TETRA TECH

Memo

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From:	Tetra Tech
Date:	November 6, 2025
Subject:	Task 1. Inventory Available Data for the Lake Okeechobee Watershed Model Development

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1.0 INTRODUCTION

Tetra Tech was contracted by the Florida Department of Environmental Protection (DEP) to develop and calibrate Hydrological Simulation Program – FORTRAN (HSPF) models for the Lake Okeechobee Watershed. The watershed currently has a Watershed Assessment Model (WAM) and DEP would like an HSPF model to have one consistent modeling platform for the Northern Everglades basin management action plans (BMAPs). In 2017, Tetra Tech completed an update to the Caloosahatchee River and Estuary HSPF model and began a new update in 2024. The Lake Okeechobee Watershed HSPF model will be developed using a process that is consistent with the Caloosahatchee River and Estuary HSPF model development.

Lake Okeechobee and its watershed have undergone hydrologic, land use, and other anthropogenic changes that have degraded its water quality and impacted the water quality of the connected Caloosahatchee and St. Lucie Rivers and Estuaries (DEP, 2020). The goal of this project is to prepare a suite of HSPF models that represent total nitrogen (TN) and total phosphorus (TP) loading throughout the watershed to estimate the nutrient load reaching Lake Okeechobee. DEP will use the model results in a future update to Lake Okeechobee BMAP. Task 1, which is presented in this memo, was gathering and inventorying available data calendar years 2008 through 2023 (using 2008 for model spin up) for the HSPF model hydrology and water quality setup, calibration, and validation.

2.0 TASK 1. INVENTORY AVAILABLE DATA

The following sections summarize the data and literature sources gathered for model setup, calibration, and validation.

2.1 LAND USE

2.1.1 Land Use and Land Cover (LULC) Coverage

Tetra Tech downloaded the publicly available land use land cover (LULC) 2020–2023 DEP Statewide Land Use Land Cover (DEP, 2025) and 2023 National Land Cover Dataset (NLCD) shapefile coverage for impervious land uses (MRLC, 2023). Tetra Tech received Florida Statewide Agricultural Irrigation Demand (FSAID) 12 directly from Florida Department of Agriculture and Consumer Services (FDACS) that included updated agricultural land uses. The Florida Department of Transportation (FDOT) provided a shapefile coverage of their roads and rights-of-way (ROW). Tetra Tech combined all four coverages to develop a land use land cover for the Lake Okeechobee Watershed HSPF models. Tetra Tech reduced the total number of land use classifications represented in the model by grouping similar land uses (i.e., all SFWMD 1100 level land use classifications were grouped together as Low Density Residential), following the approach used in the Caloosahatchee River and Estuary model (***Table 1***) and FDACS cross walked agricultural land uses to the established numeric land use codes (***Table 2***) for the FSAID12 coverage. A total of 18 separate pervious land uses were identified in the watershed (***Figure 1*** and ***Table 3***). The reduced land use classifications will be used to assign runoff and nutrient loads in the Lake Okeechobee Watershed HSPF model.

Table 1. DEP statewide land use reduced group reclassification

Code	Description	Numeric Land Use Code	Numeric Land Use Code Description
1100	Residential, Low Density	1	Low Density Residential
1110	Fixed Single Family Units	1	Low Density Residential

Code	Description	Numeric Land Use Code	Numeric Land Use Code Description
1120	Mobile Home Units	1	Low Density Residential
1130	Mixed Units	1	Low Density Residential
1180	Rural Residential	1	Low Density Residential
1190	Low Density Under Construction	1	Low Density Residential
1210	Fixed Single Family Units	2	Medium Density Residential
1220	Mobile Home Units	2	Medium Density Residential
1230	Mixed Units	2	Medium Density Residential
1290	Medium Density Under Construction	2	Medium Density Residential
1300	Residential, High Density	3	High Density Residential
1310	Fixed Single Family Units	3	High Density Residential
1320	Mobile Home Units	3	High Density Residential
1330	Multiple Dwelling Units, Low Rise	3	High Density Residential
1340	Multiple Dwelling Units, High Rise	3	High Density Residential
1350	Mixed Units	3	High Density Residential
1390	High Density Under Construction	3	High Density Residential
1400	Commercial and Services	4	Commercial / Institutional / Transportation
1411	Shopping Centers	4	Commercial / Institutional / Transportation
1423	Wholesale Sales & Services-Junk Yards	4	Commercial / Institutional / Transportation
1460	Oil and Gas Storage	4	Commercial / Institutional / Transportation
1490	Commercial and Services Under Construction	4	Commercial / Institutional / Transportation
1700	Institutional	4	Commercial / Institutional / Transportation
1710	Educational Facilities	4	Commercial / Institutional / Transportation
1730	Military	4	Commercial / Institutional / Transportation
1760	Correctional	4	Commercial / Institutional / Transportation
1830	Race Tracks	4	Commercial / Institutional / Transportation
1850	Parks and Zoos	4	Commercial / Institutional / Transportation
1860	Community Recreation Facilities	4	Commercial / Institutional / Transportation
1870	Stadiums	4	Commercial / Institutional / Transportation
1890	Other Recreational Facilities	4	Commercial / Institutional / Transportation
1500	Industrial	6	Industrial / Extractive
1540	Oil and Gas Processing	6	Industrial / Extractive
1550	Other Light Industry	6	Industrial / Extractive
1560	Other Heavy Industry	6	Industrial / Extractive
1600	Extractive	6	Industrial / Extractive
1610	Strip Mines	6	Industrial / Extractive
1620	Sand and Gravel Pits	6	Industrial / Extractive

Code	Description	Numeric Land Use Code	Numeric Land Use Code Description
1630	Rock Quarries	6	Industrial / Extractive
1640	Oil and Gas Fields	6	Industrial / Extractive
1650	Reclaimed Lands	6	Industrial / Extractive
1660	Holding Ponds	6	Industrial / Extractive
1670	Abandoned Mining Lands	6	Industrial / Extractive
7420	Borrow Areas	6	Industrial / Extractive
7430	Spoil Areas	6	Industrial / Extractive
8100	Transportation	6	Industrial / Extractive
8110	Airports	6	Industrial / Extractive
8113	Private Airports	6	Industrial / Extractive
8120	Railroads and Railyards	6	Industrial / Extractive
8140	Roads and Highways	6	Industrial / Extractive
8150	Port Facilities	6	Industrial / Extractive
8180	Auto Parking Facilities	6	Industrial / Extractive
8200	Communications	6	Industrial / Extractive
8300	Utilities	6	Industrial / Extractive
8310	Electrical Power Facilities	6	Industrial / Extractive
8311	Solar Power Farms	6	Industrial / Extractive
8330	Water Supply Plants	6	Industrial / Extractive
8340	Sewage Treatment	6	Industrial / Extractive
8350	Solid Waste Disposal	6	Industrial / Extractive
8360	Other Treatment Ponds	6	Industrial / Extractive
8370	Transportation, Communication and Utilities – Miscellaneous	6	Industrial / Extractive
1480	Cemeteries	7	Developed Open Space / Disturbed
1800	Recreational	7	Developed Open Space / Disturbed
1810	Swimming Beach	7	Developed Open Space / Disturbed
1820	Golf Course	7	Developed Open Space / Disturbed
1900	Open Land	7	Developed Open Space / Disturbed
1920	Inactive Land	7	Developed Open Space / Disturbed
7200	Sand Other Than Beaches	7	Developed Open Space / Disturbed
7300	Exposed Rock	7	Developed Open Space / Disturbed
7400	Disturbed Land	7	Developed Open Space / Disturbed
7470	Dikes and Levees	7	Developed Open Space / Disturbed
8115	Grass Airports	7	Developed Open Space / Disturbed
8320	Electrical Power Transmission Lines	7	Developed Open Space / Disturbed
2156	Sugar Cane	8	Sugar Cane

Code	Description	Numeric Land Use Code	Numeric Land Use Code Description
2100	Cropland and Pastureland	9	Row and Field Crops
2140	Row Crops	9	Row and Field Crops
2150	Field Crops	9	Row and Field Crops
2160	Mixed Cane	9	Row and Field Crops
2400	Nurseries and Vineyard	10	Nurseries, Ornamentals, and Vineyards
2410	Tree Nurseries	10	Nurseries, Ornamentals, and Vineyards
2420	Sod Farms	10	Nurseries, Ornamentals, and Vineyards
2430	Ornamentals	10	Nurseries, Ornamentals, and Vineyards
2200	Tree Crops	11	Citrus Groves / Other Groves
2210	Citrus Groves	11	Citrus Groves / Other Groves
2230	Other Groves	11	Citrus Groves / Other Groves
2110	Improved Pastures	12	Improved Pasture
2300	Feeding Operations	12	Improved Pasture
2310	Cattle Feed Operations	12	Improved Pasture
2320	Poultry Feeding Operations	12	Improved Pasture
2500	Specialty Farms	12	Improved Pasture
2510	Horse Farms	12	Improved Pasture
2520	Dairies	12	Improved Pasture
2540	Aquaculture	12	Improved Pasture
2120	Unimproved Pastures	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
2130	Woodland Pastures	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
2600	Other Open Lands	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
3100	Herbaceous (Dry Prairie)	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
3200	Upland Shrub and Brushland	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
3210	Palmetto Prairies	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
3220	Coastal Shrub	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
3230	Abandoned Groves	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
3300	Mixed Rangeland	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
4100	Upland Coniferous Forests	14	Upland Forests
4110	Pine Flatwoods	14	Upland Forests
4120	Longleaf Pine-Xeric Oak	14	Upland Forests
4130	Sand Pine	14	Upland Forests
4140	Pine-Mesic Oak	14	Upland Forests
4200	Upland Hardwood Forests	14	Upland Forests
4210	Xeric Oak	14	Upland Forests
4220	Brazilian Pepper	14	Upland Forests
4240	Melaleuca	14	Upland Forests

Code	Description	Numeric Land Use Code	Numeric Land Use Code Description
4270	Live Oak	14	Upland Forests
4271	Oak-Cabbage Palm Forests	14	Upland Forests
4280	Cabbage Palm	14	Upland Forests
4300	Upland Mixed Forests	14	Upland Forests
4340	Upland Mixed Coniferous/Hardwood	14	Upland Forests
4370	Australian Pine	14	Upland Forests
4400	Tree Plantation	14	Upland Forests
4410	Coniferous Plantations	14	Upland Forests
4420	Hardwood Plantations	14	Upland Forests
4430	Forest Regeneration Areas	14	Upland Forests
1840	Marinas and Fish Camps	15	Wetlands
6100	Wetland Hardwood Forest	15	Wetlands
6110	Bay Swamps	15	Wetlands
6111	Bayhead	15	Wetlands
6120	Mangrove Swamp	15	Wetlands
6150	Stream and Lake Swamps (bottomland)	15	Wetlands
6170	Mixed Wetland Hardwood	15	Wetlands
6172	Mixed Shrubs	15	Wetlands
6180	Cabbage Palm Wetland	15	Wetlands
6191	Wet Melaleuca	15	Wetlands
6200	Wetland Coniferous Forests	15	Wetlands
6210	Cypress	15	Wetlands
6215	Cypress-Domes/Heads	15	Wetlands
6216	Cypress-Mixed Hardwoods	15	Wetlands
6240	Cypress-Pine-Cabbage Palm	15	Wetlands
6250	Wet Pinelands Hydric Pine	15	Wetlands
6260	Pine Savannah	15	Wetlands
6300	Wetland Forested Mixed	15	Wetlands
6400	Vegetated Non-Forested Wetlands	15	Wetlands
6410	Freshwater Marshes	15	Wetlands
6411	Freshwater Marshes-Sawgrass	15	Wetlands
6420	Saltwater Marshes	15	Wetlands
6430	Wet Prairie	15	Wetlands
6440	Emergent Aquatic Vegetation	15	Wetlands
6460	Mixed Scrub-shrub Wetland	15	Wetlands
6500	Non-vegetated Wetland	15	Wetlands

Code	Description	Numeric Land Use Code	Numeric Land Use Code Description
6510	Tidal Flats	15	Wetlands
6530	Intermittent Ponds	15	Wetlands
5110	Natural River, Stream, Waterway	16	Water
5120	Channelized Waterways, Canals	16	Water
5200	Lake	16	Water
5300	Reservoirs	16	Water
5410	Embayment Opening to Gulf	16	Water
5420	Embayment Not Opening to Gulf	16	Water
5430	Saltwater Ponds	16	Water
5600	Slough Waters	16	Water
5710	Atlanta Ocean	16	Water
5720	Gulf of Mexico	16	Water
2240	Abandoned Groves	18	Agriculture Fallow
2610	Fallow Cropland	18	Agriculture Fallow

Table 2. FDACS land use reduced group reclassification

Crop	Numeric Land Use Code	Numeric Land Use Code Description
Sugarcane	8	Sugar Cane
Bahiagrass	9	Row and Field Crops
Beans, Peas	9	Row and Field Crops
Bermudagrass	9	Row and Field Crops
Blueberries	9	Row and Field Crops
Cabbage	9	Row and Field Crops
Caladium	e	Row and Field Crops
Cantaloupe	9	Row and Field Crops
Corn	9	Row and Field Crops
Corn, Potatoes	9	Row and Field Crops
Corn, Sorghum, Rye	9	Row and Field Crops
Corn Silage	9	Row and Field Crops
Cropland, Pastureland	9	Row and Field Crops
Dry Beans	9	Row and Field Crops
Field Corn	9	Row and Field Crops
Field Crops	9	Row and Field Crops
Greens	9	Row and Field Crops
Hay	9	Row and Field Crops

