FREDERICKSBURG SEWER & WATER AUTHORITY

MANGANESE FILTRATION FACILITY AND RELATED UPGRADES PROJECT

GENERAL OVERVIEW:

The FSWA Public Water System provides potable water service to the village of Fredericksburg, Bethel Township, Lebanon County, PA, and adjacent areas, including the State Route 22 corridor to the east.

The current system consists of three wells (FSWA wells 2, 5, & 6, referred to as the North Wells), two (2) 1-million-gallon elevated composite water towers (the green East tower and the dark blue West tower), and a 141,000-gallon reservoir. The system also has an interconnection with the City of Lebanon Authority (CoLA) water system.

While the FSWA owns and operates the water towers, they have entered into agreements with where Bell & Evans covers the costs to maintain the paint jobs on the towers in exchange for being able to place their logos on the tanks. This arrangement saves the FSWA water customers from paying for the expensive paint maintenance which is required about every ten years.

Fluctuations in the amount of water sold have predominantly been due to changes in demand by the poultry processing industry in and around Fredericksburg. The FSWA has entered into agreements with the poultry processors, Bell & Evans, and Poultry Holdings, to regulate the amounts of water and wastewater required by their facilities. The companies have been very cooperative and assist the FSWA in planning for growth.

EXTENT OF WATER SYSTEM:

Bethel Township, Lebanon County, PA is predominantly a rural agricultural area. The Village of Fredericksburg is in the middle of the Township and is the largest residential population center. The FSWA serves the Village and surrounding areas with both water and sewer service. The South Fredericksburg service area is currently served by wastewater only, but adding water service to the region has been discussed on several occasions. There is currently no plan or schedule for when that expansion might occur.

Recently, Bell & Evans has informed the FSWA that they will assume responsibility for finding any water more than that outlined in the current form of their Master Water Agreement with the FSWA. They plan aggressive growth in the area but do not anticipate requiring the FSWA to provide anything more than additional sewer capacity for the domestic wastewater from proposed additional

facilities. This commitment allows the FSWA to size the manganese filtration facility with only moderate planning for growth and expansion.

The Hungerford & Terry GreensandPlus manganese filters are designed as a modular system which allows for expansion by means of standardized manifolds. Additional treatment vessels can be added to the end of the line by simply aligning flanges and bolting them together. The plant shall be designed with space and provisions for adding an additional (fifth) filter which would add about 198 gpm or 285,000 gpd. However, additional source(s) would be required to accommodate such growth, unless an additional allocation from CoLA is approved and contracted. With an expanded allocation from CoLA, the addition of a fifth filter vessel would not be necessary.

PROJECT SCOPE:

The project consists of several additions and upgrades to the FSWA Public Water System. Specifically, the modifications include the following:

1) Construction of a manganese filtration facility incorporating a bank of four (4) Hungerford & Terry (H&T) GreensandPlus filters (Greensand filters), two (2) UV disinfection units, and various other upgrades necessary to incorporate them into the water system.

2) Addition of sodium hypochlorite, ortho-polyphosphate blends and fluoride shall be discontinued at the existing North Wells (FSWA Wells 2, 5, and 6).

3) Water from the North Wells shall be rerouted to the manganese filter building.

4) The existing reservoir, which currently serves as the 4-Log chlorine contact time vessel for water from the North Wells, the high-service pumps, and the Systecon distribution pumps at the existing water system building shall be taken out of service.

5) Two new groundwater sources, South Wells 7 & 8, shall be fully developed and brought online to supply additional water to the FSWA system.

6) Water from the South Wells shall also be routed to the manganese filter building.

7) Existing Well 6 shall be reconfigured to extend the well head above grade, to meet current DEP standards. Well 6 shall also be upgraded to include a VFD and compatible pump motor.

8) The Tap-App mixer in the existing East Water Tower shall be removed.

9) The Tap-App mixer in the existing West Water Tower shall be removed and a mechanical mixer shall be installed.

10) The existing SCADA system shall be reprogrammed and updated to accommodate the new system configuration, including, but not limited to, monitoring and control of all new equipment and facilities, addition of a second SCADA PC at the manganese filter plant site, and secure, password protected cell phone and tablet accessibility. The mirror unit SCADA PC shall remain at the Little Swatara Creek WWTP, providing a backup monitoring and operating position.

