Information provided within this document identifies problematic issues regarding the Town of Elkton’s Wastewater Treatment System and the Town’s response to these problems.

Town Manager’s Office
173 West Spotswood Avenue
Elkton, Virginia 22827
Introduction

Most people take for granted that sewage from their homes and businesses will be handled appropriately. The best case scenario for most people is when they do not even notice the wastewater system and waste is handled out of sight and out of mind. It is the goal of the Town of Elkton to provide wastewater treatment services in such a way that citizens can be assured that their wastewater needs are met without hassle and without any further thought on the part of the customer.

Unfortunately, there are serious problems with our wastewater system. The physical structures associated with Elkton’s wastewater system have aged and have become undersized. Both circumstances reduce the ability for the Town’s wastewater treatment plant to handle and treat waste.

The purpose of this document is to inform citizens about the problems with the wastewater plant, how the Town intends to solve those problems, and how the Town intends to prevent this circumstance in the future.

Who is responsible for wastewater services in Elkton?

Wastewater treatment and drinking water distribution services are provided by the Town of Elkton’s Department of Public Works. This Department also manages general maintenance and the Town’s electric system. The Department is headed by Timmy Turner, Director. He can be reached at (540)298-1330 or you may email his assistant, Donna Gooden, at dgooden@townofelkton.com.
What are the problems with Elkton’s Wastewater Collection System?

Simply, the wastewater collection system (the sewer pipes that run throughout town) in Elkton is getting old. While it was constructed well in its time, the system is in serious need of repair. As the wastewater collection system has aged, pipes have cracked, introducing a significant amount of non-wastewater into the system. When there is rain, groundwater and rainwater enter the system. Obviously that water does not need to be treated. When that happens, the wastewater treatment plant located on Old Spotswood Trail becomes overloaded. When this happens, it becomes more difficult to appropriately treat the wastewater. When we cannot treat the wastewater appropriately, we discharge too much waste into the Shenandoah River and violate the Town’s discharge permit limits.

Why do we need to fix these problems?

The Virginia Department of Environmental Quality (DEQ) has mandated that certain upgrades be made to the wastewater treatment plant and the wastewater collection system (we must fix the I & I problems). As a part of a Consent Order issued in 2008, the Town agreed to make the improvements mandated by the Department.

In addition to the governmental mandate, simply, improving the system is the right thing to do for the future of the Town. In order for the Town to continue to provide wastewater services, we must be committed to fixing the problems with the wastewater system. We must provide our children and grandchildren with a wastewater system that will meet it needs.

What are the physical problems at the Wastewater Treatment Plant?

In addition to the large amount of rainwater and groundwater that enters the system (we refer to this water as inflow and infiltration - or I & I for short), there are a number of physical problems associated with the plant. Over time, many of the physical components fell into disrepair and for one reason or another, were never repaired.

In simple terms, many of the operational units in the plant do not work or are undersized. These components need to be repaired or replaced.

How do I & I problems develop?

Currently, the Town’s wastewater needs are served primarily by sewer pipes constructed with terra cotta. These clay pipes over time crack for a number of reasons. Among others, these reasons include tree roots growing near the pipe and eventually invading the pipeline, ground settling, periodic excessive weight over long periods of time (trucks driving over the area in which the sewer pipe lays), etc.

When cracks form in the pipes, ground water and rainwater enter the collection system. Of course, it is not necessary for the Town to treat rainwater or groundwater, but once it enters the collection system, we have no choice but to treat it just like any other water in the system. In short, we are treating a lot more water than the town actually produces and for which we charge for service.
What effect do the wastewater system problems have on the citizens of Elkton?

The threat to the health and safety of the citizens of Elkton that this circumstance present is great. If the Town’s wastewater treatment plant is unable to treat all of the waste of the system, waste from the sewer system could surge and flow into the streets of Elkton. Additionally, everytime flow is so great that the Town violates its discharge permit, an unacceptable level of bacteria and other contaminants enter the Shenandoah River.

When did the Town become aware of these problems?

The Town of Elkton orginally learned of the problems associated with the wastewater treatment system in 2007. At that time, a preliminary engineering report was completed by the Town’s contracted engineering firm which analyzed the current status of the plant and the collection system. In subsequent months, Town officials became aware that the level of contaminants being discharged into the Shenandoah River were greater than is allowed by the Town’s discharge permit. At that time, the Virginia Department of Environmental Quality cited the Town for these discharge violations. The Town’s engineering firm then developed a new preliminary engineering report which would address only the problems associated with the discharge permit violations. Furthermore, the Town elected to focus on I & I repairs instead of expanding the capacity of the sewer plant, which was the prospect of the orginal plan. The expansion would have cost almost eight million dollars.
For lack of a more grand explanation, we are fixing the sewer pipes. During the winter of 2010, the Town staff identified seven major problem locations and have prioritized them as the worst locations. Beginning in the summer and fall of 2010, the Town's Public Works Department will be digging up and replacing broken sewer pipes. In all, we are planning to replace approximately 3,250 feet of sewer pipe during this summer and fall. In the subsequent months, the Town plans to continue to investigate the collection system and determine where problems exist. During the summers of 2011 and beyond, we will do more replacement projects until we make a significant and meaningful impact on the inflow and infiltration problem which is negatively affecting the wastewater treatment plant. For the coming years, we will continue this rotation until we have solved as much of the problem as possible.

In order to find problems in the collection system, staff use a number of tools. First, staff use water flow meters to determine how many gallons of water per minute are traveling in certain areas. Then, staff compares the amount of water sold in the area served by the sewer pipe. Any amount of water that we measure during this time more than we sell is likely I & I. When staff find a major problem area, they use a smoke blower to find major cracks in the system. It is not unusual to see smoke coming right out of the ground when this is occurring! This indicates major cracks in our sewer pipes. When that is complete, staff utilize a special camera which allows them to inspect the inside of pipes. When they do this, they can see water flowing in, roots, and other issues which cause I & I. At that time, staff have pinpointed specific locations which must be repaired.