Crop	Numeric Land Use Code	Numeric Land Use Code Description
Melons	9	Row and Field Crops
Mixed Crops	9	Row and Field Crops
Oats	9	Row and Field Crops
Pasture	9	Row and Field Crops
Peanuts	9	Row and Field Crops
Peppers	9	Row and Field Crops
Perennial Peanuts	9	Row and Field Crops
Potatoes	9	Row and Field Crops
Potatoes, Watermelon	9	Row and Field Crops
Radish, Lettuce	9	Row and Field Crops
Radish	9	Row and Field Crops
Row Crops	9	Row and Field Crops
Small Vegetable	9	Row and Field Crops
Small Vegetable, Tomatoes	9	Row and Field Crops
Small Vegetable Fall, Small Vegetable Spring	9	Row and Field Crops
Strawberries, Tomatoes	9	Row and Field Crops
Sweet Corn	9	Row and Field Crops
Tomatoes	9	Row and Field Crops
Vegetables	9	Row and Field Crops
Watermelon	9	Row and Field Crops
Bamboo	10	Nurseries, Ornamentals, and Vineyards
Container Nursery	10	Nurseries, Ornamentals, and Vineyards
Field Nursery	10	Nurseries, Ornamentals, and Vineyards
Grapes	10	Nurseries, Ornamentals, and Vineyards
Greenhouse Nursery	10	Nurseries, Ornamentals, and Vineyards
Nursery	10	Nurseries, Ornamentals, and Vineyards
Ornamentals	10	Nurseries, Ornamentals, and Vineyards
Palm Nursery	10	Nurseries, Ornamentals, and Vineyards
Sod	10	Nurseries, Ornamentals, and Vineyards
Tree Nurseries	10	Nurseries, Ornamentals, and Vineyards
Tropical Fruit	10	Nurseries, Ornamentals, and Vineyards
Citrus	11	Citrus Groves / Other Groves
Lemons	11	Citrus Groves / Other Groves
Longan	11	Citrus Groves / Other Groves
Lychee	11	Citrus Groves / Other Groves
Macadamia	11	Citrus Groves / Other Groves

Crop	Numeric Land Use Code	Numeric Land Use Code Description
Mangos	11	Citrus Groves / Other Groves
Other Groves	11	Citrus Groves / Other Groves
Peaches	11	Citrus Groves / Other Groves
Pongamia	11	Citrus Groves / Other Groves
Tropical Fruit	11	Citrus Groves / Other Groves
Aquaculture	12	Improved Pasture
Cattle Feeding Operations	12	Improved Pasture
Cropland, Pastureland	12	Improved Pasture
Dairy	12	Improved Pasture
Gator Farm	12	Improved Pasture
Grass Pasture	12	Improved Pasture
Horse Farms	12	Improved Pasture
Improved Pastures	12	Improved Pasture
Livestock	12	Improved Pasture
Poultry	12	Improved Pasture
Poultry, Bees, Tropical Fish	12	Improved Pasture
Poultry Feeding Operations	12	Improved Pasture
Specialty Farms	12	Improved Pasture
Tropical Fish Farms	12	Improved Pasture
Wildlife Strip Crops	12	Improved Pasture
Brushland, Shrub	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
Cropland, Pastureland	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
Herbaceous (Dry Prairie)	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
Open Lands	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
Rangeland	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
Tropical Fruit	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
Unimproved Pastures	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
Woodland Pastures	13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub
Cotton	15	Wetlands
Cropland, Pastureland	15	Wetlands
Seasonal Grazing	17	Agriculture Wetland
Fallow	18	Agriculture Fallow
Fallow Aquaculture	18	Agriculture Fallow
Fallow Avocados	18	Agriculture Fallow
Fallow Blueberries	18	Agriculture Fallow
Fallow Cabbage Palms	18	Agriculture Fallow
Fallow Caladium	18	Agriculture Fallow

Crop	Numeric Land Use Code	Numeric Land Use Code Description
Fallow Citrus	18	Agriculture Fallow
Fallow Container Nursery	18	Agriculture Fallow
Fallow Field Corn	18	Agriculture Fallow
Fallow Field Nursery	18	Agriculture Fallow
Fallow Grapes	18	Agriculture Fallow
Fallow Greenhouse Nursery	18	Agriculture Fallow
Fallow Hay	18	Agriculture Fallow
Fallow Horse Farms	18	Agriculture Fallow
Fallow Mangos	18	Agriculture Fallow
Fallow Melons	18	Agriculture Fallow
Fallow Melons, Tomatoes	18	Agriculture Fallow
Fallow Melons, Zucchini	18	Agriculture Fallow
Fallow Nurseries, Vineyards	18	Agriculture Fallow
Fallow Nursery	18	Agriculture Fallow
Fallow Ornamentals	18	Agriculture Fallow
Fallow Palm Nursery	18	Agriculture Fallow
Fallow Peaches	18	Agriculture Fallow
Fallow Potatoes	18	Agriculture Fallow
Fallow Small Vegetable	18	Agriculture Fallow
Fallow Small Vegetable Fall, Small Vegetable Spring	18	Agriculture Fallow
Fallow Sod	18	Agriculture Fallow
Fallow Sorghum	18	Agriculture Fallow
Fallow Sugarcane	18	Agriculture Fallow
Fallow Sweet Corn	18	Agriculture Fallow
Fallow Tomatoes	18	Agriculture Fallow
Fallow Tree Crops	18	Agriculture Fallow
Fallow Tree Nurseries	18	Agriculture Fallow
Fallow Tropical Fruit	18	Agriculture Fallow
Fallow Vegetables	18	Agriculture Fallow
Fallow Watermelon	18	Agriculture Fallow
Fallow Woodland Pastures	18	Agriculture Fallow

2.1.2 Land Use Processing

The land use processing was completed by combining the 2020–2023 DEP Statewide geographic information system (GIS) coverage, FDACS FSAID 12 coverage, and FDOT ROW coverage using GIS clipping and intersecting techniques. The SFWMD land use is a complete coverage of the watershed whereas FDACS FSAID 12 and FDOT ROW coverages cover only

portions of the watershed. Where the FDACS FSAID 12 and FDOT ROW coverages exist, Tetra Tech used that information to replace what was contained in the SFWMD coverage.

The resulting SFWMD, FSAID, and FDOT combined processed land use coverage was intersected with the 2023 NLCD impervious coverage to determine the total impervious area in the watershed. Impervious areas were reclassified into seven land use classifications, and impervious areas associated with similar land uses were grouped together. Impervious areas associated with Low Density Residential and Developed Open Space/Disturbed land uses were combined into the Low Density Residential (Impervious) classification. Impervious areas associated with Sugar Cane, Row and Field Crops, Nurseries / Ornamentals / Vineyards, Citrus Groves / Other Groves, Improved Pasture, and Rangeland / Unimproved Pasture / Woodland Pasture / Shrub land uses were combined into the Agricultural (Impervious) classification. Impervious areas associated with Upland Forests, Wetlands, and Water land uses were combined into the Other (Impervious) classification (***Table 3***).

In low and medium density development areas, the effective impervious area (EIA) is the percentage of the mapped impervious coverage (MIA). In these areas, rooftops and other impervious areas associated with single family residential areas are not always connected to the storm sewer or piped directly to the street curb, and runoff from roads is typically directed to grass swales (Sutherland, 1995). In high density areas, most areas within a basin are directly connected to the storm sewer system. The MIA was converted to the EIA through the following equations (Sutherland, 1995):

- High Density Residential (Impervious) areas are totally connected basins where 100% of the urban area is storm-sewered with all impervious surfaces appearing to be directly connected to the system, and are calculated as:

  Equation: $EIA = MIA$

- Medium Density Residential (Impervious) are highly connected basins where the local drainage collector systems for the urban areas are predominately storm sewered with curb and gutters, no dry wells or other drainage infiltration areas are known to exist, and the rooftops are predominately connected to the streets or storm sewer system, and are calculated as:

  Equation: $EIA = 0.4(MIA)^{1.2}$

- All other land uses are average basins where the local drainage collector systems for the urban areas are predominantly storm sewered with curb and gutters, no dry wells or other drainage infiltration areas are known to exist, and the rooftops in the single family residential areas are not connected to the storm sewer or piped directly to the street curb, and are calculated as:

  Equation: $EIA = 0.1(MIA)^{1.5}$

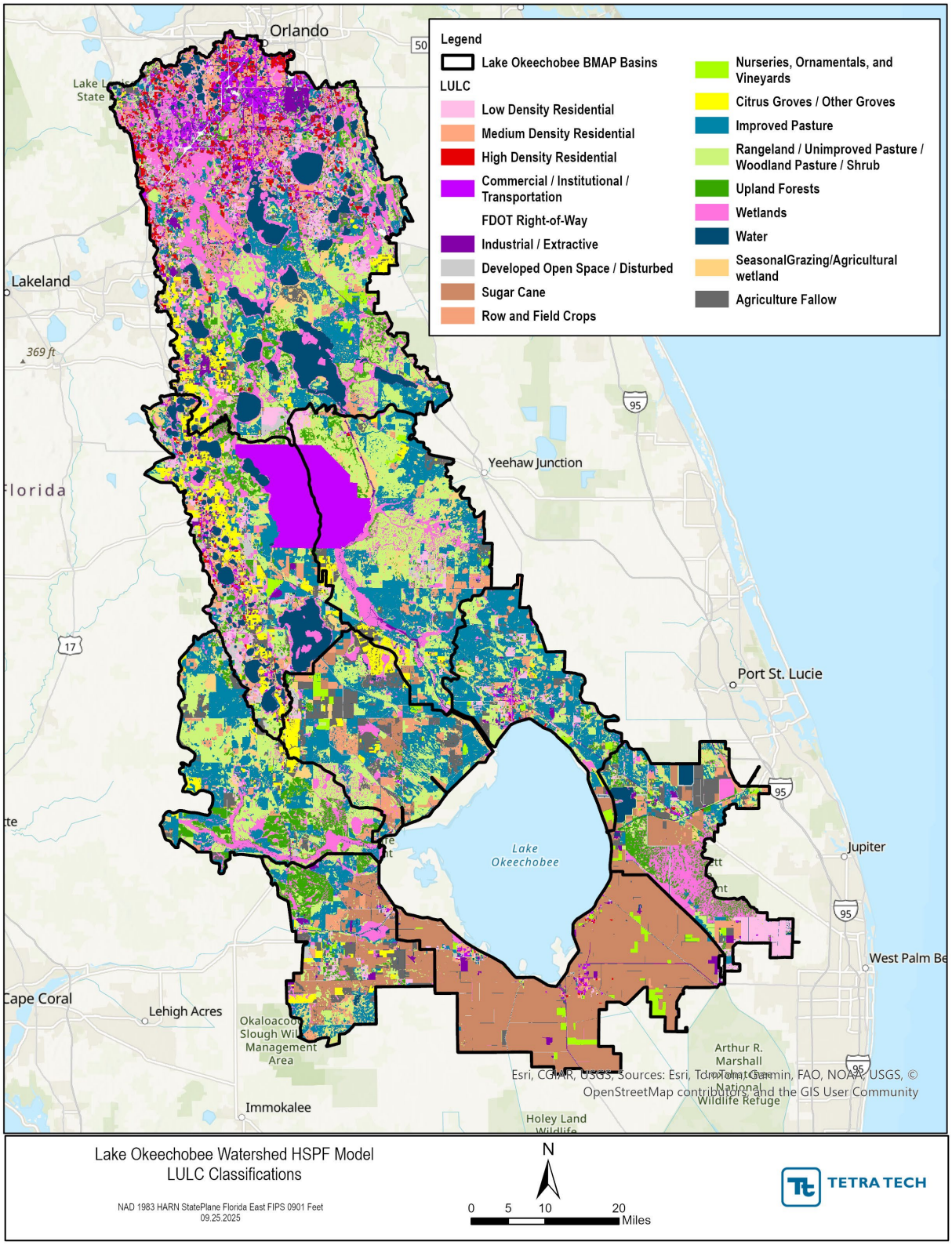

Figure 1. Land use classifications for the Lake Okeechobee Watershed

Table 3. Pervious land use and impervious land use classification in the Lake Okeechobee watershed

Numeric Land Use Code	Description	Land Segment	Total Watershed Area (acre)	Percentage of Watershed
1	Low Density Residential (Pervious)	PERLND	109,300	3.2%
2	Medium Density residential (Pervious)	PERLND	67,394	2.0%
3	High Density Residential (Pervious)	PERLND	25,578	0.7%
4	Commercial / Institutional / Transportation (Pervious)	PERLND	139,502	4.1%
5	FDOT Right-of-Way (Pervious)	PERLND	9,823	0.3%
6	Industrial / Extractive (Pervious)	PERLND	41,089	1.2%
7	Developed Open Space /Disturbed	PERLND	64,807	1.9%
8	Sugar Cane	PERLND	418,209	12.2%
9	Row and Field Crops	PERLND	101,299	3.0%
10	Nurseries, Ornamentals, and Vineyards	PERLND	39,321	1.1%
11	Citrus Groves / Other Groves	PERLND	110,663	3.2%
12	Improved Pasture	PERLND	605,406	17.7%
13	Rangeland / Unimproved Pasture / Woodland Pasture / Shrub	PERLND	507,310	14.8%
14	Upland Forests	PERLND	179,072	5.2%
15	Wetlands	PERLND	411,926	12.0%
16	Water	PERLND	224,000	6.5%
17	Seasonal Grazing / Agricultural Wetland	PERLND	95,264	2.8%
18	Agriculture Fallow	PERLND	157,432	4.6%
21	Low Density Residential (Impervious)	IMPLND	13,442	0.4%
22	Medium Density Residential (Impervious)	IMPLND	31,527	0.9%
23	High Density Residential (Impervious)	IMPLND	22,532	0.7%
24	Commercial / Institutional / Transportation / Industrial / Extractive (Impervious)	IMPLND	37,707	1.1%
25	FDOT Right-of-Way (Impervious)	IMPLND	3,024	0.1%
26	Agriculture (Impervious)	IMPLND	7,456	0.2%
27	Other (Impervious)	IMPLND	5,439	0.2%
-	**Total**	-	**3,428,522**	**100.0%**

2.1.3 Upland Land Use Loading Rate

The nutrient loading rates for TN and TP associated with upland land uses were derived from "edge of field" values as reported in Harper (1994) and Soil and Water Engineering Technology, Inc. (SWET; 2008). SWET (2008) provided TN and TP unit area loads for the St. Lucie and Caloosahatchee watersheds. The upland land use nutrient loading rates were assumed to represent "delivered to stream" values for the combination of surface runoff, interflow, and baseflow. ***Table 4*** shows TN and TP unit area loads provided in Harper (1994), TP unit area load for Lake Okeechobee watershed from SWET (2006) (SWET, 2006), and the range of TN and TP unit area loads for the St. Lucie and Caloosahatchee watersheds from SWET (2008) (***Table 4***). These values were similar for urban and natural land uses, but were different for agricultural land uses. For the Caloosahatchee River and Estuary HSPF model, DEP provided guidance that more weight should be given to Harper (1994) for urban areas and to SWET (2008) for agricultural areas (Harper, 1994; SWET, 2008). Therefore, a similar approach will be used in the Lake Okeechobee watershed model. During the model calibration, all four upland constituents (nitrate + nitrite [NO_x], ammonia [NH_3], orthophosphate [PO_4], and organic matter) and all three flow paths (surface flow, interflow, and groundwater) for each land use will be adjusted until an acceptable agreement between simulated average annual upland load and published average annual upland land use load is achieved.

