



An Overview of The Woodlands' Wastewater Systems

By: Jace A. Houston

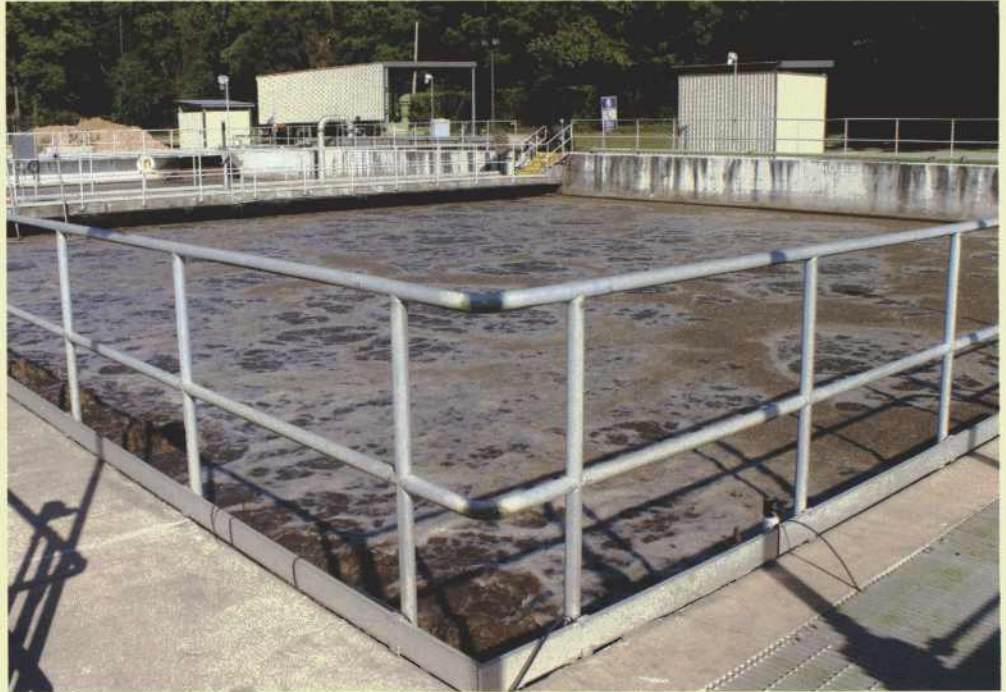
Since 1975, the San Jacinto River Authority (SJRA) Woodlands Division has served as the wholesale provider of wastewater services to the Municipal Utility Districts (MUDs) that provide retail services within The Woodlands. This long tenure in the area has helped SJRA grow with the community and understand the needs of the residents and commercial users. The area's growth has dictated a corresponding growth in the wholesale wastewater system. To help understand some of the tasks and demands on the SJRA Woodlands Division wastewater system, below are some statistics for the wholesale system.

- Wastewater collection and treatment
 - First wastewater treatment plant constructed in 1973 (still operational)
 - Average wastewater treatment between 2012 and 2015 – 2.79 billion gallons per year
 - Maximum treatment capacity: 14.7 million gallons per day (MGD)
 - 30 lift stations
- Three Wastewater Treatment Plants (WWTP)
 - WWTP No. 1 – Sawdust Road; 7.8 MGD
 - WWTP No. 2 – Research Forest; 6.0 MGD
 - WWTP No. 3 – Harper's Landing; 0.90 MGD
- 50 miles of gravity wastewater lines (15" and larger in diameter)
- 0 miles of force mains
- A little known fact is that wastewater is 99.8% water.
 - The remaining 0.2% is what WWTPs were designed to remove.

Within the WWTPs, it may not seem like a lot is going on, but in reality there is a lot of biology occurring as billions and billions of microbes work nonstop to convert the wastewater into various products that are not harmful to the environment and can be removed from the wastewater. The microbes convert organic matter, microorganisms, nutrients, and other materials into other forms of organic matter, inorganic matter, and nutrients.

As with any living organism, the microbes or bugs (as they are referred to in the industry) are susceptible to hazardous products. These products range from beauty products and medicines to auto fluids and paints. These products should never be flushed or poured down the drain and can not only cause harm to the microbes in the system but can also damage the physical attributes that remove the wastewater from homes and carry it to the WWTPs.

The hard work of the microbes is only half of the work conducted - the biological half. The



other part of a WWTP is the physical separation of debris from the wastewater - the physical half. This process is easier to understand since gravity and mechanical devices work hand-in-hand to physically separate the solids from the liquids the same way you strain items in a colander or kitchen strainer. It may sound rather simple, but without this physical process the microbes would have to work double-time to break down items such as grease poured or flushed into the system. The majority of the physically-separated items are inorganics (like flushable wipes) that are not bio-

degradable and will never break down.

There are many other aspects of wastewater collection and treatment operations such as asset management, water quality testing, receiving stream water quality, and so on, that assist to ensure continuous wastewater services with high quality results. If you have questions regarding the wastewater system, its operations, or would like to set up a tour of our facilities, you can contact the Woodlands Joint Powers Agency (WJPA) at 1-855-H2O-SAVE (1-855-426-7283) or the SJRA Woodlands Division at 281-367-9511. ♦