

1.0 Project Purpose and Objectives Narrative

The City of Valdosta's Withlacoochee WPCP was constructed in 2016. The plant is rated for a maximum monthly average daily flow (MMADF) of 12 mgd and a maximum daily flow (MDF) of 22 mgd. Plant components include a 6 million gallon equalization basin, sequencing batch reactors (SBR) system, tertiary filtration cloth media filters, chlorination and dechlorination systems, a chemical feed system for phosphorus removal, and a dewatering system.

In December 2018, the Valdosta area received a significant amount of intensive rainfall for several days causing plant influent to spike to 37 mgd for an extended period due to a surge of inflow and infiltration (I/I) within the system. Plant operators immediately began diverting flow into the equalization basin. As the rainfall duration and intensity continued over the period, heavily diluted plant influent flow remained at unprecedented levels, eventually causing the equalization basin to overflow.

The City of Valdosta continues implementation of a program developed during recent years to address I/I in the wastewater collection system. Due to the time required for and cost magnitude of construction of the improvements required to continue addressing the I/I, the City proposes to construct additional equalization capacity at the plant as a stop-gap strategy to reduce the potential for overflows at the plant.

The project will involve extension of a 36-inch gravity overflow line from the existing equalization basin that directs overflow wastewater to a new, lined 7.26 million gallon secondary equalization basin. A return pump system will also be constructed that will pump wastewater from the secondary equalization basin to the existing basin.

A site plan is included in the Appendix.

2.0 Basis of Design

The basis of design for the secondary equalization basin is as follows:

- 1: Utilize the existing topography of the plant site to gravity flow from the existing equalization basin to the new basin to avoid the cost and maintenance of pumping.
- 2: Maximize the available space at the plant site for installation of a lined basin in lieu of constructing more costly tankage.

The following flow balance is referenced from Table 3 in the 2014 DDR for the New Withlacoochee WPCP:

	MMADF (mgd)	MDF (mgd)	PHF (mgd)
Flow Into Headworks	12.0	18.0	38.0
Return and Added Flow From Plant	0.4	0.5	1.3
Total Flow to Headworks	12.4	18.5	39.3
Controlled Max Flow to SBRs	22.0	22.0	22.0
Flow to Equalization Basin	0	0	17.3