

# Watertown Wastewater Treatment Plant

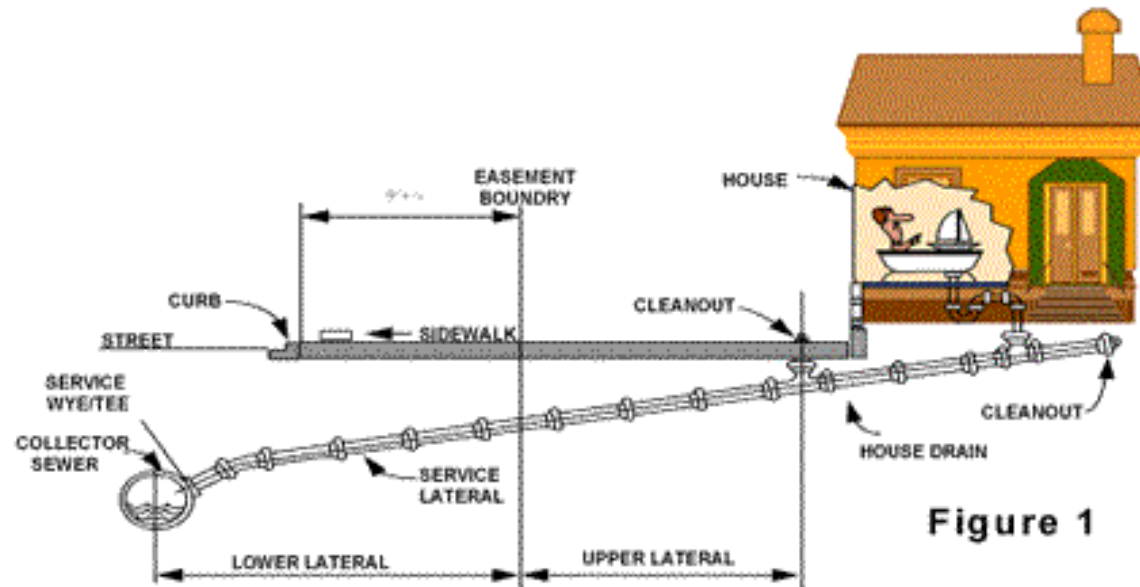




# Watertown WWTP



# Sanitary Collection System



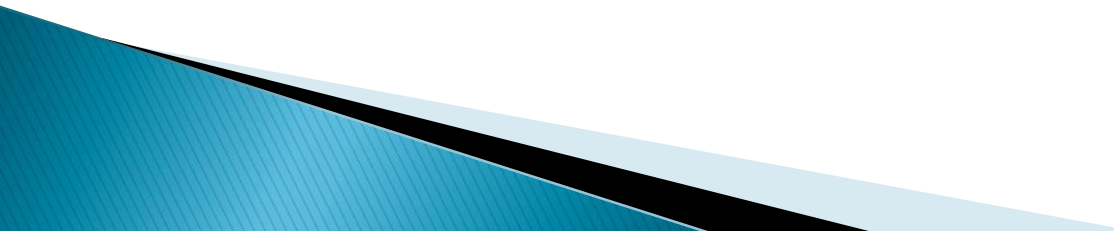
# Toilets

- ▶ Who invented the Modern day Toilet?
- ▶ Sir John Harington in 1596



# Diseases Before Toilets

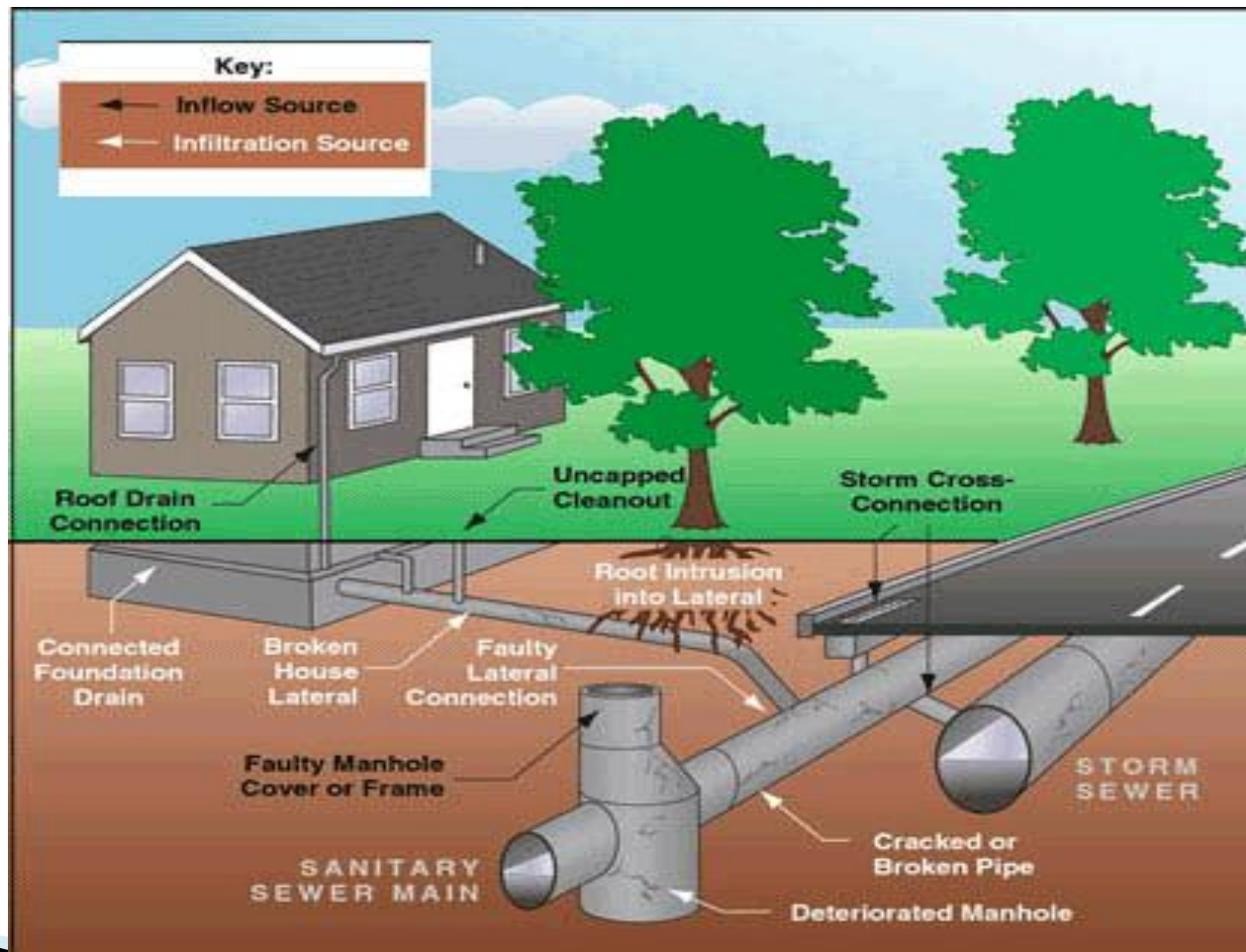
## ▶ Cholera

- ▶ Cholera is caused by ingestion of the bacterium, *Vibrio cholerae*. The infection is spread through contaminated fecal matter, which can be consumed through tainted food and water sources or because of poor sanitation and hygiene, like unwashed hands.
  - ▶ In the developing world 80% of disease is due to poor sanitation
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# London England

- ▶ London was filled with the smell of wet horses and the waste materials associated with them. Sanitation was unheard of. Water was unpurified, and raw sewage ran down city streets in open drains. It was common practice for people to empty their chamber pots out of their windows, and to leave garbage out in the street to rot. C.P. Moritz wrote in 1782, "Nothing in London makes a more detestable sight than the butchers' stalls, especially in the neighborhood of the Tower. The guts and other refuse are all thrown on the street and set up an unbearable stink

# Sanitary Collection System





# Sanitary Pipes



# Collection Sewer Pipe

- ▶ The pipe sizes in the Watertown Collection system range from 8" – 60"
- ▶ Who can tell me what 60" is in feet?
- ▶ Watertown's collection system has 110 miles of pipe under ground

