

CFWI Reclaimed Water Sub-Team Work Plan

Project Name: City of Kissimmee West Ditch Stormwater Capture for Reuse Augmentation (Toho Water Authority)

Project RWSP Number: 59

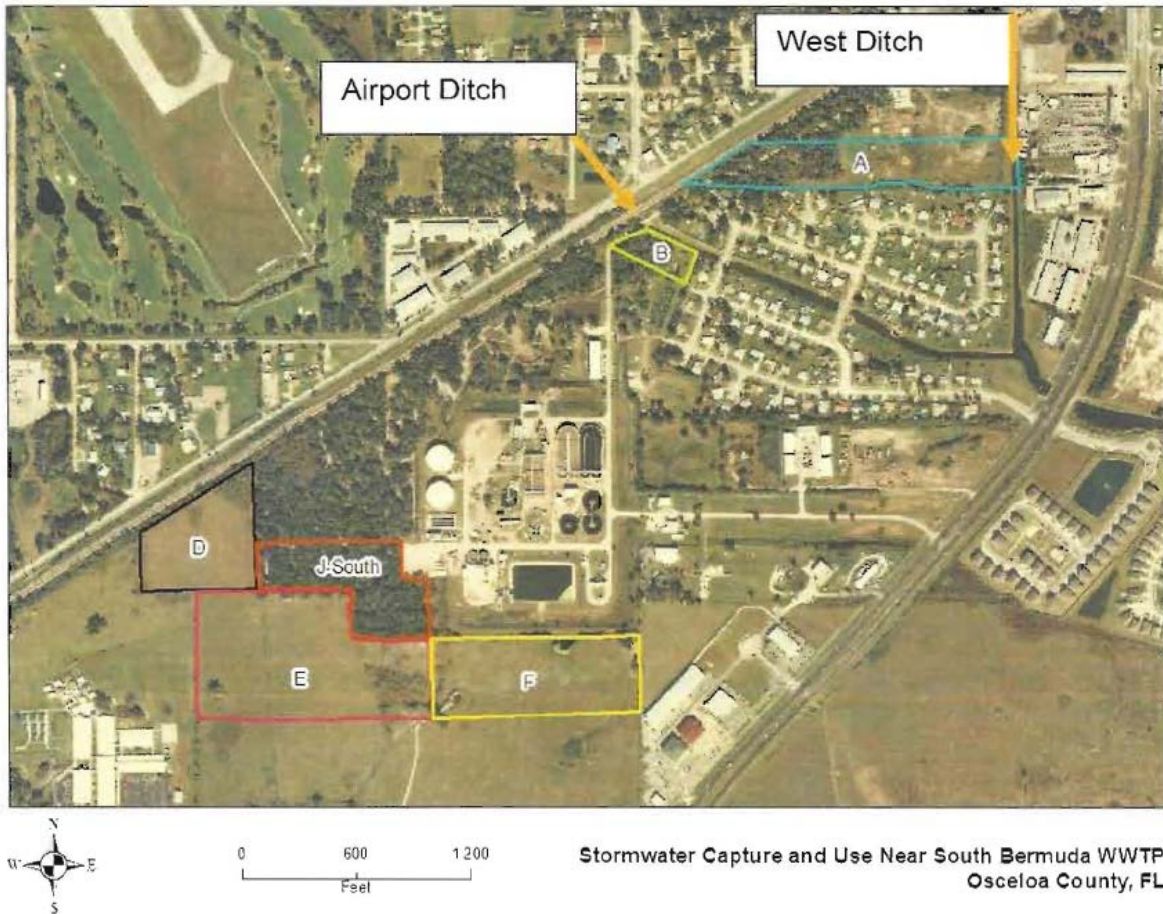
1. Project Description

This project is one of several being evaluated to meet the anticipated demand by capturing and managing stormwater from several small properties near Toho Water Authority's (TWA's) South Bermuda Water Reclamation Facility (SBWRF). The TWA currently has a surface water treatment system located at the SBWRF for water withdrawals from Shingle Creek. The stormwater capture system would be used to further supplement the alternative water supply on an as-available basis.