Tetra Tech used an FDOT report that included event mean concentration (EMC) values for the land uses under its jurisdiction (ATM, 2010) . The HSPF model does not allow for the explicit input of EMC data. Therefore, Tetra Tech processed the FDOT EMC data into unit area loads using average runoff values from the SWET report (SWET, 2008). The runoff value and FDOT EMC were used to calculate TN and TP loads in pounds per acre per year (lbs/acre/yr) for the FDOT Right-of-Way Pervious and FDOT Right-of-Way Impervious land use classes for the St. Lucie and Caloosahatchee watersheds and the resulting range of TN and TP loads will be used for the Lake Okeechobee watershed (***Table 5***).

Table 4. Comparison of Harper (1994), SWET (2006) TP load per acre, and SWET (2008) TN and TP loads per acre

HSPF Land Uses	Land Use Classes (Harper 1994)	TN Load in lbs/acre/yr (Harper 1994)	TP load in lbs/acre/yr (Harper 1994)	Sediment Load in lbs/acre/yr (Harper 1994)	Land Use Classes (SWET 2006)	TP load in lbs/acre/yr (SWET 2006)	Land Use Classes (SWET 2008)	TN Load in lbs/acre/yr (SWET 2008) *	TP Load in lbs/acre/yr (SWET 2008) *
Low Density Residential (Pervious)	Low Density Residential	1.7 - 7.3	0.26 - 1.11	75	Low Density Residential	0.66	Low Density Residential	4.95 – 7.26	0.49 – 0.68
Low Density Residential (Impervious)	Low Density Residential	1.7 - 7.3	0.26 - 1.11	75	Low Density Residential	0.66	Low Density Residential	4.95 – 7.26	0.49 – 0.68
Medium Density Residential (Pervious)	Medium Density Residential	3.0 - 14.4	0.43 - 2.07	125	Medium Density Residential	0.66	Medium Density Residential	7.20 – 10.56	1.40 – 1.93
Medium Density Residential (Impervious)	Medium Density Residential	3.0 - 14.4	0.43 - 2.07	125	Medium Density Residential	0.66	Medium Density Residential	7.20 – 10.56	1.40 – 1.93
High Density Residential (Pervious)	High Density Residential	6.1 - 30.1	1.51 - 7.45	570	High Density Residential	0.66	High Density Residential	10.80 – 15.84	3.00 – 4.14
High Density Residential (Impervious)	High Density Residential	6.1 - 30.1	1.51 - 7.45	570	High Density Residential	0.66	High Density Residential	10.80 – 15.84	3.00 – 4.14
Commercial / Institutional / Transportation (Pervious)	Industrial and Commercial	5.2 - 21.7	0.93 - 3.89	750	Commercial/ Industrial	0.66	Commercial and services, Institutional	6.30 – 14.52	1.40 – 3.31
Industrial / Extractive (Pervious)	Industrial and Commercial	5.2 - 21.7	0.93 - 3.89	750	Commercial/ Industrial	0.66	Industrial, Extractive	6.30 – 13.2	0.66 – 3.31
Commercial / Institutional / Transportation / Industrial / Extractive (Impervious)	Industrial and Commercial	5.2 - 21.7	0.93 - 3.89	750	Commercial/ Industrial	0.66	Commercial and Services, Industrial, Extractive, Institutional, and Recreational	6.30 – 14.52	0.66 – 3.31
Commercial / Institutional / Transportation / Industrial / Extractive (Impervious)	Mining	0.9 - 5.5	0.12 - 0.77	390	Not Applicable (NA)	NA	Not Applicable (NA)	NA	NA
Developed Open Space / Disturbed (Pervious)	Open Land	2.6 - 7.1	0.18 - 0.51	10	Forests/ Wetlands/ Open	0.20	Open Land	3.60 – 5.28	0.28 – 0.39
Rangeland / Unimproved Pasture / Woodland Pasture / Shrub	Pasture	3.6 - 16.3	0.35 - 1.57	280	Woodland/ Range Pasture	0.27	Woodland Pasture	3.69 – 5.41	0.83 – 0.88
Improved Pasture	Pasture	3.6 - 16.3	0.35 - 1.57	280	Improved Pasture	0.72	Improved Pasture	9.99 – 14.65	1.90 – 1.93

HSPF Land Uses	Land Use Classes (Harper 1994)	TN Load in lbs/acre/yr (Harper 1994)	TP load in lbs/acre/yr (Harper 1994)	Sediment Load in lbs/acre/yr (Harper 1994)	Land Use Classes (SWET 2006)	TP load in lbs/acre/yr (SWET 2006)	Land Use Classes (SWET 2008)	TN Load in lbs/acre/yr (SWET 2008) *	TP Load in lbs/acre/yr (SWET 2008) *
Row and Field Crops	Agriculture General	2.8 - 13.4	0.61 - 2.96	175	Row crops	6.30	Row crops	13.50 – 19.80	3.45-4.50
Row and Field Crops	Agriculture General	2.8 - 13.4	0.61 - 2.96	175	Sod Farms	2.52	Row crops	13.50 – 19.80	3.45-4.50
Row and Field Crops	Agriculture General	2.8 - 13.4	0.61 - 2.96	175	Tree Plantations	0.18	Row crops	13.50 – 19.80	3.45-4.50
Agriculture (Impervious)	Agriculture General	2.8 - 13.4	0.61 - 2.96	175	NA	NA	Row crops	13.50 - 19.80	3.45-4.50
Sugar Cane	Agriculture Tree Crop	2.0 - 9.0	0.46 - 2.12	40	Sugar Cane	0.63	Sugar Cane	7.20 – 10.56	0.55 - 0.63
Nurseries / Ornamentals / Vineyards	Agriculture Tree Crop	2.0 - 9.0	0.46 - 2.12	40	Ornamentals	4.10	Ornamentals	10.80 – 15.84	2.90 – 4.00
Citrus Groves / Other Groves	Agriculture Tree Crop	2.0 - 9.0	0.46 - 2.12	40	Citrus	1.62	Citrus	7.65 – 11.22	0.90 - 1.80
Rangeland / Unimproved Pasture / Woodland Pasture / Shrub	Rangeland	1.7 - 6.5	0.09 - 0.33	10	Unimproved Pasture	0.49	Rangeland	3.69 – 5.41	0.25 - 0.28
Upland Forests	Forest	0.8 - 7.2	0.11 - 0.92	50	Forests/ Wetlands/ Open	0.20	Upland Forest	2.25 – 3.30	0.10 - 0.28
Wetlands	Wetland	0.0 - 5.3	0.00 - 0.76	15	Forests/ Wetlands/ Open	0.20	Wetland	1.35 – 1.98	0.01
Water	Water	0.0 - 5.3	0.00 - 0.76	0	Water	0.20	Water	0.81 – 1.19	0.05 – 0.07
FDOT Right-of-Way (Pervious)	NA	NA	NA	NA	Transportation	0.20	Transportation	8.28 – 12.14	1.65 – 2.28
FDOT Right-of-Way (Impervious)	NA	NA	NA	NA	Transportation	0.20	Transportation	8.28 – 12.14	1.65 – 2.28
Other (Impervious)	NA	NA	NA	NA	Other Areas**	0.70	NA	NA	NA

* Range of TN and TP unit area loads for St. Lucie and Caloosahatchee watersheds in SWET (2008).
** Other areas include: Field crops, Other Groves, Fruit orchard, Poultry Feeding Operations, Tree Nurseries, Floriculture, Aquaculture, and Fallow Crop Land

Table 5. TN and TP loads per acre for FDOT land uses

FDOT Land Use Classes	Average % Impervious	TN Concentration in Milligrams per Liter (mg/L) (ATM 2010)	TP Concentration in mg/L (ATM 2010)	Runoff (inches/ year)*	TN Load (lbs/acre/yr)	TP Load (lbs/acre/yr)
FDOT Right-of-Way (Pervious)	35	1.158	0.157	17.57 – 27.43	4.6 – 7.2	0.6 – 1.0
FDOT Right-of-Way (Impervious)	65	1.158	0.157	27.15 - 49.88	7.1 – 13.1	1.0 – 1.8

* Range of runoff for St. Lucie and Caloosahatchee watersheds in SWET (2008).

2.2 POINT SOURCES AND REUSE FACILITIES

2.2.1.1 Point Sources

DEP provided Tetra Tech with the discharge monitoring report (DMR) data for 204 permitted domestic wastewater (DW) and industrial wastewater (IW) treatment facilities, and a list of 805 permitted DW discharge locations (monitor well, injection well, percolation pond, reuse and land application site, and point source) for locating DW facilities. DEP requested that only the National Pollutant Discharge Elimination System (NPDES) facilities with surface water discharges be evaluated for inclusion in the model. Three facilities (FL0036862 – Toho Water Authority [TWA] Walnut Drive Water Reclamation Facility [WRF]; FL0040029 – Avon Park Correctional Institute; and FL0040665 – City of Clewiston Wastewater Treatment Plant [WWTP]) discharge to surface waters, and all have a facility status of "Active" (***Table 6***).

TWA Walnut Drive WRF (FL0036862) discharges to Boot Wetland through discharge point D-001. The Boot Wetland discharges into the M-7 Canal through monitoring group D-01S near the discharge structure to the M-7 Canal, which then flows into London Creek, ultimately emptying into Lake Hatchineha (DEP, Accessed 2025) . However, flow discharge was not reported at M-7 Canal. Therefore, Tetra Tech will need to coordinate with DEP on how to the TWA Walnut Drive WRF (FL0036862) in the HSPF model. The list of NPDES facilities that will be included in the model is shown in ***Figure 2***.

Table 6. List of permitted NPDES facilities in the Lake Okeechobee watershed

NPDES Permit Number	Facility Name	Type	Design Capacity (million gallons per day [MGD])	Permitted Capacity (MGD)
FL0036862+001	TWA Walnut Drive WRF, Poinciana, FL	DW	0.85	0.85
FL0036862+01S	TWA Walnut Drive WRF, Poinciana, FL	DW	NA	0.85
FL0040029	Avon Park Correctional Institute, Avon Park, FL	DW	0.5	0.3
FL0040665	City of Clewiston WWTP, Clewiston, FL	DW	1.5	1.47

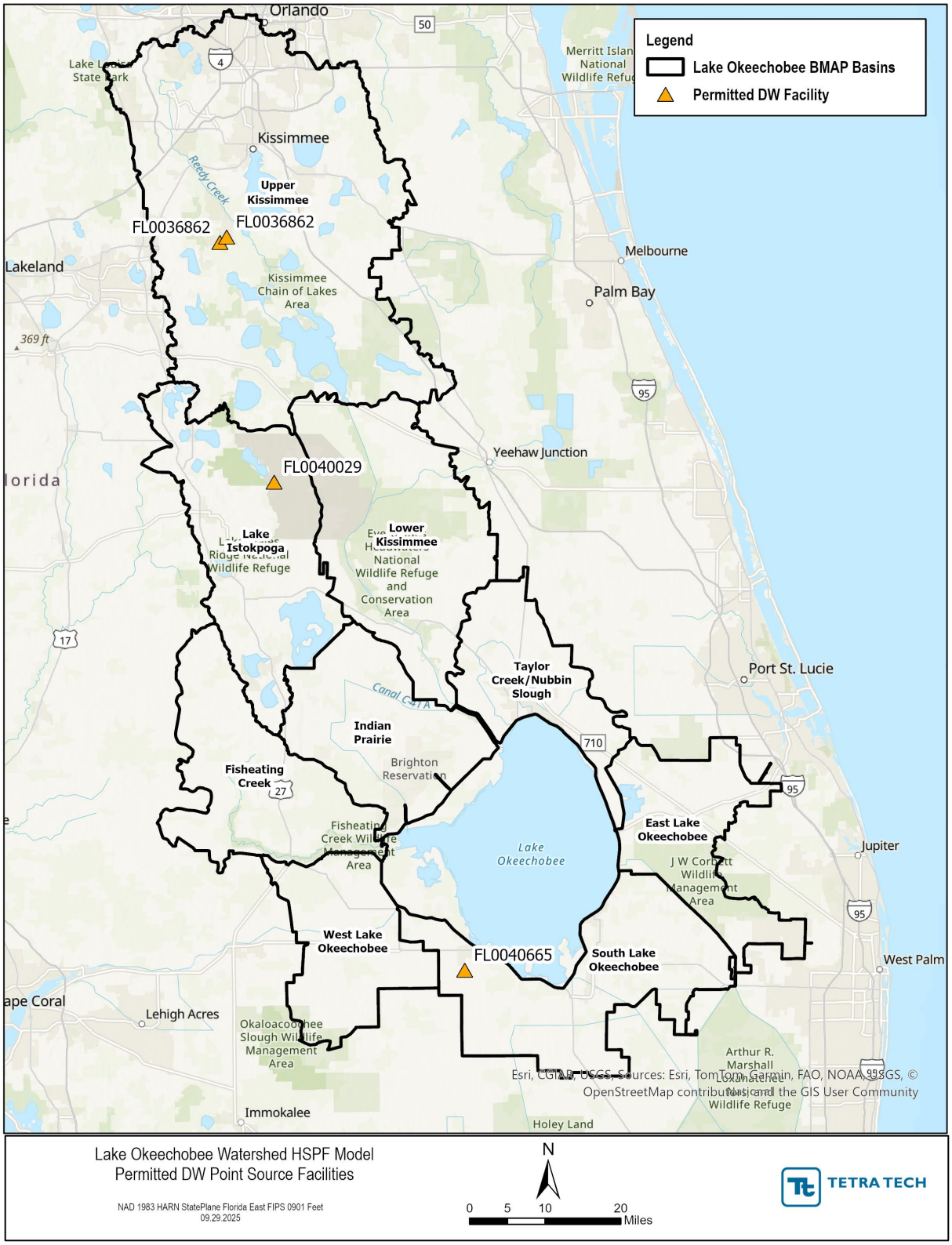

Figure 2. Spatial coverage of permitted DW point sources in the Lake Okeechobee Watershed

2.2.1.2 Reuse Facilities

There were 180 permitted DW reuse facilities within the Lake Okeechobee watershed boundary. Two facilities (FL0040665 – City of Clewiston WWTP and FLA016891 – Glades County Correctional WWTP) were previously processed for the Caloosahatchee River and Estuary Watershed HSPF model (model update with the simulation period through 2023 completed in 2025), and one (FLA013940 – Okeechobee Correctional Wastewater Treatment Facility [WWTF]) was previously processed for the St. Lucie River and Estuary watershed HSPF model. Of these, 145 facilities had an average flow of equal to or less than 0.09 MGD, which DEP did not recommend to be included within the HSPF model. Additionally, 10 reuse facilities greater than 0.09 MGD discharge to rapid infiltration basins (RIBs), which only provide groundwater recharge. There were no DMR data for FLA010795 (Conserv II Distribution Center – R-001), FLA010818 (Apopka WRF – Project Arrow, R-001 and R-002), FLA041360 (City of Lake Wales). Tetra Tech processed 22 reuse facilities for inclusion in the HSPF model (***Table 7***). ***Figure 3*** presents spatial coverage of permitted reuse facilities in the Lake Okeechobee watershed.