In the proposed manganese filter building, the water shall first be dosed with sodium hypochlorite to oxidize the manganese and iron in the raw well water. A section of large diameter pipes shall serve as a vessel to provide the minimum contact time required by the manganese filter manufacturer. After passing through the GreensandPlus manganese filters, the water shall pass through a strainer, one of two DEP 4-Log approved UV disinfection units, and then be discharged into an effluent clearwell. Final chlorination, fluoridation, and addition of a polyphosphate blend for general corrosion control shall occur immediately prior to distribution. New VFD controlled, turbine, distribution pumps shall pump the water into the FSWA water distribution system.

Each manganese filter shall automatically backwash based upon one of three methods: 1) elapsed time, 2) time of day, or 3) volume of water treated. Three (3) units will always be in service while the fourth unit is backwashing, or waiting to be placed into service, which will allow backwashing of another unit.

Backwash wastewater shall be discharged into a sloped-floor basin to allow settling, decanting, and recycling of 85% of the backwash volume. The remaining 15% of the backwash wastewater, containing settled manganese particulate, shall be discharged to the FSWA owned Little Swatara Creek WWTP.

JUSTIFICATION OF PROJECT:

The FSWA Public Water System has been experiencing occasional dirty water complaints due to slugs of precipitated manganese. The FSWA also needs additional sources to meet customer demand for potable water. Additionally, the system has had several additions and upgrades over the years which have created a functional, but inefficiently designed system. The age of the system is also adding additional maintenance costs.

Over the years, large slugs of manganese precipitated randomly in the FSWA water system causing periods of light to dark brown water. There has been no pattern to when, where, or how intense they are when they occur. The conditions generally clear within a couple of hours. Samples provided by system customers exhibit varying amounts of manganese and iron precipitate.

Water system professionals, and particularly water treatment chemical experts, believe that it is due to the random mixing of FSWA's raw well water with that of

the City of Lebanon Authority's (CoLA) water. The FSWA Operators and Engineers have performed numerous bench tests to try and recreate the conditions which cause the manganese to precipitate out in the water system, but have been unsuccessful in getting it to occur.

Previously, based upon projected needs for water, the FSWA commissioned the design of a water filtration plant. Due to the inclusion of a proposed surface water source, the Little Swatara Creek, the plant would have to treat surface water as well as that from multiple wells. Reductions in the projected demand, particularly from Bell & Evans, prompted the FSWA to modify their plan to reduce the capacity of the proposed facility and to only treat groundwater sources for iron and manganese removal.

Numerous manganese filtration systems were researched and evaluated prior to selecting the Hungerford & Terry system. Hungerford & Terry was selected for the following reasons:

1) H&T has a long history (>100 years) of providing water filter & conditioning solutions.

2) H&T factory support personnel are close by – New Jersey.

3) The filters have a small footprint compared to other solutions.

4) Power requirements for the filters are very low.

5) The H&T manifold design allows easy and inexpensive plumbing installation and expansion.

6) Skid mounted units are pre-wired, allowing easy and inexpensive installation.

7) The configuration of the units makes maintenance very easy.

8) The only chemical required by the filters is already used by the FSWA and is relatively safe to handle. No permanganate dosing is required.

9) The pre-treatment requirement of the water prior to filters is minimal and the chemical volume requirement is low.

10) Three (3) backwash schemes are available and selectable by the operator.

11) Rejuvenation of the filter media is achieved using backwashing with filtered water and optional air, resulting in long life of the filter media.

12) Approximately 85% of the backwash water can be recycled to the potable water stream.

13) Wasted backwash water volume is very low (<3,500 gpd) and can be sent directly to the WWTP.

14) Proprietary sand valves underdrains are designed to be clog-proof.

15) Systems can be totally enclosed in a building with no roof penetration required (as with some competitors), eliminating the risk of roof leaks.

16) The filter system can run as a “lights out” operation, requiring minimal operator intervention.

WATER USE DATA:

Bethel Township, Lebanon County, PA has experienced mostly single digit growth over the last 4 decades. An interesting note is that the numbers of persons per family and per household have been decreasing over the same decades.

BETHEL TOWNSHIP, LEBANON COUNTY - POPULATION TRENDS				
YEAR	CENSUS POPULATION	% GROWTH	PERSONS PER FAMILY	PERSONS PER HOUSEHOLD
1970	2804			
1980	4042	44%		
1990	4343	7%		2.89
2000	4526	4%	3.19	2.81
2010	5007	11%	3.12	2.73
2020	5253	5%		2.70

Despite relatively low population growth in the Township, water demand in the FSWA water system has been increasing steadily, primarily due to the growth of the poultry industry in the area.