# Pumping Station





# Influent Pumping Station Wetwell





# Influent pumping Station Wetwell



# Influent Pumping Station Pump





# Influent Pumping Station Dry Well



# Primary Building





# Primary Building BarScreen





# Primary Building Grit Removal



# Primary Building Grit Removal





# Primary Building Grit Removal



# Primary Building Grit Removal





# Primary Clarifiers



# Primary Clarifiers





# Primary Clarifiers





# Primary Clarifiers Solids Removal



# Primary Clarifiers





# Splitter Box





# Aeration Basins



# Aeration Basins



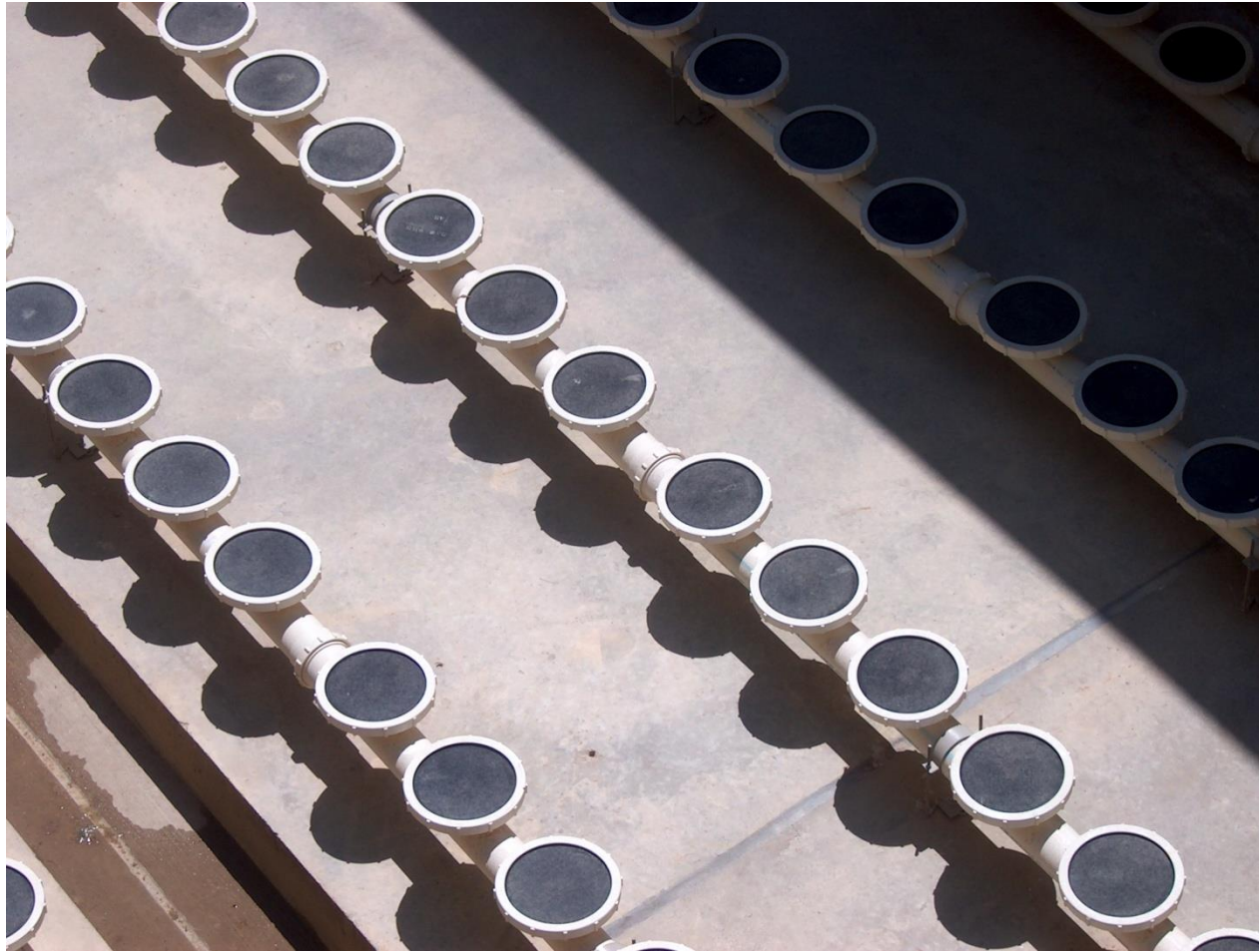


# Aeration Basins





# Aeration Basins



# Aeration Basins





# Aeration Basin Blowers





# Microscopic Evaluation



# Final Clarifiers





# Final Clarifiers



# Final Clarifiers Solids Removal





# Secondary Building



# UV Disinfection





# Effluent Sampler



# Effluent Sampler





# Plant Effluent





# Step Aeration



# Digesters





# Digesters



# Digesters





# Sludge Heating



# Methane Gas Burner





# Sludge Dewatering



# Centrifuges





# Centrifuge



# Biosolids Storage





# Biosolids Storage



# Generator Building





# Plant Generator

