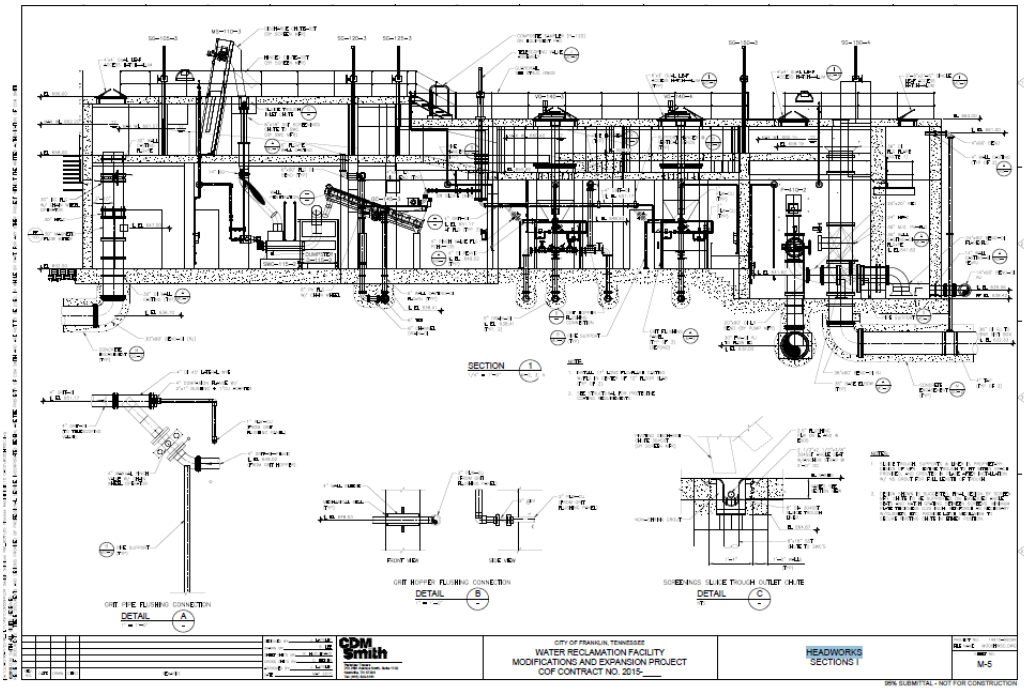

Headworks and Odor Control

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

Purpose and Benefits of Process

The headworks system of a wastewater treatment system is generally the first process the wastewater flows through, which is where it gets the name "headworks". The headworks usually consists of screening and grit removal. The purpose and benefits of the headworks are:

- Removal of larger debris from the influent wastewater by screening. This typically includes sticks, plastics, rags, wipes and other non-biodegradable items.
- Removal of smaller inorganic particles by grit removal. Removal of inorganic particles and grit early in the treatment process improves the ability of the secondary biological process to occur more efficiently as well as extends the life of critical equipment such as pumps by eliminating abrasive particles from the liquid.
- Removing debris early in the treatment process can reduce odors in subsequent steps of the treatment process.

Description of Process

The new headworks system will have four motor operated screening systems with ¼-inch openings. These "grate" like devices catch larger debris and remove it from the wastewater. The collected screenings are washed and compacted in separate equipment to remove organic matter and reduce the volume of material for ultimate disposal at a local landfill.

Following the screening process the wastewater goes through a larger chamber where a gentle swirling action is induced into the liquid to promote an environment where the velocity of the liquid slows down to a point where the larger grit, sand, and inorganic particles can settle out of the wastewater while the lighter organic materials remain entrained in the wastewater stream. The settled grit is collected into a slurry and conveyed to a separate piece of equipment which concentrates the grit, removing excess liquid and attached organic matter and returning that to the plant for treatment. The collected grit is also disposed of in a local landfill.

What Process Modifications will be made?

The screening and grit removal processes are a vital part of the treatment process to make the secondary biological treatment

system work efficiently and effectively. The existing headworks facility at the Franklin WRF is not of sufficient size to appropriately treat the necessary flow through this unit processes and will therefore will be completely replaced with a new, larger headworks system.

The existing headworks facility also included an odor control system which had varying success at controlling odors from this process. The new headworks facility will include a new state of the art odor control system.

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

The headworks system is one of the main potential odor sources for a wastewater treatment facility. Accordingly the new headworks structure has been designed to have completely enclosed channels for conveying the liquid. In addition, the screenings and grit processing equipment and associated dumpsters are housed in enclosed areas inside the first floor of the structure to minimize potential for fugitive odors. Fans will pull air out of the enclosed channels and first floor areas and that air will be pushed through a new state of the art odor control system, which will scrub the air before discharge to the atmosphere.

Does the process include equipment that has the potential to create noise? If so, is there any noise control provided?

The four screens will be located outside with 5HP motors which will be similar to the existing screening system which has three screens with similar sized motors. The fans for the odor control system will also be located outside with motors of approximately the same size as the existing odor control fans. The headworks facility will include several new pieces of equipment, the largest of which with the most potential for noise will be installed indoors on the first floor of the building which will drastically reduce potential for noise in the area. The noise levels associated with this equipment will be significantly quieter than existing equipment at the Franklin WRF and is not likely to be heard from the property lines. There is no other proposed equipment that has the potential to make noise outdoors.

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

The headworks building will be located adjacent to the existing headworks building in the central part of the existing facility. The new headworks structure will be slightly larger in length and width and slightly higher than the existing headworks. The new structure will be of concrete construction with the old headworks to be demolished once the new facility is placed into service.

Will the process modification change the safety of the site?

The headworks structure, consisting of screening and grit removal, will not change the safety of the site as the new equipment will be similar to existing with larger capacity. The new odor control system will be a biological process as opposed to the existing equipment which utilizes chemical reaction process to remove odors. The existing and new odor control systems pose no offsite safety threat. The existing system utilizes chemicals and therefore requires observation of typical safety protocol to protect workers. The new system will be a biological odor treatment system and will therefore be inherently safer for workers.

The design of the headworks system follows the latest National Fire Protection Association (NFPA) 820 standards for fire protection at wastewater treatment plants. Any electrical equipment within specified radius of the portions of the headworks process must be explosion proof rated. The safety of the site will be improved by the new headworks because the equipment will be new and the equipment and systems will comply with the latest safety and fire standards.