Table 7. List of DW reuse facilities for the HSPF model

Facility ID	Facility Name	Usage(s)	Permitted Capacity (MGD)
FL0036862	Toho Cypress West WRF	Irrigation (golf courses, residences)	0.85
FL0040665	City of Clewiston WWTP	Sprayfield	1.470
FLA010630	Lake Groves WWTF	Irrigation	1.300
FLA010814	Orlando – Conserv II WRF	Irrigation (agricultural crops)	25.000
FLA010816	Orlando – Conserv I WWTF	Irrigation	7.500
FLA010957	TWA – South Bermuda	Irrigation (on-site, golf courses, parks, school yards, commercial sites, landscape areas)	22.970
FLA010958	TWA – Sandhill Road WWTF	Irrigation (landscape, residential, golf courses)	13.200
FLA010960	TWA – Parkway WWTF	Irrigation and pond (golf course)	1.500
FLA010962	St. Cloud Southside WRF	Irrigation (golf courses, residential lawns, parks, playgrounds, highway medians, and landscape areas)	8.500
FLA010974	Good Samaritan Retirement Village WWTF	Irrigation	0.300
FLA010979	TWA – Lake Marion WWTF	Irrigation	3.000
FLA010983	TWA – Camelot WWTF	Sprayfield and irrigation (golf course and residential)	8.430
FLA012977	City of Haines City WWTP	Sprayfield	3.638
FLA013888	Cemetery Road WWTF	Irrigation and onsite pond	1.432
FLA013940	Okeechobee Correctional Institution WWTF	Irrigation	0.200
FLA016891	Glades County Correctional WWTP	Sprayfield	0.405
FLA029939	Village of Indiantown WWTF	NA	1.200

Facility ID	Facility Name	Usage(s)	Permitted Capacity (MGD)
FLA107972	Orange County Utilities Department (OCUD) South WRF	Irrigation	R-001: 28.110 R-003 :28.000
FLA108219	Reedy Creek Improvement District WRF	Irrigation (100 acre tree farm, golf courses, parks, highway medians, landscape sites) and wells	15.000
FLA109843	TWA – Cypress West WRF	Irrigation	6.000
FLA267872	TWA – Harmony Community Dev. District WWTF	Irrigation (golf course and residential development)	0.499
FLAB07049	OCUD Hamlin WRF	Public access reuse and irrigation	5.000

2.2.2 Available Data

The observed average flow and water quality results for each of the NPDES WWTF and reuse facilities are shown in ***Table 8***. The number of end of pipe flow and water quality parameter observations reported by each facility are shown in ***Table 9***. For most parameters, results were reported monthly. The period of record for the available data is shown in ***Table 10***. Permits found on the OCULUS website (DEP, Accessed 2025) assisted in determining the appropriate monitoring locations and pipe outflows for each reuse DW facility. The available measured data for these facilities will be used in the HSPF model to determine the total loading from each facility. The data will be used to fill short- and long-term gaps in the data records. For example, if a facility has TN data for ten years of the modeling period, the long-term average of the measured data will be used to represent the expected TN concentration for the remaining portion of the simulation period, where data are unavailable. In some instances, other annual averages or maximum values will also be included in the data processing where there were gaps in data.

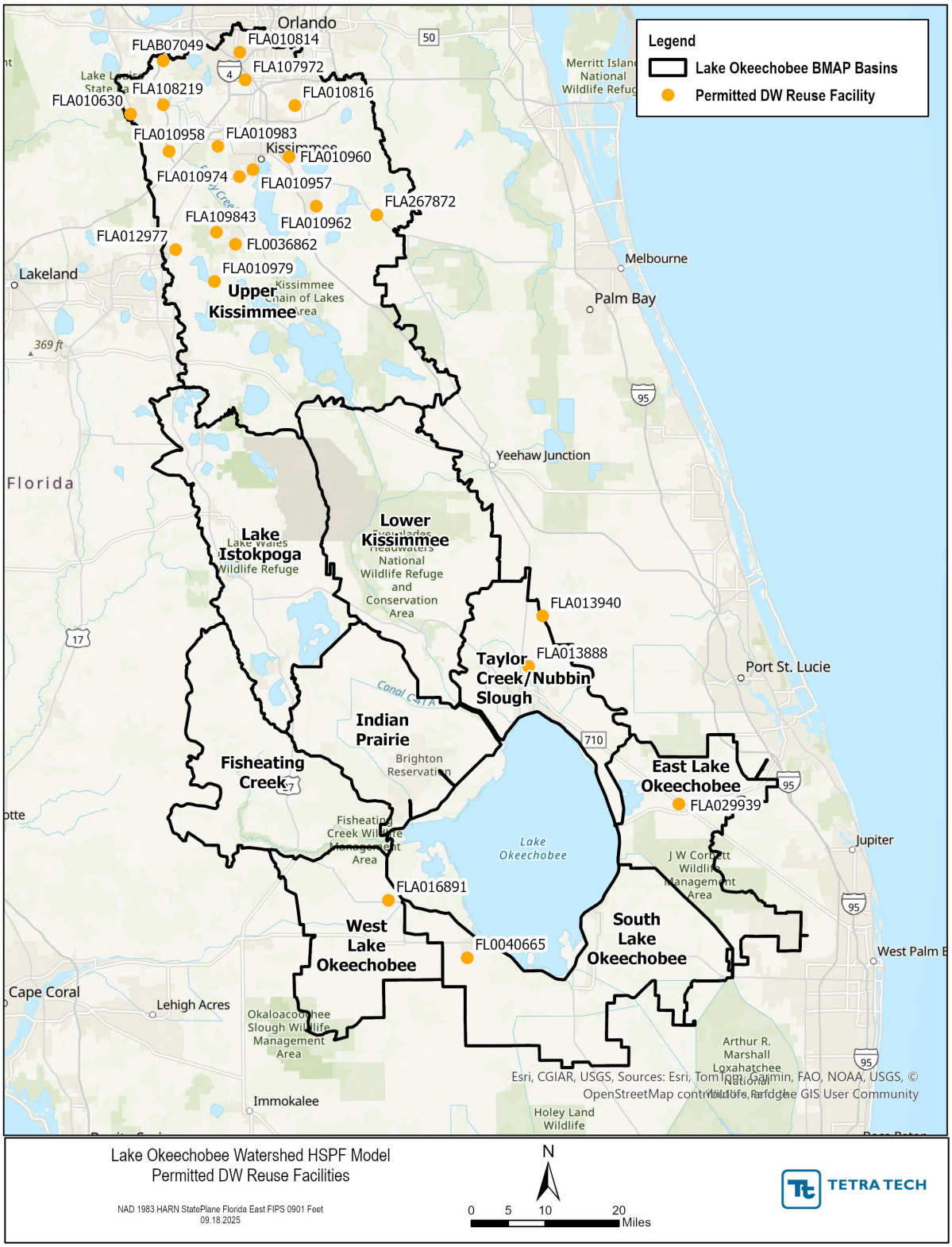

Figure 3. Spatial coverage of permitted DW reuse facilities in the Lake Okeechobee Watershed

Table 8. Observed average value for available flow and water quality data for NPDES and reuse facilities

Facility Type	Permit	Flow (cubic feet per second [cfs])	NH_3 (mg/L)	NOx (mg/L)	Organic Nitrogen (OrgN) (mg/L)	TN (mg/L)	PO_4 (mg/L)	Organic Phosphorus (OrgP) (mg/L)	TP (mg/L)	Carbonaceous Biochemical Oxygen Demand 5-Day (CBOD5) (mg/L)	Total Suspended Solids (TSS) (mg/L)	DO (mg/L)	Water Temperature (WTEM) (Deg C)
NPDES	FL0036862	0.025	0.004	0.20	0.10	0.31	-	-	0.05	0.24	0.13	-	-
NPDES	FL0040029	0.42	0.24	3.32	0.60	3.29	-	-	0.79	3.03	2.36	7.83	26.46
NPDES	FL0040665	1.68	0.65	0.30	1.55	2.40	-	-	0.35	3.31	3.44	5.17	25.37
Reuse	FL0036862	1.18	-	-	-	3.3	-	-	1.44	1.44	0.85	-	-
Reuse	FL0040665	1.85	-	-	-	12.34	-	-	1.94	4.74	4.88	-	-
Reuse	FLA010630	0.39	-	-	-	9.86†	-	-	4.7†	8.4	1.28	-	-
Reuse	FLA010814	17.16	-	3.36***	-	1.4	-	-	3.54†	1.72	1.5	-	-
Reuse	FLA010816	4.41	-	-	-	8.24†	-	-	2.87†	1.46	1.29	-	-
Reuse	FLA010957	3.45	-	2.80*	-	4.64	-	-	1.13	1.45	1.49	-	-
Reuse	FLA010958	4.13	-	-	-	9.56†	-	-	3.01†	1.56**	2.63	-	-
Reuse	FLA010960	1.17	-	-	-	4.01	-	-	3.18	2.05	2.82	-	-
Reuse	FLA010962	5.1	-	-	-	10.59†	-	-	4.34†	1.47	1.55	-	-
Reuse	FLA010974	0.23	-	-	-	4.16†	-	-	2.42†	8.22**	0.92**	-	-
Reuse	FLA010979	1.51	-	-	-	6.15†	-	-	2.11†	1.62	1.59	-	-
Reuse	FLA010983	3.32†	-	-	-	8.46**†	-	-	2.07**†	2.03**	2.23†	-	-
Reuse	FLA012977	1.72**	-	3.69***	-	4.75‡	-	-	3.40***	3.88	3.38	-	-
Reuse	FLA013888	0.71	-	-	-	11.58	-	-	3.23	4.89	2.99	-	-
Reuse	FLA013940	0.29	-	7.78	-	17.27	-	-	5.26	3.89	3.59	-	-
Reuse	FLA016891	0.28**	-	-	-	-	-	-	-	2.58**	2.32**	-	-
Reuse	FLA029939	0.27	-	-	-	-	-	-	-	3.55†	2.95	-	-
Reuse	FLA107972	16.87**	-	3.14**	-	10.09**	-	-	2.38**	1.73**	4.20**		
Reuse	FLA108219	8.87‡	-	-	-	1.74	-	-	0.17	1.00**	1.01**		
Reuse	FLA109843	3.36	-	-	-	6.37†	-	-	2.98†	1.94	2.09***	-	-
Reuse	FLA267872	0.33	-	-	-	8.85	-	-	3.67	2.51	2.38***	-	-
Reuse	FLAB07049	4.75	-	-	-	2.83	-	-	1.99	1.98	7.15***	-	-

* Single sample reported in DMR data.
** Averaged values for multiple monitoring locations and/or outfalls.
*** Maximum values.
† Monthly average and maximum DMR values were both processed.
‡ Annual average and maximum DMR values were both processed.
- No data.

Table 9. Number of observations for available flow and water quality data for NPDES and reuse facilities

Facility Type	Permit	Flow (cfs)	NH_3 (mg/L)	NOx (mg/L)	OrgN (mg/L)	TN (mg/L)	PO_4 (mg/L)	OrgP (mg/L)	TP (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	DO (mg/L)	WTEM (Deg C)
NPDES	FL0036862	161	149	150	148	150	-	-	150	148	144	-	-
NPDES	FL0040029	191	168	191	192	189	-	-	192	189	52	192	143
NPDES	FL0040665	192	119	150	119	148	-	-	147	138	97	106	86
Reuse	FL0036862	188	-	-	-	144	-	-	144	144	144	-	-
Reuse	FL0040665	146	-	-	-	141	-	-	142	287	259	-	-
Reuse	FLA010630	144	-	-	-	137	-	-	137	144	144	-	-
Reuse	FLA010814	123	-	98	-	23	-	-	119	121	117	-	-
Reuse	FLA010816	169	-	-	-	135	-	-	135	169	169	-	-
Reuse	FLA010957	162	-	1	-	97	-	-	97	163	141	-	-
Reuse	FLA010958												
Reuse	FLA010960	184	-	-	-	115	-	-	115	138	115	-	-
Reuse	FLA010962	173	-	-	-	126	-	-	126	149	100	-	-
Reuse	FLA010974	117	-	-	-	106	-	-	105	125	134	-	-
Reuse	FLA010979	144	-	-	-	106	-	-	106	151	137	-	-
Reuse	FLA010983	167	-	-	-	115	-	-	115	158	32	-	-
Reuse	FLA012977	173	-	100	-	89	-	-	118	124	123	-	-
Reuse	FLA013888	156	-	-	-	130	-	-	131	156	133	-	-
Reuse	FLA013940	155	-	57	-	57	-	-	58	58	58	-	-
Reuse	FLA016891	111	-	-	-	-	-	-	-	113	127	-	-
Reuse	FLA029939	60	-	-	-	-	-	-	-	57	57	-	-
Reuse	FLA107972	189	-	146	-	157	-	-	115	166	114	-	-
Reuse	FLA108219	166	-	-	-	17	-	-	17	174	137	-	-

Facility Type	Permit	Flow (cfs)	NH_3 (mg/L)	NOx (mg/L)	OrgN (mg/L)	TN (mg/L)	PO_4 (mg/L)	OrgP (mg/L)	TP (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	DO (mg/L)	WTEM (Deg C)
Reuse	FLA109843	192	-	-	-	106	-	-	106	169	151	-	-
Reuse	FLA267872	69	-	-	-	62	-	-	62	71	71	-	-
Reuse	FLAB07049	15	-	-	-	15	-	-	15	15	15	-	-

