



# Jefferson County West Virginia

Public Information

## 2.0 Background

Charles Town, Ranson, and the PSD each maintain sewer collection systems that convey flows to the Charles Town WWTP. Ranson and the PSD maintain a total of 5 flow meters to measure flows generated by their respective collection systems and conveyed to the Charles Town WWTP. Unfortunately, these flow meters, particularly several maintained by the PSD, have operated sporadically. As such, both Ranson and the PSD currently pay for their sewage treatment based on water use (Ranson) or a flat user fee (PSD).

The three sewer collection systems combined consists of approximately 265,000 linear feet of sewer main and 1000 manholes. Approximately 3575 (%) lateral connections are estimated to exist among the three systems. The original portions of the Charles Town and Ranson collection systems were constructed in the 1930s with a second upgrade and expansion phase being built in the 1970s. The PSD collection system is relatively new with the exception of several small systems that they have taken over operations. Continued expansion has occurred in all three collection systems, particularly in Ranson and the PSD, commiserate with new development.

In general, the three sewer collection systems are relatively shallow (i.e., less than 6 feet deep), which has likely minimized infiltration over the years because the sewer segments are primarily above the groundwater table. Analysis of WWTP flow data, discussed fully in a later section, suggests that a majority of the I&I in the systems is inflow related.

The Charles Town Wastewater Treatment Plant (WWTP) is located on the east edge of the City along Evitt's Run. The WWTP is an extended aeration activated sludge treatment plant and consists of a bar screen, three parallel aeration basins, three clarifiers, and an ultraviolet disinfection system. The average daily permitted capacity of the plant is 1.2 MGD with a design instantaneous peak flow capacity of 3.0 MGD. Charles Town, Ranson and the PSD operate two (2), one (1), and twenty-three (23) pump stations respectively.