

DATE: February 3, 2020
TO: Matt Jordan, General Manager
FROM: Kenneth R. Herd, Chief Science & Technical Officer *KRH*
SUBJECT: Long-term Master Water Plan Feasibility Studies - *Status Report*

SUMMARY

In December 2018, the Tampa Bay Water Board approved the 2018 Long-term Master Water Plan Update which included recommendations. One of the recommendations was approval of further feasibility studies of the top-three ranked projects. This agenda item provides an update on those feasibility studies.

RECOMMENDATION

Receive Status Report

COST/FUNDING SOURCE

N/A

DISCUSSION

The 2018 Long-term Master Water Plan (Plan) was approved in December 2018. The Plan included several recommendations including further study of three top-ranked water supply projects to meet the region's future water supply needs. Below is a summary of each project, work completed to date and future activities.

Surface Water Treatment Plant Expansion: Feasibility Study (Project 09014)

The Surface Water Treatment Plant Expansion Feasibility Study purpose is to further assess the feasibility of expanding the existing Regional Surface Water Treatment Plant and increasing the use of associated surface water supplies to maximize the available yield of surface water supplies. The project will also evaluate an alternative location for a new surface water treatment plant near the C.W. Bill Young Regional Reservoir, including the inventorying of anticipated risks and benefits associated with that location. The overall objective of the project is to evaluate the feasibility of increasing Tampa Bay Water's annual average yield of surface water supplies by 10 to 12.5 million gallons per day (mgd).

mf

Work Completed to Date:

- Created summary of finished water quality targets for the Regional Surface Water Treatment Plant, spanning State and Federal requirements, as well as contractual requirements.
- Reviewed historical operational and water quality data to assess treatment process performance at the Regional Surface Water Treatment Plant.
- Identified source water quality characteristics that directly or indirectly challenge finished water compliance at the Regional Surface Water Treatment Plant.
- Reviewed historical source water quality data to determine how limiting source water quality characteristics could be incorporated into the systemwide reliability model.
- Completed site visit, inspections, and interviews related to condition assessment and operations audit.

Upcoming Work:

- Develop bench- and pilot-testing concepts based on insights gained from site visits, inspections, and interviews.
- Initiate work for the systemwide reliability model.

Desalination Treatment Plant Expansion: Feasibility Study (Project 09015)

The Desalination Treatment Plant Expansion Feasibility Study purpose is to further assess the feasibility of expanding the existing Tampa Bay Desalination Water Treatment Plant to maximize the available yield of Tampa Bay Water's regional water supplies. This project would leverage the existing facility as much as possible for meeting projected regional water demands, as well as inform design decisions for the future expansion. The overall objective of the project is to evaluate the feasibility of increasing Tampa Bay Water's available desalinated seawater supply by 10 – 12.5 mgd.

Work Completed to Date:

- Reviewed operational, maintenance, and other relevant data to assess treatment process performance at the Desalination Treatment Plant.
- Completed site visits, inspections, and interviews related to the condition assessment of the existing Desalination Treatment Plant.
- Developed preliminary pilot testing plans, schematics, and pre-treatment processes.
- Began discussion with Florida Department of Environmental Protection (FDEP) and Hillsborough County Environmental Protection Commission (HCEPC) regarding the National Pollutant Discharge Elimination System (NPDES) permitting for pilot operations at the Desalination Treatment Plant.

Upcoming Work:

- Complete the condition assessment of the existing Desalination Treatment Plant.
- Select pre-treatment technologies to test and finalize the pilot test design and plan.
- Continue discussions with FDEP and HCEPC to satisfy NPDES permit requirements.
- Conduct water quality review by gathering information from relevant staff and sources.

New Wellfield via SHARP Credits: Feasibility Study (Project 01611)

The New Wellfield via SHARP Credits Feasibility Study purpose is to further assess the feasibility of developing a new wellfield and associated collection mains and water treatment facilities using credits from the injection of reclaimed water by Hillsborough County. The feasibility project includes a test production well and monitor wells, aquifer performance test, wellfield modeling and water use permit application, collector main layout and water treatment facilities required to meet Exhibit D of the Master Water Supply Contract and finalized negotiations with Hillsborough County for aquifer recharge credits, which in total will enable Tampa Bay Water to determine the cost and capacity of the new wellfield. The overall objective of the project is to evaluate the feasibility of increasing Tampa Bay Water's available groundwater supply by 7.5 mgd.

Work Completed to Date:

- Hydrogeologic Consultant is currently designing well specifications for the test well and monitoring wells.
- Preliminary investigation of potential properties for a test well site is on-going.

Upcoming Work:

- Tampa Bay Water's as-needed well drillers will provide in-house bids for construction of the test and monitoring wells.
- Property purchase options will be presented for Board consideration as they become available. It is expected that during the Spring timeframe, Tampa Bay Water will obtain needed property for the test well. The procurement for the construction of the test well is scheduled for the Fall 2020 timeframe.
- Tampa Bay Water is working with the member government utility directors and the Board to continue discussions on the cost of reclaimed water credits.

Future Board Decision

The Desalination Plant Expansion Feasibility Study and the New Groundwater Wellfield via SHARP credits are scheduled to be completed by December of 2021. The Surface Water Treatment Plant Expansion Feasibility Study is scheduled to be completed by December 2020.

Tampa Bay Water staff will continue updating the member government utility directors and the Board as these feasibility studies move forward. Following completion of these feasibility studies, the Board will be positioned to evaluate project alternatives during 2022 with a project selection needed by the beginning of 2023. These feasibility studies are scheduled to be available at the same time the Regional Water Quality Study 2020-2021 findings will be available for Board consideration. This will allow all of these potential capital improvement projects to be simultaneously considered relative to future debt service obligations.

BACKGROUND

The 2018 Long-term Master Water Plan was approved in December 2018. The Plan included several recommendations including further study of three top-ranked water supply projects to meet the region's future water supply needs. These projects were approved for further feasibility study to be performed during the 2023 Plan cycle. Once completed, the feasibility studies will help in the development of a recommendation for the eventual selection and construction timing of one or more projects.

The three projects are:

1. New Wellfield via SHARP Credits
2. Surface Water Treatment Plant Expansion
3. Desalination Treatment Plant Expansion

In October 2019, the Board approved Contract 2020-011 with Black & Veatch for the Tampa Bay Desalination Water Treatment Plant Expansion Feasibility Study (\$2,900,000), and Contract 2020-012 with Hazen & Sawyer for the Surface Water Treatment Plant Expansion Feasibility Study (\$695,000). In addition to these two contracts, the Board approved a task order to HSW Engineering (\$291,495) for support services for the New Wellfield via net Benefit from SHARP project to assist the agency with a test well that will help determine the potential quantity of water that could be obtained from the new wellfield, as well as establish existing water quality parameters.

The Desalination Treatment Plant Expansion Feasibility project is being funded with uniform rate funds and co-funding by the Southwest Florida Water Management District in the amount of \$1,450,000. The Surface Water Treatment Plant Expansion Feasibility project is being funded with uniform rate funds and co-funded by the Southwest Florida Water Management District in the amount of \$275,000.