



This fact sheet addresses common questions about the flow equalization system that is being incorporated in the proposed project.

Purpose and Benefits of Process

The network of piping in the sanitary sewer system that collects and conveys wastewater from residential and commercial areas are of varying age and condition. As collection system piping and manholes age the potential for seepage of groundwater and leakage of stormwater into the sewage collection system increases, especially during and following large rain events. This results in peak flows during and shortly after large storm events that can overwhelm the ability of the treatment plant to convey and treat this flow. Flow equalization tanks provide storage of flow during peak flow events to allow reduction of the peaks flows seen by the treatment units downstream of the equalization tanks. The stored wastewater is then metered into the treatment system

after the peak flow has passed. The equalization basin offers the following benefits:

- Reduces the need for costly expansion of the treatment facility for infrequent events which do not increase the average daily flow to a facility.
- Reduces the potential for sanitary sewer overflows in the collection system and at the treatment facility, which in turn reduces the potential for public health concerns and damage to the environment.
- Provides the ability to balance daily variations in flow to the treatment facility which improves the efficiency of treatment operations.

Flow Equalization



Description of Process

The general need for the equalization system is limited to significant rainfall events in the collection system surrounding the treatment facility. Accordingly, the equalization tank at the Franklin WRF will generally be empty so that it is ready to provide storage during rain events. After the flow has passed through the headworks facility for screening and grit removal, excess flow during rain events will be diverted to the equalization tank either by gravity or by a series of pumps. It is typical for all flow to be screened and de-gritted prior to storage to minimize odor potential from the tank and the required post peak flow event cleanup. To prevent septic conditions of the liquid stored in the tank a pumped mixing system will be installed to recirculate the liquid and minimize potential for solids settlement. Typically the flow is

stored for a maximum of 72 hours and designed for a 2-year 24-hour rain storm event.

What Process Modifications will be made?

The existing Franklin WRF does not currently have any flow equalization facilities in use. This will be a new process to be added to the plant. This will include a new 10 million gallon concrete storage tank that will be partially above ground and partially below ground. The tank will have a dome roof to ensure fugitive odors are captured from the stored liquid. When in use the, the ventilated air from the equalization tank will be treated in an odor control system. Once the rain event passes and peak flow rates subside, the tank will be drained back to the plant for treatment.

Is the process a potential odor source? Is the process odor controlled?

Flow equalization storage is a potential odor source as the liquid has yet to receive biological treatment. Although in the case of the Franklin facility, the liquid will be screened and de-gritted which will significantly reduce the potential for odors.

The new equalization tank at the Franklin WRF will have a dome roof to enclose the stored wastewater and capture odors. When in use, the ventilated air from the equalization tank will be treated in an odor control system that utilized an activated carbon media to absorb odors.

Does the process include equipment that has the potential to create noise?

If so, is there any noise control provided?

The largest equipment associated with the flow equalization tank includes the jet mixing pump system which is entirely within the interior of the tank and includes four 200 HP pumps. The pumps will be submerged in the wastewater and will not generate noise that will propagate beyond the plant property lines. The odor control system for the tank will be located outdoors adjacent to the equalization tank and will include a centrifugal fan for conveyance of the air. This odor control system will only be in operation when the tank is in operation and will generate minimal noise.

Will the process modification change the look and feel of the site?

The new equalization tank will be partially above ground. Several existing unused structures will be demolished and the equalization tank will be constructed in the location where the old structures were removed. The equalization tank will be taller than many of the existing structures at the facility with an overall height above the ground surface of approximately 45 feet. The height of the tank is necessary in order to achieve the required 10 million gallons of volume and to physically fit within the available real estate at the facility.

Will the process modification change the safety of the site?

The tank and its contents will not pose a safety risk to the surrounding community. Access to the tank will be restricted and controlled to

prevent unauthorized access. The tank will be ventilated during use to prevent the buildup of gases associated with sewage and to control the fugitive odor emissions.