Should the large poultry processors have an issue with their alternate sources, the FSWA could see large demands until the source issues are resolved. Such occurrences are usually short term as the clients want to produce their own water and avoid buying it from the FSWA. They implement repairs to their sources as quickly as possible. Again, should issues arise, the poultry processors are quick to notify the FSWA of changes in their water usage and they work with the FSWA to ensure that all customer demands for water are met.

The FSWA wells are connected to the SCADA system to monitor water levels and daily withdrawal volumes. The wells are shut off close to but under their respective maximum permitted daily volumes.

Unaccounted for water losses on the system are typically very low, on the order of single digit percentages.

FIRE FLOW:

The Insurance Service Office (ISO) ratings methods recommend that Fredericksburg should have an available fire flow of 3,500 gpm for 3 hours. This equates to a requirement of 630,000 gallons of storage for fire flow.

Previously, calculations were performed by Steckbeck Engineering (SESI) to determine if adequate storage volumes were available for equalization, fire flow, and average daily demand. Volume requirements standards from the American Water works Association (AWWA) were used as the basis for comparison. Those calculations led to the construction of the East and West 1-million-gallon towers. The calculations were performed again in 2021 and showed that the FSWA storage is effectively equal to the AWWA recommendations. Another recommendation in the report is that the FSWA begin plans for addition of a third 1-million-gallon tower. That may occur in the future, but it is outside the scope of this permit application.

Upon completion of this project, adding the proposed effluent clearwell will increase the amount of finished water in the FSWA system, resulting in exceeding the AWWA recommendations. The reservoir, which is proposed to be taken out of service, does not contribute to the stored volume because it is the in-process chlorine contact time vessel. The clear well volume shall be approximately 300,000 gallons.

SEWERAGE FACILITIES:

Domestic wastewater from the proposed facility shall be discharged to the Little Swatara Creek Wastewater Treatment Plant (WWTP), which is also owned and operated by the FSWA. The WWTP was recently expanded to a capacity of 650,000 GPD and has sufficient capacity to accept the waste flows from the proposed filter plant.

The WWTP is remotely located from the North Wells and the proposed filter plant site. The filter plant site is, however, located adjacent to where a sewer interceptor was constructed to convey wastewater flows from the Village of Fredericksburg to the Little Swatara Creek WWTP. The WWTP is located on the southern end of the South Fredericksburg area. The South Wells are adjacent to the WWTP, which is situated well outside the well head protection zones.

Settled sludge from the backwash of the Greensand filters shall also be discharged to the WWTP. The amount of discharge is estimated to be less than 3,500 GPD with three filters backwashing each day.

SOURCES OF WATER:

Groundwater withdrawals from FSWA existing Wells 2, 5, and 6 (the North Wells) are authorized under Susquehanna River Basin Commission docket 20060305, approved on March 15, 2006, and valid until March 15, 2031. They have been supplemented by an interconnect with the City of Lebanon Authority.

Two (2) new wells are proposed, FSWA Wells 7 & 8 (the South Wells) which will provide additional water for the system. The following table summarizes the current and proposed withdrawals.

FSWA WATER SOURCE SUMMARY				
WELL	**EXISTING / PROPOSED**	**MAX INST RATE (GPM)**	**30 DAY AVG (GAL)**	**ANNUAL (GAL)**
2	EX	110	65,000	23,725,000
5	EX	70	96,000	35,040,000
6	EX	200	216,000	78,840,000
7 *	PR	115	158,400	57,816,000
8 *	PR	110	136,800	49,932,000
SUBTOTALS		**605**	**672,200**	**245,353,000**
CoLA	EX	595	500,000	182,500,000
TOTALS		**1200**	**1,172,200**	**427,853,000**

***** Final Max instantaneous and 30-Day Average rates for proposed wells 7 and 8 are pending approval by the SRBC.

The Fredericksburg aquifer is a restricted aquifer so additional sources had to be located outside of its area. Proposed Wells 7 & 8 are located south of the restricted aquifer, requiring the water to be pumped north to the proposed filter building. A pipeline from an area to the northwest was once considered but was deemed prohibitively expensive, given the distance and need to cross Interstate 81.

