2020 Infiltration/Inflow Reduction Action Plan

The purpose of this I/I Reduction Action Plan is to create a list of actionable projects that will reduce the amount of I/I introduced into the Village sanitary sewer system. These action items and projects are a result of recent utility physical surveys, review of historical documents, mapping of existing infrastructure, smoke testing, localized flooding occurrences and maintenance of existing system issues. While additional studies and mapping of infrastructure will help identify more areas of possible I/I, the list of projects below will address the biggest known I/I contributors.

1) Placement of permanent flow monitors. The sanitary system is divided into 6 main sub-areas for flow metering: North metershed, Northwest metershed, Central metershed, Southwest metershed, South metershed, and Southeast metershed. The system has existing metering located at a pump station in the Southwest metershed where the original wastewater treatment plant was located. There is also existing metering in and out of the new wastewater plant. A flow meter is proposed for each of the other 5 metersheds including meters at the pump stations at Ashton Crossing and Ashton Village for a total of 6 new flow meters. The Village is currently identifying the best flow monitoring products for their needs as well as funding to implement them. [See Exhibit 1 for location of proposed metersheds and meters.]

2) South Metershed Improvements – The sanitary sewer around Dime Alley, Silver Alley and Beaver Alley (Built 1934), north of Church Street have known I/I sources and cross connections with the storm sewer system. Smoke testing was performed in September of 2019 in this area along with areas along Plum Street and Griffith Alley (southeast metershed). The smoke testing showed that almost 1/3rd of the properties have flawed service connections that allow I/I to enter the sanitary sewer system. Additionally, the lack of storm sewer infrastructure resulted in mistaken connections to the sanitary system in order to alleviate localized flooding. The proposed improvements in the area include replacing the aged sanitary sewer lines along the 3 alleys and Church street, providing an adequate storm sewer system to reduce possible rainfall induced I/I, and to separate roof drains, sump pumps and sanitary services to the appropriate system. [See Exhibit 2 for preliminary infrastructure alignments.]

3) Railroad Storm Sewer Outlet south of Main Street – The 36" storm sewer outlet along the railroad tracks, south of Main Street was constructed in 1908. The outlet is a tributary of Center Alley and areas in the center of the Village. The outlet is located along railroad property and was recently found to be broken (see picture below). The damaged storm sewer is backing up into areas around Center Alley and causing basement flooding. This storm water backup is contributing to I/I issues in the area and is considered an emergency project. The Village is currently working with Norfolk Southern to obtain access and easements in order to fix the issue. The proposed solution is to construct a manhole at the broken section of pipe and place a new pipe outlet to the Creek. [See Exhibit 3 for alignment.]

4) Southeast Metershed Improvements – These improvements are a continuation of the South Metershed Improvements. The sanitary and storm sewer along Griffith Alley needs to be replaced and roof drains, sump pumps and sanitary services reconnected to the appropriate system. This area was also recently smoke tested and a number of residences have been determined to be incorrectly connected to the sanitary sewer system. [See Exhibit 4 for proposed alignments.]

5) Maple Street Sanitary Improvements – Residents near Maple Street between Gary Street and Peggy Lane have complained of water in their basement. This sanitary sewer and services are over 70 years old. CCTV information shows separation in the joints of the main line as well as separation at the sanitary services which are contributing I/I factors in this area. While some of the basement flooding is likely due to overall capacity issues of the system, the existing infrastructure in this area is not functioning appropriately. In 1985 the sanitary flow was rerouted from south to north with an additional parallel sanitary line. The proposed improvement in this area are to reconstruct the sanitary sewer system and remove and/or abandon duplicate pipes and manholes. [See Exhibit 5 for proposed improvements.]