Gary Sanitary District

What happens when you flush?

Where does the water go when you flush the toilet?

What happens to the water that goes down the drain when you take a shower?

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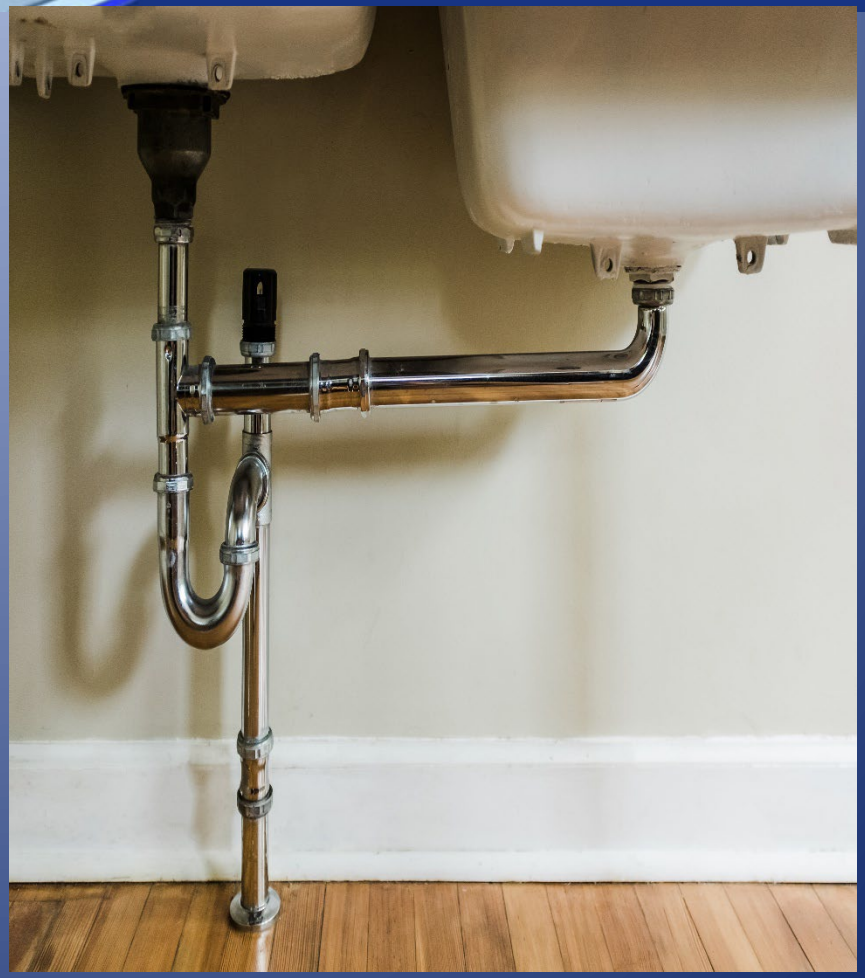
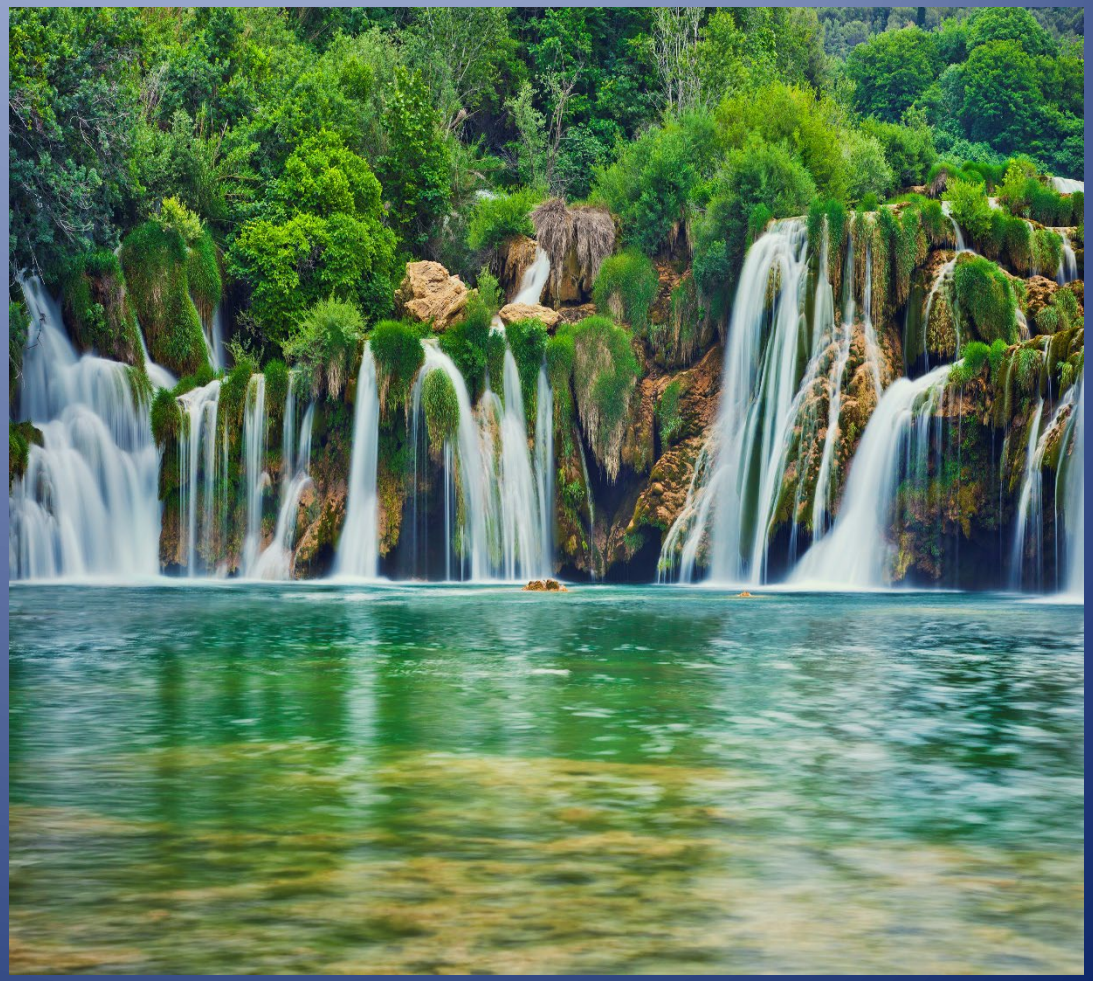
GARY
STORM WATER MANAGEMENT DISTRICT

