

“Houston Problem”:- COH SSO and Inflow Issues

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In July of 2019 City of Houston released its EPA consent decree. As of 1972 the United States has enacted the Clean Water Act law to prohibit pollutants into our surface water and living environment. Sewer collection systems should be design to keep and contain all sewer inside the system until it reaches the wastewater treatment plant so that it may be properly treated for discharge.

When sanitary sewer overflows (SSO) out of the collection system it is called an unauthorized discharge. This is untreated raw sewage into our yards, schools, business, playgrounds, parks, streets, and water ways. Overtime you have lots of bacteria residuals left on the surfaces of all these places. This is a major health hazard to our community and is illegal by law.

So more specific to City of Houston. The estimated amounts of fines over years of sewer overflows has totaled in fines of close to 18 billion dollars. The EPA CD was negotiated with COH to spend approximately 3 billion dollars to remedy the problem. So, what’s the simplest way to break down the problem? Volume/capacity of the collection system. When the system is full of rain water it simply overflows. There are three main part of the sewer collection system for COH, comprised of the following.

The Collection System:

1. 6,200 miles of sewer mains
2. 127,000 manholes

3. 384 lift Station

Inflow's/leaks into the sanitary sewer collection system are the single biggest culprit. We recently tested the most common manhole cover that is used in the existing system and it leaks at a rate of 45gpm (see attached report). This figure alone during a Houston 24-hour rain event has the potential allowing 8.2 Billion gallons of storm water into the collection system.

Why is knowing this so important? Because it's one of the easiest and fastest assets to upgrade in the entire system, and will STOP billions of gallons annually of unimpeded inflow. It will also meet EPA's direct goal of preventing the discharge as each discharge is measured per occurrence. "Stop the bleeding of the patient" Dr. Vipu.

Three Key Factors to Fix the Problem:

1. Stop quick massive inflow during rain events
2. Increase flow (cleaning lines)
3. Increase capacity (larger trunk lines and more capacity wells that eliminate Liftstations)

Do these things in the correct sequencing and you will not only fix the problem you will also have an R.O.I. on these upgrades that will pay long term divides to the City and the Tax base floating the bill for all these new upgrades. Collectively as a team of professionals working together with our resources in the greater Houston area, we will solve this problem and we will be an example for the nation and the EPA to model from when all is said and done. This is my own personal belief; Houston is my home town and I do not want to see my children or your children struggle with our inability to solve our own problems today. Water/Sewer Infrastructure is ultra-critical to our survival as a top priority and we must step up now!

EPA CD Link:

<https://www.epa.gov/enforcement/city-houston-consent-decree> 157 pages from start to finish.

City of Houston CD Link:

<https://www.publicworks.houstontx.gov/wastewater-cd>

TCEQ

<https://www.tceq.texas.gov/agency/subjects-of-interest/wastewater/sanitary-sewer-overflows>