Table 10. Period of record for available flow and water quality data for NPDES and reuse facilities

Facility Type	Permit	Flow (cfs)	NH_3 (mg/L)	NOx (mg/L)	OrgN (mg/L)	TN (mg/L)	PO_4 (mg/L)	OrgP (mg/L)	TP (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	DO (mg/L)	WTEM (Deg C)
NPDES	FL0036862	5/31/2009, 8/31/2009, 11/30/2009-7/31/2010, 2/28/2011-3/31/2011, 9/30/2011-12/31/2023	5/31/2009, 8/31/2009, 3/31/2010-6/30/2010, 2/28/2011-3/31/2011, 10/31/2011 ,1/31/2012-2/29/2012, 6/30/2012-12/31/2023	5/31/2009, 8/31/2009, 3/31/2010-6/30/2010, 3/31/2011, 10/31/2011 ,1/31/2012-2/29/2012, 6/30/2012-12/31/2023	5/31/2009, 3/31/2010-6/30/2010, 3/31/2011, 3/31/2011, 10/31/2011, 1/31/2012-2/29/2012, 6/30/2012-12/31/2023	5/31/2009, 8/31/2009, 3/31/2010-6/30/2010, 2/28/2011-3/31/2011, 10/31/2011, 1/31/2012-2/29/2012,6/30/2012-12/31/2023	-	-	5/31/2009, 8/31/2009, 3/31/2010-6/30/2010, 2/28/2011-3/31/2011, 10/31/2011, 1/31/2012-2/29/2012,6/30/2012-12/31/2023	5/31/2009, 3/31/2010-6/30/2010, 3/31/2011, 2/28/2011, 10/31/2011, 1/31/2012-2/29/2012, 6/30/2012-12/31/2023	5/31/2009, 8/31/2009, 12/31/2009-1/31/2010-3/31/3010, 1/31/2012-12/31/2023	-	-
NPDES	FL0040029	1/31/2008-12/31/2023	1/31/2008-3/31/2010, 7/31/2010, 10/31/2010 -3/31/2011, 7/31/2011, 9/30/2011-9/30/2022	1/31/2008-6/30/201,8 /31/2012-12/31/2023	1/31/2008-12/31/2023	1/31/2008-3/31/2010, 7/31/2010-12/31/2023	-	-	1/31/2008-12/31/2023	1/31/2008-3/31/2011, 5/31/2011-7/31/2011, 9/30/2012-12/31/2023	1/31/2008-10/31/2008, 12/31/2008-5/31/2012	1/31/2008-12/31/2023	2/29/2012-12/31/2023
NPDES	FL0040665	1/31/2008-12/31/2023	7/31/2011-7/31/2021	7/31/2011-12/31/2023	7/31/2011-7/31/2021	1/31/2008-4/30/2011, 1/31/2015-12/31/2023	-	-	1/31/2008-4/30/2011, 1/31/2015-12/31/2023	1/31/2008-4/30/2011, 3/31/2014-4/30/2022	6/30/2009-2/28/2010, 1/31/2015-4/30/2012	1/31/2008-10/31/2016	11/30/2016-12/31/2023
Reuse	FL0036862	1/31/2008-10/31/2010, 12/31/2010, 3/31/2011-7/31/2011, 9/30/2011-12/31/2023	-	-	-	1/31/2012-12/31/2023	-	-	1/31/2012-12/31/2023	1/31/2012-12/31/2023	1/31/2012-12/31/2023	-	-

Facility Type	Permit	Flow (cfs)	NH_3 (mg/L)	NOx (mg/L)	OrgN (mg/L)	TN (mg/L)	PO_4 (mg/L)	OrgP (mg/L)	TP (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	DO (mg/L)	WTEM (Deg C)
Reuse	FL0040665	11/30/2016-4/30/2022, 9/30/2023-12/31/2023	-	-	-	1/31/2008-4/30/2011	-	-	1/31/2008-4/30/2011	1/31/2008-7/31/2011, 4/30/2012-12/31/2023	1/31/2008-4/30/2011, 6/30/2014-12/31/2023	-	-
Reuse	FLA010630	11/30/2011-11/30/2012, 1/31/2013-12/31/2023	-	-	-	7/31/2012-11/30/2012, 1/31/2013-12/31/2023	-	-	7/31/2012-11/30/2012, 1/31/2013-12/31/2023	11/30/2011-11/30/2012, 1/31/2013-12/31/2023	11/30/2011-11/30/2012, 1/31/2013-12/31/2023	-	-
Reuse	FLA010814	1/31/2009, 9/30/2010-10/31/2010, 4/30/2011, 4/30/2012-7/31/2013, 11/20/2013, 1/31/2014-2/28/2014, 8/31/2015, 10/31/2015-12/31/2023	-	7/31/2008, 1/31/2009, 4/30/2012-7/31/2013, 11/30/201, 1/31/2014-2/28/2014, 8/31/2015, 10/31/2015-1/31/2022	-	2/28/2022-12/31/2023	-	-	4/30/2012-7/31/2013, 11/30/2013, 1/31/2014-2/28/2014, 8/31/2015, 10/31/2015-12/31/2023	7/31/2008. 1/31/2009, 4/30/2012-7/31/2013, 11/30/2013, 1/31/2014-2/28/2014, 8/31/2015, 10/31/2015-12/31/2023	5/31/2012-7/31/2013, 11/30/2013, 1/31/2014-2/28/2014, 8/31/2015, 10/31/2015-12/31/2023	-	-
Reuse	FLA010816	7/31/2008-2/28/2013, 4/30/2013, 7/31/2013, 11/30/2013-1/31/2014, 1/31/2015-12/31/2023	-	-	-	5/31/2011-2/28/2013, 4/30/2013, 7/31/2013, 11/30/2013-1/31/2014, 1/31/2015-12/31/2023	-	-	5/31/2011-2/28/2013, 4/30/2013, 7/31/2013, 11/30/2013-1/31/2014, 1/31/2015-12/31/2023	7/31/2008-2/28/2013, 4/30/2013, 7/31/2013, 11/30/2013-1/31/2014, 1/31/2015-12/31/2023	7/31/2008-2/28/2013, 4/30/2013, 7/31/2013, 11/30/2013-1/31/2014, 1/31/2015-12/31/2023	-	-
Reuse	FLA010957	1/31/2008-4/30/2008, 6/30/2008-1/31/2010, 3/31/2010-6/30/2010, 8/31/2010-6/30/2013, 11/30/2013, 1/31/2014, 1/31/2016-12/31/2023	-	12/31/2011	-	12/31/2015-12/31/2023	-	-	12/31/2015-12/31/2023	1/31/2008-12/31/2009, 3/31/2010-6/30/2010, 8/31/2010-6/30/2013, 111/30/2013, 1/31/2014, 12/31/2015-12/31/2023	1/31/2008-1/31/2010, 3/31/2010-6/30/2010, 8/31/2010-9/30/2011, 3/31/2012, 12/31/2015-12/31/2023	-	-

Facility Type	Permit	Flow (cfs)	NH_3 (mg/L)	NOx (mg/L)	OrgN (mg/L)	TN (mg/L)	PO_4 (mg/L)	OrgP (mg/L)	TP (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	DO (mg/L)	WTEM (Deg C)
Reuse	FLA010958	5/31/2008-10/31/2008, 12/31/2008-12/31/2010, 2/28/2011-1/31/2012, 3/31/2012-6/30/2013, 10/31/2013-11/30/2013, 1/31/2014-2/28/2014, 1/31/2015-7/31/2015, 9/30/2015-12/31/2023	-	-	-	10/31/2013-11/30/2013, 1/31/2014-2/28/2014, 1/31/2015-7/31/2015, 9/30/2015-12/31/2023	-	-	10/31/2013-11/30/2013, 1/31/2014-2/28/2014, 1/31/2015-7/31/2015, 9/30/2015-12/31/2023	1/31/2008-2/29/2008, 4/30/2008-10/31/2008, 12/31/2008-12/31/2010, 2/28/2011-1/31/2012, 3/31/2012-6/30/2013, 10/31/2013-11/30/2013, 1/31/2014-2/28/2014, 1/31/2015-7/31/2015, 9/30/2015-12/31/2023	1/31/2008-2/29/2008, 4/30/2008-10/31/2008, 12/31/2008-12/31/2010, 2/28/2011-10/31/2011, 3/31/2012, 10/31/2013-11/30/2013, 1/31/2014-2/28/2014, 1/31/2015-7/31/2015, 9/30/2015-12/31/2023	-	-
Reuse	FLA010960	1/31/2008-10/31/2009, 12/31/2009-6/30/2013, 10/31/2013-11/30/2013, 1/31/2014-2/28/2014, 6/30/2014-12/31/2023	-	-	-	6/30/2014-12/31/2023	-	-	6/30/2014-12/31/2023	10/31/2011-2/29/2012, 4/30/2012-6/30/2013, 11/30/2013, 1/31/2014-2/28/2014, 6/30/2014-6/30/2014-12/31/2023	6/30/2014-12/31/2023	-	-

Facility Type	Permit	Flow (cfs)	NH_3 (mg/L)	NOx (mg/L)	OrgN (mg/L)	TN (mg/L)	PO_4 (mg/L)	OrgP (mg/L)	TP (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	DO (mg/L)	WTEM (Deg C)
Reuse	FLA010962	1/31/2008-8/31/2009, 10/31/2009-4/30/2010, 8/31/2010, 11/30/2010-3/31/2013, 5/31/2013, 10/31/2013-2/28/2014, 8/31/2014-4/30/2015, 6/30/2015-9/30/2016, 12/31/2016-12/31/2023	-	-	-	3/31/2012-3/31/2013, 5/31/2013, 10/31/2013-2/28/2014, 8/31/2014-4/30/2015, 6/30/2015-9/30/2016, 12/31/2016-6/30/2023. 10/31/2023-12/31/2023	-	-	3/31/2012-3/31/2013, 5/31/2013, 10/31/2013-2/28/2014, 8/31/2014-4/30/2015, 6/30/2015-9/30/2016, 12/31/2016-6/30/2023. 10/31/2023-12/31/2023	6/30/2008, 2/28/2009-5/31/2009, 3/31/2010-4/30/2010, 6/30/2010-8/31/2010, 10/31/2010-3/31/2013, 5/31/2013, 10/31/2013-2/28/2014, 8/31/2014-4/30/2015, 6/30/2015-9/30/2016, 12/31/2016-12/31/2023	9/30/2008, 3/31/2010-4/30/2010, 6/30/2010-8/31/2010, 10/31/2010-2/29/2012, 12/31/2016-12/31/2023	-	-
Reuse	FLA010974	4/30/2008, 6/30/2008, 8/31/2008, 11/30/2008-1/31/2009, 12/31/2009-1/31/2010, 3/31/2010-10/31/2011, 5/31/2016-6/30/2016, 8/31/2016-12/31/2023	-	-	-	11/30/2011, 1/31/2012, 3/31/2012-11/30/2012, 1/31/2013-2/28/2013, 4/30/2013-7/31/2013, 5/31/2016-6/30/2016, 8/31/2016-12/31/2023	-	-	11/30/2011, 1/31/2012, 3/31/2012-11/30/2012, 1/31/2013-2/28/2013, 4/30/2013-7/31/2013, 5/31/2016-6/30/2016, 8/31/2016-12/31/2023	4/30/2008, 6/30/2008, 12/31/2009-10/31/2011, 1/31/2012, 3/31/2012-11/30/2012, 1/31/2013-2/27/2013, 4/30/2013-7/31/2013, 5/31/2016-6/30/2016, 8/31/2016-12/31/2023	6/30/2008, 8/31/2008. 12/31/2009-11/30/2012, 1/31/2013-2/28/2013, 4/30/2013-7/31/2013, 5/31/2016-6/30/2016, 8/31/2016-12/31/2023	-	-
Reuse	FLA010979	8/31/2008, 12/31/2009-4/30/2012, 6/30/2012-13/21/2012, 2/28/2013-6/30/2013, 11/30/2013, 1/31/2014-2/28/2014, 10/31/2015-12/31/2023	-	-	-	11/30/2013, 1/31/2014-2/28/2014, 10/31/2015-12/31/2023	-	-	11/30/2013, 1/31/2014-2/28/2014, 10/31/2015-12/31/2023	4/30/2009-12/31/2012, 2/28/2013-6/30/2013, 11/30/2013, 1/31/2014-2/28/2014, 10/31/2015-12/31/2023	4/30/2009-9/30/2011, 3/31/2012, 3/31/2013-6/30/2013, 11/30/2013, 1/31/2014-2/28/2014, 10/31/2015-12/31/2023	-	-

Facility Type	Permit	Flow (cfs)	NH_3 (mg/L)	NOx (mg/L)	OrgN (mg/L)	TN (mg/L)	PO_4 (mg/L)	OrgP (mg/L)	TP (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	DO (mg/L)	WTEM (Deg C)
Reuse	FLA010983	5/31/2008-8/31/2008, 11/30/2008-8/31/2012, 12/31/2012-6/30/2013, 11/30/2013, 1/31/2014, 1/31/2015-12/31/2023	-	-	-	12/31/2012-6/30/2013, 11/30/2013, 1/31/2014, 1/31/2015-8/31/2017, 11/30/2017-12/31/2023	-	-	12/31/2012-6/30/2013, 11/30/2013, 1/31/2014, 1/31/2015-8/31/2017, 11/30/2017-12/31/2023	5/31/2008-6/30/2008, 6/30/2009-8/31/2012, 12/31/2012-6/30/2013, 11/30/2013, 1/31/2014, 1/31/2015-12/31/2023	5/31/2008-6/30/2008, 12/31/2009-8/31/2012, 12/31/2012-6/30/2013, 11/30/2013, 1/31/2014, 1/31/2015-12/31/2023	-	-
Reuse	FLA012977	6/30/2009-12/31/2023	-	5/31/2011, 7/31/2011-3/31/2012, 5/31/2014, 8/31/2016-12/31/2023	-	8/31/2016-12/31/2023	-	-	4/30/2012-4/30/2014, 6/30/2014-5/31/2022	6/30/2009-3/31/2012, 5/31/2014, 8/31/2016-12/31/2023	6/30/2009-3/31/2012, 5/31/2014, 8/31/2016-12/31/2023	-	-
Reuse	FLA013888	1/31/2011-12/31/2023	-	-	-	12/31/2012-12/31/2023	-	-	12/31/2012-12/31/2023	1/31/2011-12/31/2023	12/31/2012-12/31/2023	-	-
Reuse	FLA013940	12/31/2010-12/31/2023	-	1/31/2011-11/30/2015	-	1/31/2011-11/30/2015	-	-	12/31/2010-11/30/2015	12/31/2010-11/30/2015	12/31/2010-11/30/2015	-	-
Reuse	FLA016891	12/31/2012-1/31/2014, 4/30/2014, 6/30/2014, 1/31/2015-12/31/2023	-	-	-	-	-	-	-	1/31/2011-		-	-
Reuse	FLA029939	10/31/2012-3/31/2017, 5/31/2017-6/30/2017, 8/31/2017-9/30/2017	-	-	-	-	-	-	-	10/31/2012-2/28/2017, 4/30/2017-7/31/2017	10/31/2012-2/28/2017, 4/30/2017-7/31/2017	-	-