PROPOSED TREATMENT PROCESSES:

The proposed treatment process shall have the following steps:

Water from the FSWA North Wells shall be conveyed to the filter plant via some existing and some new pipelines. Addition of sodium hypochlorite and a

polyphosphate blend at existing Wells 5 and 6 shall be discontinued. Treatment with a polyphosphate blend at the wells would interfere with the filters as it would coat the GreensandPlus, rendering it ineffective.

Water from the FSWA South Wells shall be conveyed to the filter plant where it will be combined with water from the North Wells. The blend shall then be dosed with sodium hypochlorite (chlorine) as it enters a vessel consisting of a larger diameter pipe to slow the water and provide chlorine contact time prior to the water entering the Greensand filters.

The chlorine dosage at the influent of the filter building shall be adjusted to ensure that proper oxidation of iron and manganese is achieved prior to the Greensand filters. The manufacturer requires a minimum of 10 to 20 seconds of chlorine contact time prior to the water entering the Greensand filters. The SCADA system shall adjust the pre-filter chlorine dosing by monitoring the post-filter chlorine residual via an online chlorine analyzer. A proper filter effluent chlorine residual ensures that the dosing is adequate to keep the GreensandPlus filter media healthy.

The water shall enter the Greensand Plus manganese filter system, which consists of four (4) 8’ diameter vessels, three (3) active and one (1) in reserve. GreensandPlus Filtration units (Greensand filters) by Hungerford & Terry are the basis of design. The system shall be sized for a design flowrate of 595 gpm.

As previously stated, the Hungerford & Terry GreensandPlus manganese filters are designed as a modular system which allows for expansion by means of standardized manifolds. Additional treatment vessels may be added to the end of the line by simply lining up the flanges and bolting them together. The plant shall be designed with space and provisions for adding an additional (fifth) filter which would add about 198 gpm of flow or 285,000 gpd.

The filters may be configured to perform air/water washing and backwashing (collectively referred to as backwashing) of the media following one of three (3) different control schemes on a per filter basis: elapsed time, flow volume or differential pressure. They shall initially be set up to backwash based upon the wishes of the operator and/or recommendations of Hungerford & Terry. Air shall be provided by a pair of blowers, one in service and one as a backup. Backwashing may also be performed without the air. As the operators gain experience, they can adjust the backwash scheme to ensure adequate filtration while minimizing power consumption.

Backwash water shall be discharged into a basin under the treatment building after cleansing the media in the filter vessels. The backwash basin shall have a sloped floor which will allow solids to settle and collect at the low end of the basin. Two Recycle Pumps shall be located at the low end of the Backwash Basin. They shall be set at an elevation to prevent pumping of settled sludge. They shall recycle settled backwash “supernatant” back to the influent of the greensand filters. It is estimated that 85% of the backwash water may be

recovered in this manner. Hungerford & Terry recommends that the recycle flow be no more than 10% of the raw water influent flow. The Recycle Pumps shall be VFD driven so they can adjust to proportionally match the influent flow from the wells. The pumps shall auto alternate to balance wear.

Also, at the low end of the backwash basin, two submersible Sludge Pumps shall be installed to pump the settled sludge to the FSWA WWTP. A sump shall be installed at the low end of the basin to better accumulate the solids. One pump shall operate at a time, with the second pump as a backup unit. Auto alternation of the sludge pumps shall be incorporated into the control panel. The flow rate of the sludge pumps shall be fixed at about 15 to 25 GPM. The ON/OFF times of the pumps shall be user adjustable, allowing the Operator to feed the “settled sludge” to the pump station and WWTP at an acceptable rate as they gain experience with the system.

The filtered water shall then pass through a strainer to remove any particles and protect the UV disinfection system.

The water shall then pass through one of two Evoqua ETS SX-425-10 UV disinfection units, one in service and one in reserve. Each unit shall be capable of handling the full combined flow from all wells. The SX-425-10 model specified is DEP approved for 4-Log disinfection at the proposed flow rates.

The filtered and disinfected water shall then be discharged into an effluent clearwell with a maximum volume of approximately 300,000 gallons. The concrete structure shall be constructed by Dutchland, Inc., headquartered in Gap, PA. They are certified to install concrete structures using NSF 61 certified concrete, requiring no other coatings to be applied. Additional baffles shall be installed to channel the water in the clearwell and prevent short-circuiting. The baffles shall also be NSF 61 certified for contact with potable water.

Water from the downstream end of the effluent clearwell shall be pumped to distribution by VFD driven turbine pumps.

