrown in the garbage.

GREASE MYTHS...

"I can dissolve grease in my pipes with hot water and soap."

FALSE! Hot water gives the illusion of dissolving grease. It really just pushes the grease further down the drain, where it quickly cools and sticks to the inside of the pipe.

"I don't create enough grease to clog pipes."

FALSE! Once deposited inside a pipe, grease does not go away. Over time, any household can put enough grease down a drain to clog its pipes.

"I can flush grease down my toilet."

FALSE! Flushing grease down the toilet just creates build-up in the toilet drain.

"It doesn't matter what I do because I'm in an apartment complex with lots of other kitchens."

FALSE! Apartments are especially vulnerable to grease clogs because there are so many kitchens draining into the sewer system at one point. Every apartment needs to keep grease out of the drain.

"It's not my problem. If the drain is clogged the landlord will pay for the repairs."

MAYBE, BUT ... Depending on your rental agreement, the landlord may pay for the repair, but YOU are the person who has to put up with the inconvenience and stench of a backed-up drain. No one wants raw sewage in their home.