Facility Type	Permit	Flow (cfs)	NH_3 (mg/L)	NOx (mg/L)	OrgN (mg/L)	TN (mg/L)	PO_4 (mg/L)	OrgP (mg/L)	TP (mg/L)	CBOD5 (mg/L)	TSS (mg/L)	DO (mg/L)	WTEM (Deg C)
Reuse	FLA107972	1/31/2008-4/30/2008, 6/30/2008-8/31/2012, 10/31/2012-4/30/2014, 6/30/2014-12/31/2023	-	10/31/2010 - 11/30/2011 , 1/31/2012-8/31/2012, 10/31/2012 -4/30/2014, 6/30/2014-12/31/2023	-	10/31/2010-8/31/2012, 10/31/2012-4/30/2014, 6/30/2014-12/31/2023	-	-	6/30/2014-12/31/2023	6/30/2008, 7/31/2009-10/31/2010. 12/31/2010, 3/31/2011, 5/31/2011-6/30/2011, 9/20/2011-10/31/2011, 12/31/2011-8/31/2012, 10/31/2012-4/30/2014, 6/30/2014-12/31/2023	10/31/2010, 3/31/2011, 5/31/2011-6/30/2011, 6/30/2014-12/31/2023	-	-
Reuse	FLA108219	7/31/2008, 2/28/2009, 7/31/2009-11/30/2010, 7/31/2011, 10/31/2011-1/31/2012, 3/31/2012-12/31/2023	-	-	-	8/31/2022-12/31/2023	-	-	8/31/2022-12/31/2023	7/31/2008, 7/31/2009-12/31/2023	8/31/2012-12/31/2023	-	-
Reuse	FLA109843	1/31/2008-11/30/2013, 1/31/2014, 10/31/2015-12/31/2023	-	-	-	2/28/2013-6/30/2013, 10/31/2013-11/30/2013, 1/31/2014, 10/31/2015-12/31/2023	-	-	2/28/2013-6/30/2013, 10/31/2013-11/30/2013, 1/31/2014, 10/31/2015-12/31/2023	1/31/2008-11/30/2013, 1/31/2014, 10/31/2015-12/31/2023	1/31/2008-9/30/2011, 3/31/2012, 2/28/2013-11/30/2013, 1/31/2014, 10/31/2015-12/31/2023	-	-
Reuse	FLA267872	11/30/2014, 10/31/2015-12/31/2023	-	-	-	11/30/2014, 10/31/2015-4/30/2021, 2/28/2022-12/31/2023	-	-	11/30/2014, 10/31/2015-4/30/2021, 2/28/2022-12/31/2023	11/30/2014, 10/31/2015-12/31/2023	11/30/2014, 10/31/2015-12/31/2023	-	-
Reuse	FLAB07049	8/31/2022-12/31/2023	-	-	-	8/31/2022-12/31/2023	-	-	8/31/2022-12/31/2023	8/31/2022-12/31/2023	8/31/2022-12/31/2023	-	-

2.2.3 Model Setup

NPDES facilities will be set up as direct input time series to RCHRES in the EXT SOURCES block in the HSPF model UCI file. The time series information will be stored in a .WDM file as a daily average value and used to input into the model at an hourly time step using the in-model DIV transformation. ***Table 11*** identifies the mapping and ratio assumption between the .WDM file and HSPF model simulation using the same ratios as the Caloosahatchee River and Estuary model.

Table 11. NPDES facility constituent mapping and ratio assumption

NPDES Constituent	Parameter ID	HSPF Constituent	Ratio
Flow	Flow	Flow	1
Orthophosphate	PO_4	Orthophosphate	1
Organic Phosphorus	OrgP	Organic Phosphorus	1
Ammonia	NH_3	Total Ammonia	1
Nitrate + Nitrite	NOx	Nitrate Nitrite	90% 10%
Organic Nitrogen	OrgN	Organic Nitrogen	1
Carbonaceous BOD5	CBOD5	Carbonaceous BOD Organic Carbon	1 3
Dissolved Oxygen	DO	Dissolved Oxygen	1
Total Suspended Solids	TSS	Sand Silt Clay	10% 50% 40%
Water Temperature	WTEM	Water Temperature	1

The reuse facilities listed in **Section 2.2** will be set up as lateral input time series to specific pervious (PERLAND) land uses in the EXT SOURCES block in the HSPF model *.UCI file. The time series information will be stored in a .WDM file as a daily average value and the DIV transformation will be used to input it into the model at an hourly time step. Unique land uses for each reuse facility's application area will not be established during the land use processing for Task 2. Therefore, it will be assumed that the Low Density Residential (Pervious) Next-Generation Radar (NEXRAD) and land use zones containing the reuse facility received the facilities application.

For a lateral input time series, the HSPF model requires the units of inches for flow and pounds/acre for pollutant mass. To transform the input data into the proper units, the PERLND ID area, along with each facility's flow and constituent load will be used to calculate the rate of flow and loading for each pollutant mass (***Table 12***). This helps to represent each facility's flow volume and constituent load appropriately even though the application area in the model is different from the application area of the facility.

Table 12. Reuse facility constituent mapping

Reuse Constituent	Parameter ID	HSPF Constituent
Flow	Flow	Lateral inflow
Orthophosphate	PO_4	Lateral orthophosphate
Organic Phosphorus	OrgP	Lateral organic matter

Reuse Constituent	Parameter ID	HSPF Constituent
Ammonia	NH_3	Lateral total ammonia
Nitrate + Nitrite	NOx	Lateral nitrate-nitrite
Organic Nitrogen	OrgN	Lateral organic matter
Carbonaceous BOD5	CBOD5	Lateral organic matter
Total Suspended Solids	TSS	Lateral Sediment

2.2.4 Missing Data Assumption

When available, measured water quality data were used to represent the NPDES and reuse facilities discharge flows and concentrations and to fill gaps in the data record. However, as shown above, measured data were not available for many parameters. Therefore, Tetra Tech identified default assumptions that were used for the NPDES facilities (***Table 13***) and reuse facilities (***Table 14***). These assumptions were based on available data from all facilities in the watershed.

Table 13. Recommended default assumptions for missing water quality data for NPDES facilities

Constituent	Parameter ID	Minor (<1.0 MGD)	Major (>1.0 MGD)	Rationale
Total Phosphorus	TP	1.0 mg/L	1.0 mg/L	Based on average TP data from reuse facilities
Orthophosphate	PO_4	0.9 mg/L (90% of TP)	0.7 mg/L (70% of TP)	Professional recommendation
Organic Phosphorus	OrgP	0.1 mg/L (10% of TP)	0.3 mg/L (30% of TP)	Professional recommendation
Total Nitrogen	TN	2.0 mg/L (sum of species)	2.0 mg/L (sum of species)	Average of available data = 2.00 mg/L; range of 0.31- 3.29 mg/L
Ammonia*	NH_3	0.36 mg/L (18% of TN)	0.36 mg/L (18% of TN)	Average percent of TN
Nitrate + Nitrite	NOx	1.26 mg/L (63% of TN)	1.26 mg/L (63% of TN)	Average percent of TN
Organic Nitrogen**	OrgN	0.38 mg/L (19% of TN)	0.38 mg/L (19% of TN)	Difference between TN and (NOx + NH_3)
Carbonaceous BOD5	CBOD5	2.0 mg/L	2.0 mg/L	Average of available data =2.10; range of 0.24 - 3.31 mg/L
Dissolved Oxygen	DO	6.0 mg/L	6.0 mg/L	Average of available data =6.5 mg/L; range of 5.17 – 7.83 mg/L
Total Suspended Solids	TSS	2.0 mg/L	2.0 mg/L	Average of available data =2.10 mg/L; range of 0.24 - 3.31 mg/L
Water Temperature	WTEM	24.0 °C October through March 28.0 °C April through September	24.0 °C October through March 28.0 °C April through September	Professional recommendation

* When both TN and NOx are available in raw data, ammonia concentrations will be calculated as: $NH_3 = 49\% \times (TN - NO_x)$

** When both TN and NOx re available in raw data, organic nitrogen concentrations will be calculated as: $OrgN = 51\% \times (TN - NOx)$

Table 14. Recommended default assumptions for missing water quality data for reuse facilities

Constituent	Parameter ID	Minor (<1.0 MGD)	Major (>1.0 MGD)	Rationale
Total Phosphorus	TP	3.0 mg/L	3.0 mg/L	Average of available data = 2.70 mg/L; range of 0.17 – 4.34 mg/L
Orthophosphate	PO_4	2.7 mg/L (90% of TP)	2.1 mg/L (70% of TP)	Professional recommendation
Organic Phosphorus	OrgP	0.3 mg/L (10% of TP)	0.9 mg/L (30% of TP)	Professional recommendation
Total Nitrogen	TN	7.0 mg/L (sum of species)	7.0 mg/L (sum of species)	Average of available data = 6.48 mg/L; range of 1.40 – 11.6 mg/L
Ammonia*	NH_3	0.35 mg/L (5% of TN)	0.35 mg/L (5% of TN)	No measured DMR data. Based on the percent of St. Lucie and Caloosahatchee NH_3%
Nitrate + Nitrite	NOx	4.2 mg/L (60% of TN)	4.2 mg/L (60% of TN)	Based on the average percent of TN for FLA107972, FLA012977
Organic Nitrogen**	OrgN	2.45 mg/L (35% of TN)	2.45 mg/L (35% of TN)	Difference between TN and (NOx + NH_3)
Carbonaceous BOD5	CBOD5	3.0 mg/L	3.0 mg/L	Average of available data = 2.5 mg/L; range of 1.00 – 8.22 mg/L
Dissolved Oxygen	DO	6.0 mg/L	6.0 mg/L	Professional recommendation
Total Suspended Solids	TSS	2.0 mg/L	2.0 mg/L	Average of available data = 1.89 mg/L; range of 3.38 – 0.92 mg/L
Water Temperature	WTEM	20.0 °C October through March 30.0 °C April through September	20.0 °C October through March 30.0 °C April through September	Professional recommendation

* When both TN and NOx are available in raw data, ammonia concentrations will be calculated as: $NH_3 = 12\% \times (TN - NO_x)$
** When both TN and NOx are available in raw data, organic nitrogen concentrations will be calculated as: $OrgN = 88\% \times (TN - NOx)$

2.3 AGRICULTURAL IRRIGATION

Agricultural irrigation will be applied directly to the land surface. Agricultural irrigation time series will be developed using crop water demand, growth coefficients, and evapotranspiration data.

2.3.1 Agricultural Irrigation Water Demand

Using the FDACS FSAID12, the irrigated acreage of each crop category was determined for the Lake Okeechobee watershed model (***Figure 4***). Crops requiring irrigation in the Lake Okeechobee Watershed were classified into the following five crop categories: 1) sugarcane, 2) nurseries/ornamentals/vineyards, 3) citrus groves/other groves, 4) all

other crops (row and field crops), and 5) pasture. ***Table 15*** summarizes the total areas and irrigated areas by major crop category and growing season for 2023 from FSAID 12 geodatabase (FDACS, 2025) in the Lake Okeechobee Watershed.

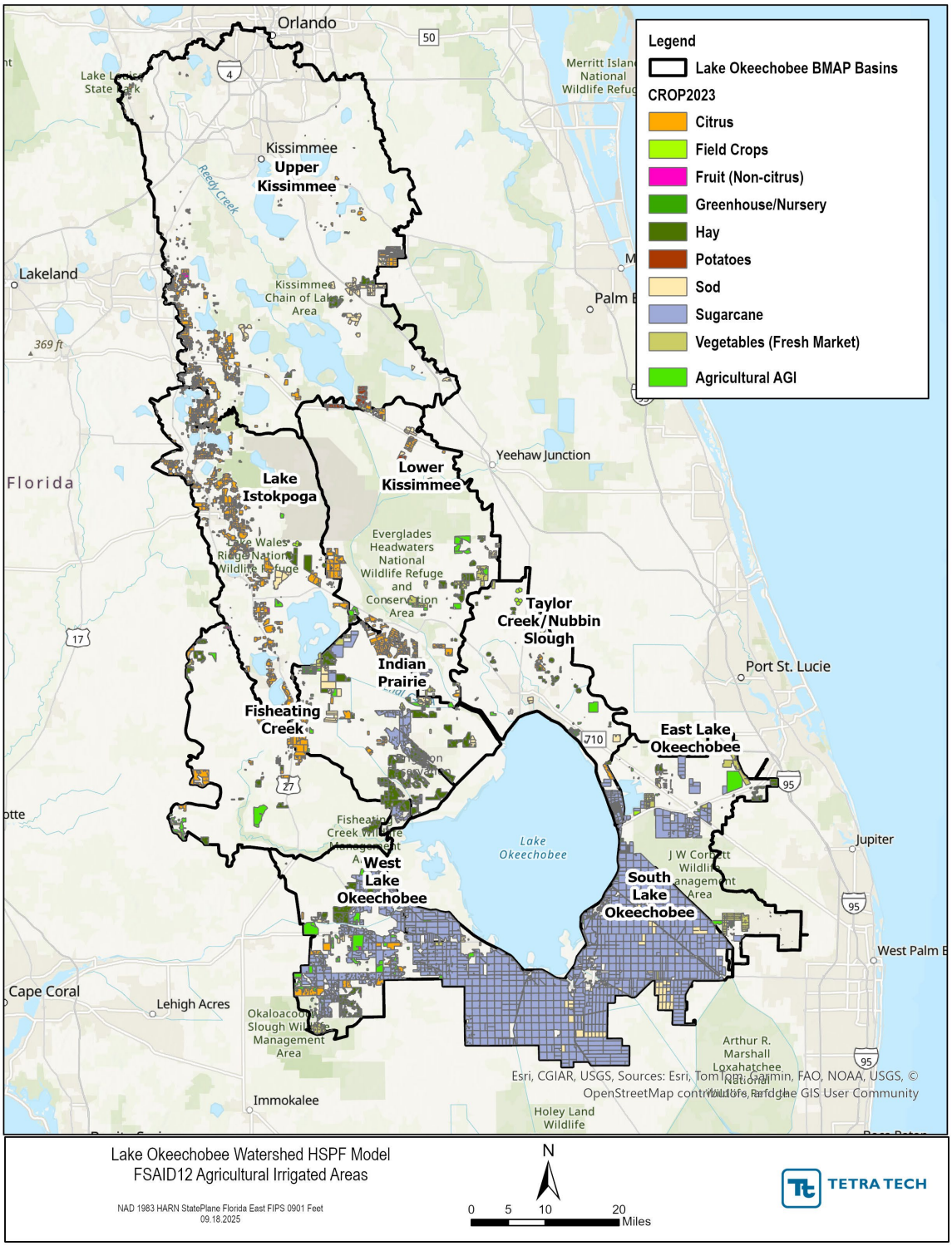

Figure 4. Spatial coverage of FSAID agricultural irrigated areas in 2023 in the Lake Okeechobee Watershed