Designed for the above the anticipated maximum total well withdrawal of 672,200 GPD, the flow rate through the three active filters may be up to 595 GPM which equates to a maximum daily volume of 856,800 gallons. The maximum backwash volume per day is conservatively estimated at 22,785 gallons, assuming backwashing of the three active filters. At this volume, it is estimated that 19,367 gallons (85%) of the backwash may be recycled with the remaining 3,418 gallons (15%) of “settled sludge” being wasted to the WWTP.

The effluent shall be sampled for chlorine residual and dosed with sodium hypochlorite to bring it up to the Operators specification prior to leaving the building. The effluent shall also be dosed with a polyphosphate blend for general corrosion control prior to leaving the building. A polyphosphate blend shall be injected into the effluent stream of the filter building at the same dosage rates as currently used. The filter building shall include three chemical rooms for the

necessary chemical additions. There shall be two (2) 1,000-gallon sodium hypochlorite tanks, one (1) 500-gallon polyphosphate blend tank, and one (1) 100 to 150-gallon hydrofluorosilicic acid tank, complete with spill containment, tank vents, and day tanks. Spare pumps and parts shall be provided for all pumps, as appropriate and required.

Provisions shall be provided for bulk delivery of all chemicals. A portion of the existing chlorine contact tank of the decommissioned Route 22 WWTP shall be retained and reconfigured to provide over 3,000 gallons of storage for spill containment. It shall be a covered and vented basin which is remotely located downhill from the filter building. Floor drains in each of the chemical rooms and outside at the fill station shall convey spills to the basin. The Standard Operating Procedure (SOP) for the operators shall be to flush and clean out the spill containment basin as soon as possible after any spill. The possibility of rupturing more than one tank at a time is almost nil, so mixing of the chemicals in high concentrations in the basin is not a concern. The drain from the fill station shall have a pair of valves installed to allow diversion of the drain to the WWTP during normal operation. When the station is being used to fill the chemical tanks, the valves shall be reversed to divert any spills into the containment basin. This arrangement will prevent stormwater from accumulating in the containment basin. The drains in the chemical rooms shall always drain into the containment basin.

Multiple new flow meters shall be installed to monitor the system. A PLC control panel shall receive the data from the flow meters and shall be connected to the existing FSWA SCADA system. The following flows shall have meters installed and their data logged to provide average flow rate, maximum flow rate and total flow data. All flow meters not provided by Hungerford & Terry as part of the plug-and-play system shall be Endress & Hauser PROMAG W400 Series meters (or equal) sized as shown below.

Well 6	(4-inch)
Well 7	(4-inch)
Well 8	(4-inch)
North Wells Influent Flow	(4-inch)
South Wells Influent Flow	(4-inch)
Backwash Water Flow	(4-inch)
Recycle Water Flow	(2-inch)
Wasted Sludge Flow	(2-inch)
Clearwell Influent Flow	(6-inch)
Clearwell Effluent Flow	(6-inch)

The proposed flow meters shall supplement those in the existing system at Well 2, Well 5, the CoLA Interconnection pit, and other locations throughout the water system.

The well heads of the North Wells are all higher than the proposed facility site. The well heads of the South Wells are both lower. The finished floor of the facility

shall be slightly higher than the average elevation in the Village of Fredericksburg.

SESI and the FSWA Operations staff performed multiple jar tests to try and determine if there is a specific concentration or range of concentrations of FSWA and CoLA water which leads to the precipitation occurring in the distribution system. After testing numerous mixes from 0ml FSWA / 100ml CoLA to 100ml FSWA / 0ml CoLA, no precipitation results were observed.

The well head at existing Well 6 does not meet current PA DEP design standards as it is in a vault, below grade. As part of this project, the wellhead shall be extended above grade and a small, heated, fiberglass hut shall be installed to house it. A new, air-conditioned control enclosure shall be installed to add a variable frequency drive for the well pump. All related electrical service equipment shall be evaluated and replaced as necessary.

The East Tower currently includes a Tap-App system which uses a large air bubble to mix the water in the tank, circulation pumps which carry chlorine into the tank for adjusting the residual level, and a second set of circulation pumps which were installed with the large fire pumps in the base. These systems are redundant, so the Tap-App system shall be removed. It requires frequent maintenance, so removing it will also save costs for the FSWA.

There is also a Tap-App system in the West Tower. It shall also be removed and replaced with a mechanical mixer in the tank.