Currently, the City of Kissimmee's West Ditch City basin drains stormwater to Lake Tohopekaliga through a system of ditches and a canal. TWA is planning to collect water from the West Ditch City canal and route it through a series of interconnected ponds to provide stormwater as a reuse supplementation at the SBWRF. It was determined that on average, approximately 1.5 million gallons per day (MGD) of stormwater runoff would be available 60 percent of the time, with a peak rate of 2.5 MGD.

The Total Capital Costs for the project is approximately \$28,200,000. Most of the cost is for the construction of the storage ponds.

It is assumed that this project will not be necessary until development resumes. Additionally, the project timing will be adjusted based on the results of the CFWI effort.



2. Cost-Benefit Analysis of Yield

Total Capital Cost: \$28,187,247

Yield: 1.5 million gallons per day, on average, available 60 percent of the time

3. Cost Estimate

Non-Construction: \$4,697,874

Construction: \$23,489,372

O&M: \$445,792 per year

4. Water Resource Constraints

Currently, the West Ditch City basin drains stormwater to Lake Tohopekaliga through a system of ditches and a canal. TWA is planning to collect water from the West Ditch City canal and route it through a series of interconnected ponds to provide stormwater as an alternate water supply for reuse supplementation to the South Bermuda Water Reclamation Facility service area. A study-level analyses determined that, on average, approximately 1.5 million gallons per day (MGD) of stormwater runoff, with a peak rate of 2.5 MGD would be available approximately 60% of the time. This yield assumes relatively high runoff rates based on the available land use and soil information for the watershed and that pond seepage would be controlled to a relatively low value. It also assumes a high stormwater capture rate from the drainage ditches around the potential pond sites.

5. Potential Partners and Governance Options

The stormwater captured at the South Bermuda Water Reclamation Facility (SBWRF) would be used to supplement reclaimed water at the facility's reuse system. The proposed project would also serve as a stormwater treatment system for the City of Kissimmee.

6. Pumping, Storage and Transmission Configurations

The project concept is to collect water from the West Ditch City canal and route it through a series of interconnected ponds to provide stormwater as a reuse supplementation at the South Bermuda Water Reclamation Facility (SBWRF). The TWA already has a surface water treatment system located at the SBWRF for water withdrawals from Shingle Creek. Therefore, pumping, storage, and transmission configurations at the treatment facility would not need to be altered for this project.

7. Project Feasibility and Estimated Property Requirements

In 2008/2009 a consultant performed a preliminary evaluation to determine the feasibility for capturing and managing stormwater near the South Bermuda Water

Reclamation Facility. The feasibility analyses estimated the available stormwater runoff and a planning-level budgetary estimate. An agreement with the City of Kissimmee would be needed for this project.

The TWA is assuming that this project will not be necessary until growth and development resumes in the area. It is possible that ahead of reuse demands, this stormwater could be captured and distributed to rapid infiltration basins for aquifer recharge. Project timing will be adjusted based on the results of the CFWI efforts.

Property and/or easements will be needed to collect water from the West Ditch City canal and route it to the South Bermuda Water Reclamation Facility (SBWRF). If all the property shown in the map above is necessary for the project, a total of about 55 acres would be required. It is assumed that the land required for storage ponds would be an in-kind service provided by the City of Kissimmee.

8. Funding Sources

Potential funding sources or in-kind services for this project include the Toho Water Authority, any benefiting neighboring utilities, the City of Kissimmee, Osceola County, the South Florida Water Management District and/or State of Florida as a cost-share partner, and other sources that might be identified through the CFWI solution phase.

9. Regional Water Supply Project Limitations/Constraints from Rule

Inconsistency

Not applicable

10. Other Considerations (Public Concerns, Non-Technical Obstacles)

Possible issues with attracting birds into the airport flight paths. A permit from the Federal Aviation Administration may be required.

11. Estimated Implementation Schedule

It is assumed that this project will not be necessary until growth and development in the area resumes. Additionally, the project timing will be adjusted based on

the results of the CFWI groundwater availability analysis. TWA's FYE 2015-19 Capital Improvement Plan stated that the start of project construction will be budgeted for FYE 2020, or as appropriate based on the CFWI results.