Table 15. Irrigated acreage and growing season for the major crop categories in the Lake Okeechobee Watershed in 2023

Crop Category	Crop Sub-category	Growing Season	Irrigated Area (acres)
Sugar Cane	Sugar Cane	Perennial	413,690.1
Nurseries, Ornamentals, and Vineyards	Bamboo Caladium Container Nursery Field Nursery Greenhouse and Field Nursery Ornamentals Palm Nursery Tree Nurseries Sod	Perennial	37,756.9
Citrus Groves / Other Groves	Citrus	Perennial	104,882.1
Row and Field Crops	Fruit (non-citrus) Tropical Fruit Corn, Corn Silage, Field Corn, Vegetables, Greens, Sweet Corn Tomatoes Potatoes	September - March	23,520.6
Pasture	Hay Pasture Improved Pasture	Perennial	54,722.4
Total	**-**	**-**	**634,572.4**

For each major crop category, an associated monthly crop evapotranspiration coefficient was determined using information from various sources. The SFWMD Water Use Division uses a modified Blaney-Criddle equation to determine irrigation needs (SFWMD, Accessed 2025a; SFWMD, 2000). ***Table 16*** through ***Table 18*** show the monthly growth coefficient for perennial and annual crops. The monthly coefficients for perennial crops are based on the water needs of the plant based on the growth stage throughout the year (such as bloom, fruit set, fruit development, and fruit maturation (SFWMD, 2000; SFWMD, Accessed 2025a). The coefficients for the annual crops are based on the water demand of the plant at different stages in the three- or four-month growing cycle (such as planting, initiation of flowering, maturity, and harvest) (SFWMD, Accessed 2025a).

Table 16. Monthly growth coefficient for perennial crops

Crop	Source	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Citrus	SFWMD	0.63	0.66	0.68	0.70	0.71	0.71	0.71	0.71	0.70	0.68	0.67	0.64
Sugarcane	SFWMD	0.39	0.30	0.53	0.61	0.70	0.79	0.79	0.84	0.73	0.88	0.72	0.69
Pasture	SFWMD	0.46	0.60	0.63	0.68	0.70	0.53	0.56	0.58	0.52	0.53	0.49	0.44
Grapes	SFWMD	0.20	0.24	0.38	0.60	0.71	0.80	0.80	0.76	0.61	0.50	0.35	0.23

Table 17. Monthly growth coefficients for annual crops – three-month growing season

Crop	Source	Month 1 of Growing Season	Month 2 of Growing Season	Month 3 of Growing Season
Tomatoes	SFWMD	0.50	0.93	0.84
Potatoes	SFWMD	0.54	1.18	1.32
Small Vegetables	SFWMD	0.54	0.81	0.62
Corn	SFWMD	0.57	0.99	1.03
Melon	SFWMD	0.56	0.79	0.72
Sweet Corn	SFWMD	0.6	1.02	1.04

Table 18. Monthly growth coefficients for annual crops – four-month growing season

Crop	Source	Month 1 of Growing Season	Month 2 of Growing Season	Month 3 of Growing Season	Month 4 of Growing Season
Tomatoes	SFWMD	0.47	0.76	1.00	0.80
Potatoes	SFWMD	0.46	0.96	1.33	1.30
Small Vegetables	SFWMD	0.48	0.77	0.81	0.57
Corn	SFWMD	0.52	0.85	1.06	1.95
Melone	SFWMD	0.52	0.75	0.79	0.71
Sweet Corn	SFWMD	0.55	0.9	1.07	1.03

Also, the Agricultural Field-Scale Irrigation Requirements Simulation (AFSIRS) model provided information on the irrigated and total root depths by crops, crop water use coefficients, and allowable water use depletions for perennial and annual crops ***Table 19*** and ***Table 20*** (SJRWMD, 1990; SJRWMD, 2007).

Table 19. Perennial crops water use coefficient (Kc) data by month from AFSIRS

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Citrus	0.70	0.70	0.70	0.80	0.88	0.97	1.05	1.05	1.05	1.05	1.05	0.80
Sugarcane	0.80	0.60	0.55	0.80	0.95	1.00	1.05	1.05	1.05	1.00	0.95	0.90
Pasture	0.65	0.70	0.75	0.90	0.90	0.95	0.95	0.95	0.90	0.80	0.70	0.65
Container nursery	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Field Nursery	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Sod	0.92	0.92	0.92	0.98	0.92	0.92	0.88	0.88	0.88	0.88	0.88	0.88
Grapes	0.40	0.40	0.55	0.75	0.80	0.80	0.80	0.80	0.80	0.80	0.70	0.50
Peaches	0.70	0.75	0.80	0.85	0.90	1.00	1.00	1.00	0.95	0.80	0.80	0.70
Blueberry	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Table 20. Root zone and water use coefficient data (Kc) for annual crops from AFSIRS

Crop	Minimum Irrigated Crop Root Depth at Beginning of Growing Season (in)	Maximum Irrigated Crop Root Depth at Peak Growth Stage (in)	Kc for Root Depth at Beginning of Growing Season	Kc for Root Depth at Peak Growth Stage
Tomatoes	9	12	1.05	0.75
Potatoes	12	18	1.05	0.70
Small Vegetables	8	12	1.00	0.85
Corn	12	18	1.05	0.55
Cabbage	8	12	1.00	0.85
Melons	8	18	0.95	0.65
Radish	6	8	0.80	0.75

Also, the University of Florida – Institute of Food and Agricultural Science (IFAS) reported crop coefficients for perennial and annual crops that are commonly grown in Florida (Kisekka, 2013). ***Table 21*** and ***Table 22*** show the crop coefficients for the major perennial and annual crops in Florida, respectively.

Table 21. Typical crop coefficient (Kc) for perennial crop in Florida

Month	Citrus	Mango	Lychee
January	0.79	0.60	0.40
February	0.86	0.50	0.40
March	0.93	0.45	0.90
April	0.97	0.45	1.20
May	1.03	0.50	1.20
June	1.05	0.50	0.85
July	1.05	0.60	0.85
August	1.03	0.80	0.40
September	1.00	0.80	0.40
October	0.95	0.70	0.40
November	0.87	0.70	0.40
December	0.79	0.60	0.40

Table 22. Typical crop coefficients (Kc) at various growth stages for annual crops commonly grown in Florida

Crop	Initial Stage	Mid-Stage	Late-Stage
Tomatoes	0.40	0.90	0.75
Cabbage	0.20 - 0.40	1.05	0.95
Sweet corn	0.20 – 0.40	1.10	1.00

For sugar cane and pasture, the monthly crop evapotranspiration coefficients were determined using a monthly average of the data from FDACS and AFSIRS presented in ***Table 16*** and ***Table 19***. For nurseries/ornamentals/vineyards/sod, the monthly crop evapotranspiration coefficients were determined from the AFSIRS data in ***Table 19***. For citrus groves/other groves, and for all other crops (perennial crops: blueberry, mango, and lychee) the monthly evapotranspiration coefficients were determined using a monthly average of the data from FDACS, AFSIRS, and IFAS (***Table 16*** , ***Table 19***, and ***Table 21***). For all other crops (annual crops), the monthly crop evapotranspiration coefficients were determined using a weighted average of the various crop coefficients (corn, small vegetables, potatoes, tomatoes, cabbage, melons, sweet corn, and radish) found in ***Table 17***, ***Table 18***, ***Table 20***, and ***Table 22***. Since this category includes crops with different growing seasons, only the crops growing in any specific month were used for weighing in that month. ***Table 23*** summarizes the monthly crop evapotranspiration rates by major crop category.

Table 23. Monthly crop coefficients (Kc) rate for major crop categories in the Lake Okeechobee watershed model

Month	Sugar Cane	Nurseries, Ornamentals, Vineyards, and Sod	Citrus Groves/ Other Groves	All Other Crops	Pasture
January	0.60	0.96	0.71	0.72	0.56
February	0.45	0.96	0.74	0.65	0.65
March	0.54	0.96	0.77	0.72	0.69
April	0.71	0.99	0.82	0.84	0.79
May	0.83	0.96	0.87	0.87	0.80
June	0.90	0.96	0.91	0.83	0.74
July	0.92	0.94	0.94	0.85	0.76
August	0.95	0.94	0.93	0.80	0.77
September	0.89	0.94	0.92	0.70	0.71
October	0.94	0.94	0.89	0.71	0.67
November	0.84	0.94	0.86	0.75	0.60
December	0.80	0.94	0.74	0.71	0.55

The FSAID 12 geodatabase provided information on irrigated crop types, irrigation systems, and irrigated acres. Tetra Tech used the efficiency of different irrigation methods in the AFRIS model (SJRWMD, 2007) (***Table 24***) to calculate area-weighted irrigation efficiency for each major crop category in the Lake Okeechobee watershed (

Table 25).

Table 24. Irrigation efficiency for the eight irrigation methods used in the AFRIS model

Irrigation System	AFSIRS Efficiency
Center Pivot and Linear	75%
Drip	85%
Micro Spray	80%
Impact Sprinkler	75%
Container Nursery	20%
Portable Gun and Traveling Gun	70%
Gravity Systems	50%

Table 25. Area-weighted irrigation efficiency for each major crop category

Crop Category	Irrigation Efficiency
Sugar Cane	50%
Nurseries, Ornamentals, and Vineyards	62%
Citrus Groves / Other Groves	81%
Row and Field Crops	69%
Pasture	55%

2.3.2 Agricultural Irrigation Water Supply Sources

The permitted wells and boreholes shapefile was downloaded from the SFWMD Geospatial Open Data portal to establish irrigation sources in the model. This dataset provides information on the source of groundwater pumping, such as the Floridan aquifer system, Upper Floridan aquifer, surficial aquifer, and undefined aquifer. A total of 101 permitted wells and boreholes for withdrawal purposes were identified in the Lake Okeechobee Watershed. Among these, 55 were inactive, and 46 had a status of no data. ***Figure 5*** shows the type of aquifer system associated with the wells and boreholes classified as having “no data” status. The information on pump capacity was not provided in the permitted shapefile database. In agricultural areas that did not contain permitted wells and boreholes, it was assumed that withdrawal from local reaches and canals was the primary source of irrigation water.

Tetra Tech downloaded the above-ground impoundment (AGI) GIS shapefile from the SFWMD portal (SFWMD, 2018a). AGIs are surrounded by a dike, and water is pumped into them for temporary storage. The dataset was filtered for agricultural land use, and out of 242 permits, 184 were agricultural permits with active permit status. However, 158 of those reported their final activity date before 2009, and the remaining 26 permits reported final activity between 2009 and 2014. No information regarding pump capacity was publicly available. ***Figure 5*** shows the location of 184 active AGI permits in the Lake Okeechobee watershed. Also, Tetra Tech downloaded the consumptive use permit GIS shapefile from the SFWMD portal, but the database did not indicate the source of the irrigation water.

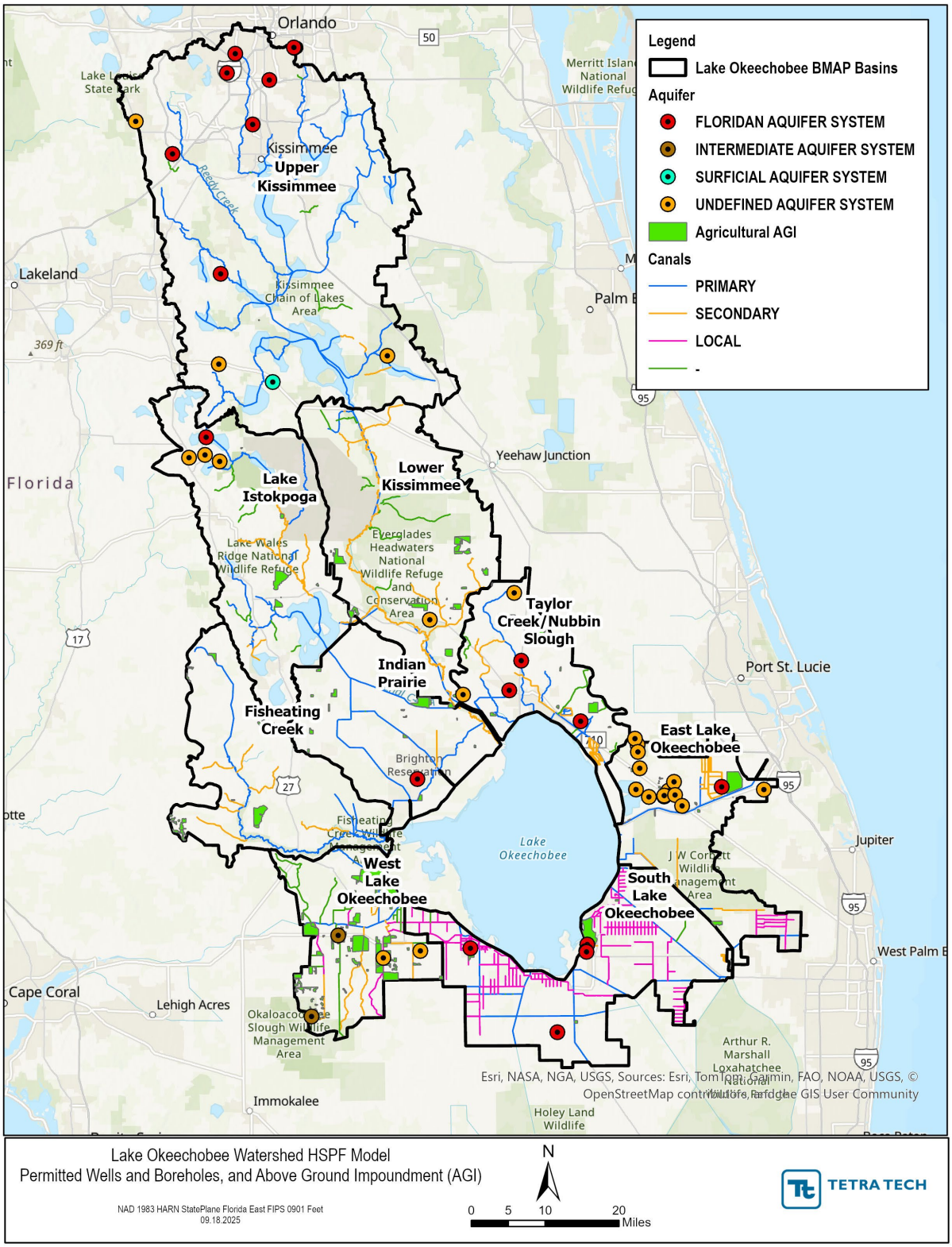

Figure 5. Spatial coverage of permitted wells and boreholes, and agricultural AGIs in the Lake Okeechobee Watershed