PROJECT SITES:

The project will include changes to the FSWA water system at numerous locations including the following:

Existing Decommissioned Route 22 WWTP / Filter Plant Site
Existing West Water Tower
Existing Water Plant and Reservoir
Existing Well 6
Proposed South Wells
Existing East Water Tower

Initial design for a water filtration plant for the FSWA began in 2016. Fifteen (15) potential sites were considered for the project. They were rated based upon anticipated Piping Costs, Utilities Costs, Existing Facilities on Site, Accessibility, Need for Land Acquisition, Environmental Concerns and Rights-of-Way Required. Each of the above criteria was assigned a weighting factor based upon its importance. The potential plant sites were then evaluated for each criterion and assigned a score. The weighting factors were applied, and a total score was obtained for each site. The site of the former FSWA Route 22 WWTP was clearly the best option.

AUTOMATION:

Hungerford & Terry GreensandPlus manganese filters are fully automatic systems which can be left on and will detect influent flow to determine when actions need to take place, such as backwashing. As previously stated, the filters may be configured to perform air/water washing and backwashing (collectively referred to as backwashing) of the media following one of three (3) different control schemes on a per filter basis: elapsed time, flow volume or differential pressure.

The H&T master control panel, all additional flow meters, chemical feed pumps, and all other instrumentation and sensors shall be connected to the FSWA SCADA system to provide the operators with real time information and data logging.

Hungerford & Terry is based in Clayton, NJ and has proven to be very accessible and responsive. H&T shall provide startup support and operator training for their equipment as part of their package.

GES Automation (GES) of Harrisburg, PA designed, installed, and has been supporting the existing SCADA system which controls and monitors the FSWA water system. GES shall be contracted to upgrade the system to incorporate the modifications made under this project and to provide an efficient and integrated system. Experience shows that GES is very easy to contact, and they respond very quickly to resolve issues. To maintain operation of the water system while the upgrades are being installed, GES is an essential provider.

The FSWA operators shall visit the plant at least once per day to ensure proper operation, fill chemical day tanks, take manual readings for certain parameters, and to check on the plant in general. The SCADA system shall notify the operators in the event of any alerts or alarms occurring in the facility. Such events could add to the number of times an operator would visit the plant per day. Plant operation shall be able to be monitored and controlled remotely on the mirror PC at the Little Swatara Creek or on a tablet.

WASTE DISPOSAL:

The proposed project is expected to generate 22,785 gallons of backwash water per day, assuming each of the three active filters performs a backwash cycle per day. The nature of the backwash water allows the operator to settle it in a sloped-floor backwash basin. 85% of the total backwash volume (19,367 gallons) may be decanted and recycled to the influent of the filters, at a rate not to exceed 10% of the raw well water flow rate. The remaining 15% of the backwash, calculated to be approximately 3,418 gallons per day of “settled sludge”, shall be discharged

to the FSWA sanitary sewer system, and be treated at the FSWA Little Swatara Creek WWTP.

SOIL, GROUNDWATER CONDITIONS, AND FOUNDATION PROBLEMS:

Experience with numerous pipeline installations and extensions in the Fredericksburg area does not raise concerns for this project. Some rock may be encountered but, in general, digging should be easy.

At the plant site, a geotechnical study performed in December 2022 by ECS Mid-Atlantic, LLC showed no bedrock down to a depth of 25 feet. Excavation for the proposed structure is expected to be no deeper than 12 feet. The report states that the soils at the foundation bearing level are anticipated to be suitable for support of the proposed structure.

Additionally, the bore holes were left open for about three hours to observe signs of groundwater seepage. None was detected. It is not expected that groundwater levels will rise to a point of becoming an issue, even during extreme wet weather events.

FUTURE EXTENSIONS:

The South Fredericksburg service area is currently served by wastewater only but adding water service to the region has been discussed on several occasions. There is currently no plan or schedule for when that expansion might occur.

SUMMARY:

The FSWA Public Water System has been experiencing occasional dirty water complaints due to slugs of precipitated manganese. The FSWA also needs additional sources to meet customer demand for potable water. Additionally, the system has had several additions and upgrades over the years which have created a functional, but inefficiently designed system. The age of the system is also adding additional maintenance costs.

The proposed manganese filtration facility, addition of two additional ground water sources, and numerous other modifications to the FSWA Public Water System will provide better quality water to the customers, remove manganese and avoid precipitation events, simplify the overall system, save energy, reduce the dependency on the CoLA Interconnection, increase available storage volume, and reduce maintenance costs.