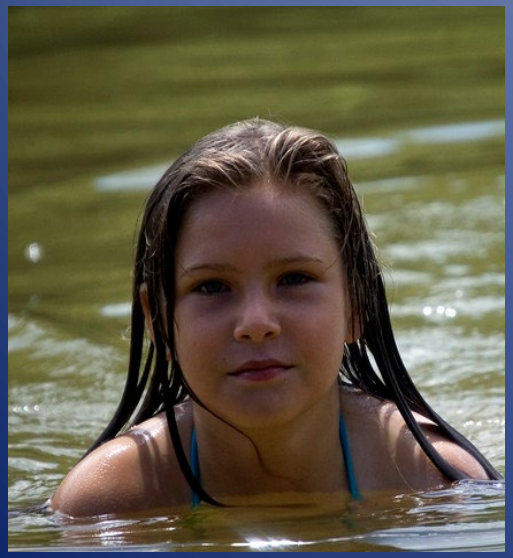


Where does the water go when it rains?

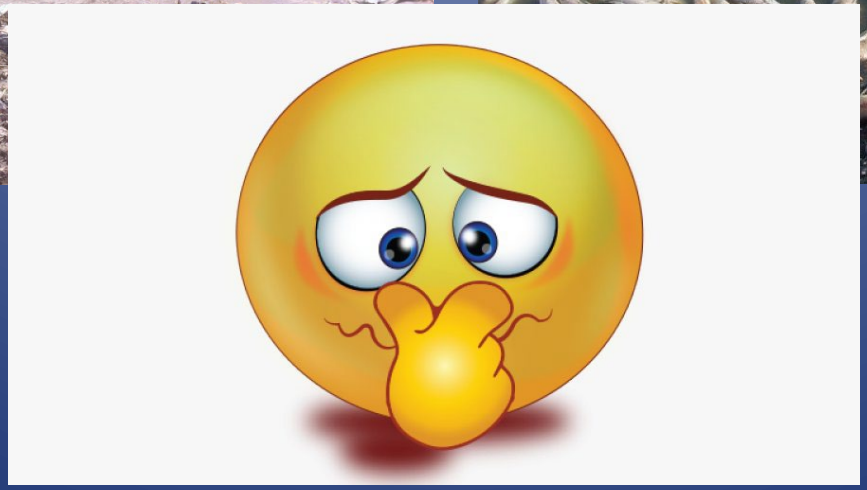
It’s our job to protect the environment!



We also protect the public's health too! That means you!



What happens if we don't treat wastewater?



- GSD provides service to Gary, Hobart, Merrillville, and Lake Station through over 400 miles of sewer.
- On average, GSD treats 40 million gallons of water per day. During a rain event, the flow rate may be as high as 150 million gallons per day.

IDEM NPDES Permit

- Pollutants Effluent limits
- Consequences on non-compliance
- Permit Renewal

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FINED!

GSD WWTP

Preliminary Treatment

The track rack, bar screens, detritus tanks, and grit washers remove large objects to prevent damage to pumps and other equipment.

Primary Treatment

Ten primary clarifiers remove about 50% of suspended solids, 30% of BOD, 30% of phosphorus, and 1-2% of ammonia, by slowing flow to allow substances heavier than water to settle to the bottom and substances lighter than water to rise to the top.

GSD has eight square and two rectangular primary clarifiers.

Secondary Treatment

Biological Treatment removes dissolved and suspended organic solids that remain in the wastewater. Bacteria are said to be the hardest workers in a wastewater plant and they utilize solids as a food source in the aeration tanks and then settle out in the secondary clarifiers. After secondary treatment, about 99% of ammonia, 97% of BOD and suspended solids, and 87% of phosphorus has been removed.

GSD has six aeration tanks where air is added to help the bacteria thrive.

There are 24 secondary clarifiers which settle dissolved and suspended solids

Most of the solids are returned to the aerators as “Returned Activated Sludge” or RAS. Excess solids are wasted. In other words, removed from the waste stream.

Tertiary Treatment

Filtration is the polishing step which removes remaining fine suspended solids. Screw pumps (shown on the right) convey water from the secondary clarifiers to the filters.

Chlorine Contact Chamber

Chlorination/de-chlorination is the last step. First, the water is chlorinated to inactivate *E. coli.* Then the water is de-chlorinated prior to discharge into the Grand Calumet River.

Outfall

The finished product is treated water that is environmentally safe.

Solids Handling

The resultant solids that are produced during primary and secondary treatment are collected and thickened. They are then pumped to anaerobic digesters where bacteria use the organic material as a food source. The methane that is produced in this process can be used as fuel in the digester boilers.

Digested solids are dewatered in the dewatering building and hauled to a landfill.

Operations

Maintenance

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