2.4 REGIONAL PROJECT OPERATIONS

2.4.1 Indian Prairie Subwatershed

According to 2025 South Florida Environmental Report, current SFWMD regional projects (operation and maintenance phase) within the Indian Prairie subwatershed are Buck Island Ranch, West Waterhole, Brighton Valley dispersed water management (DWM) (***Figure 6***) (SFWMD, 2025). Tetra Tech received the operational plans for the following projects in the Indian Prairie basin:

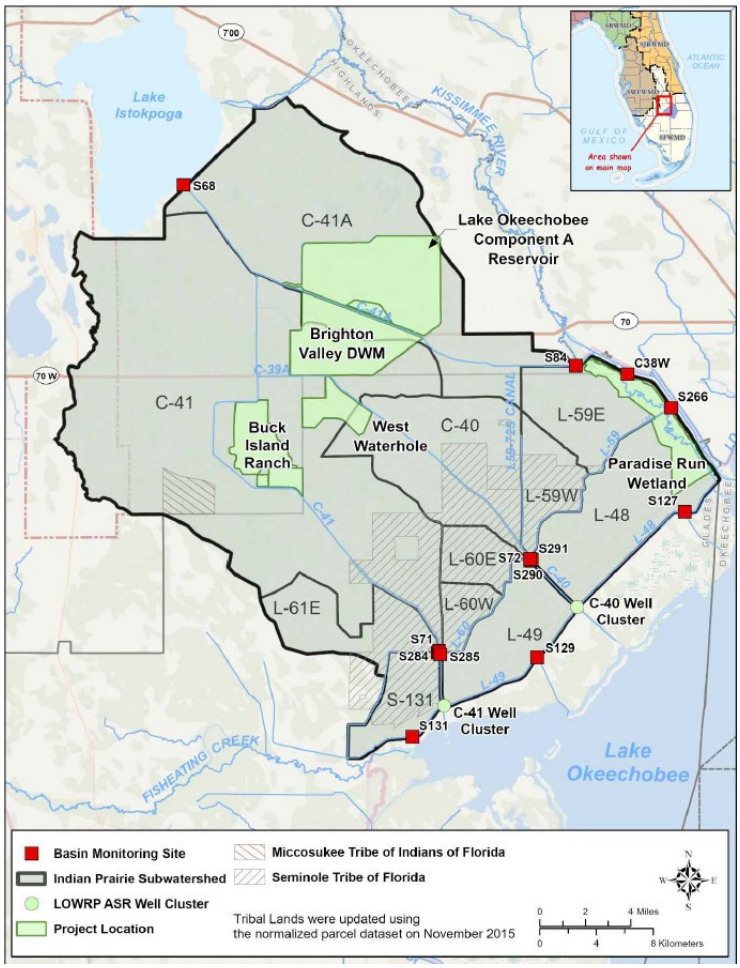

Figure 6. Current SFWMD projects in the Indian Prairie subwatershed (SFWMD, 2025)

2.4.1.1 Buck Island Ranch (BIR)

The BIR Operations Plan outlines a water management project covering approximately 4,796 acres, which includes a network of ditches and wetlands aimed at optimizing water retention and nutrient management (SFWMD, Accessed May 2025) (***Figure 7***).

NEPES 1 area encompasses approximately 3,748 acres of improved pasture and consists of a network of culvert-risers for maximizing runoff and nutrient retention of both rainfall runoff and irrigation from C-41 canal during dry season irrigation. BIR 20D, BIR 35, BIR 29, BIR 30, and BIR CDEM all discharge from the project and water eventually returns to C-41. NEPES 2 area consists of water control structures previously installed in 2016. The NEPES is pumping water from the

C-41 Canal into two cells (NEPES2 Cell 1 and Cell 2) for pasture land phosphorus reduction via BIR-IN. PC 30, BIR 61, and 62 are outfalls that are adjacent to C-41. Tetra Tech received daily inflow volumes (acre-feet) from the BIRGROVEIN site at C-41 canal from June 11, 2021, to June 13, 2021. Water quality data for TN and TP were collected at BIR-IN (22 measurements) and BIR-OUT (38 measurements) stations from 2017 to 2023.

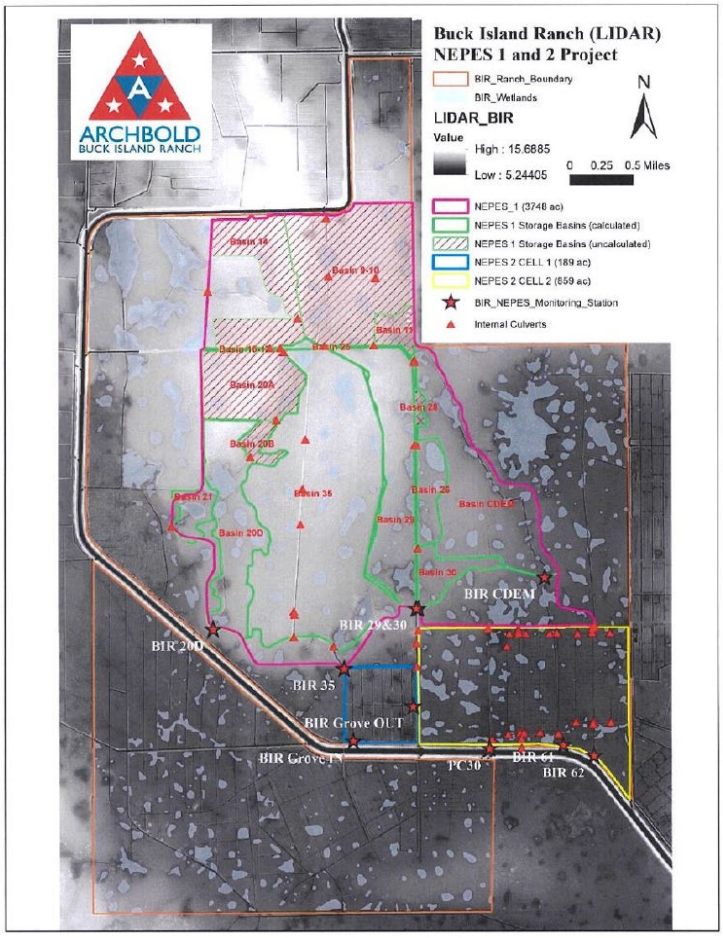

Figure 7. BIR project site map and structure location

2.4.1.2 Brighton Valley

Brighton Valley has 9,998 acre-feet of storage capacity adjacent to C-41A and C-40 canals. The purpose of the project is to divert excess water from the C-41A canal via multiple intake pump stations, with a total capacity of 560 cfs. The pump station will discharge into upstream impoundments and from there to the downstream impoundment through several control structures. Two outfalls, CS-02 and CS-03, will return water to the C-41A canal (via PC-16 and PC-19 structures). Another outfall CS-01 will release water into an existing canal on Lykes property and connects to the C-40 canal (SFWMD, 2018b) (***Figure 8***). The aerial imagery showed that Brighton Valley started operating in early 2020 (***Figure 9***).

Tetra Tech received daily inflow volumes (acre-feet) from the inflow pumping station in the C-41A canal into the impoundment from May 2020 to December 2023, and outflow structures (CS-01, CS-02, and CS-03) back to the C-41A canal. Water quality data were recorded at station BV-IN and BV-OUT (NO_x, TKN, and TP) from August 2020 to December 2023.

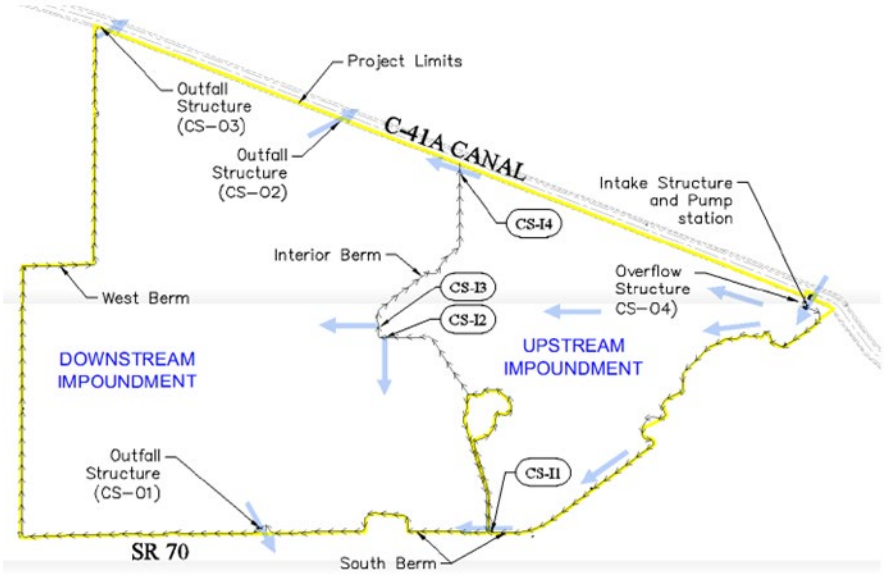

Figure 8. Brighton Valley overview

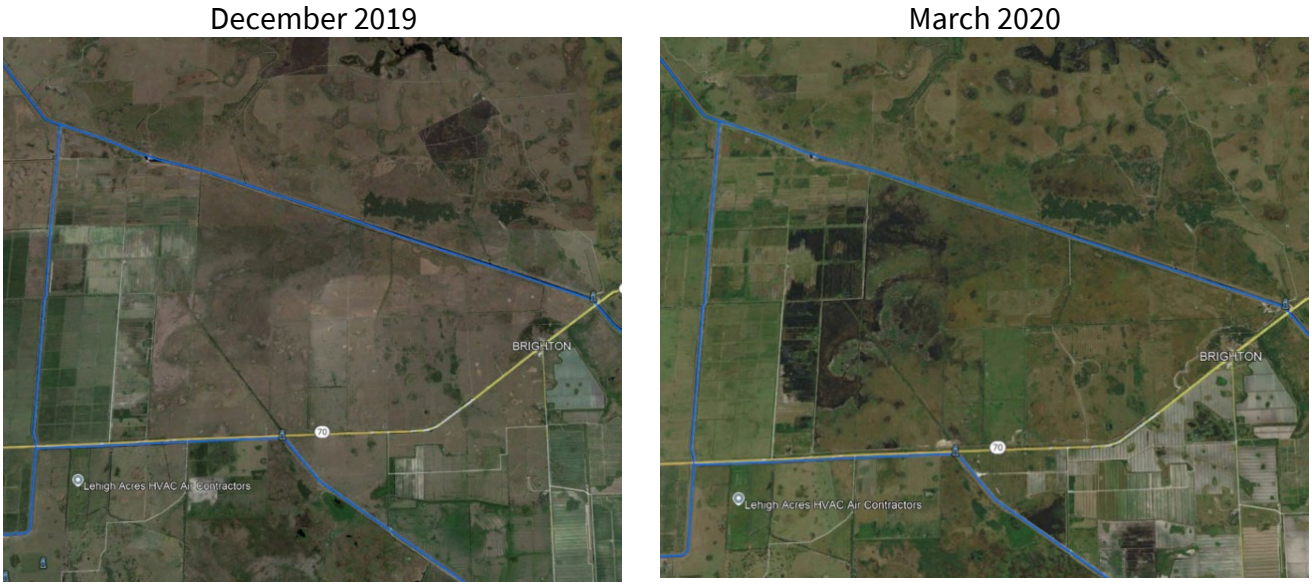

Figure 9. Aerial imagery of the Brighton Valley operational project (accessed in May 2025)

2.4.1.3 West Waterhole

The West Waterhole project encompasses approximately 2,500 acres of existing surface water impoundment designed to assimilate nutrients by detaining and retaining excess stormwater runoff diverted from the regional water management system (SFWMD, 2020) (***Figure 10***). Tetra Tech received daily inflow volumes (acre-feet) for LYKEGROVE and LYKESHYDRAULIC sites from February 2007 to September 2023, and outflow volumes for LYKESDISCHARGE from January 2007 to September 2023. Water quality data were collected from the inflow pumps at the WWH-GROVE and WWH-IN stations and the outlet station at WWH-OUT for TN and TP from 2014 to 2023.

Figure 10. Location of the West Waterhole operational project (SFWMD, 2020)

2.4.2 Taylor Creek/Nubbin Slough Subwatershed

According to 2025 South Florida Environmental Report, current SFWMD regional projects (operation and maintenance phase) within the Taylor Creek/Nubbin Slough subwatershed are Dixie Ranch, Lakeside Ranch stormwater treatment area (STA), Nubbin Slough STA, and Taylor Creek STA. Also, five hybrid wetland treatment technology (HWTT) in the Taylor Creek/Nubbin Slough subwatershed are Lemkin Creek HWTT, Wolff Ditch HWTT, Grassy Island HWTT, Mosquito Creek HWTT, and Nubbin Slough HWTT which are led by FDACS (***Figure 11***) (SFWMD, 2025).

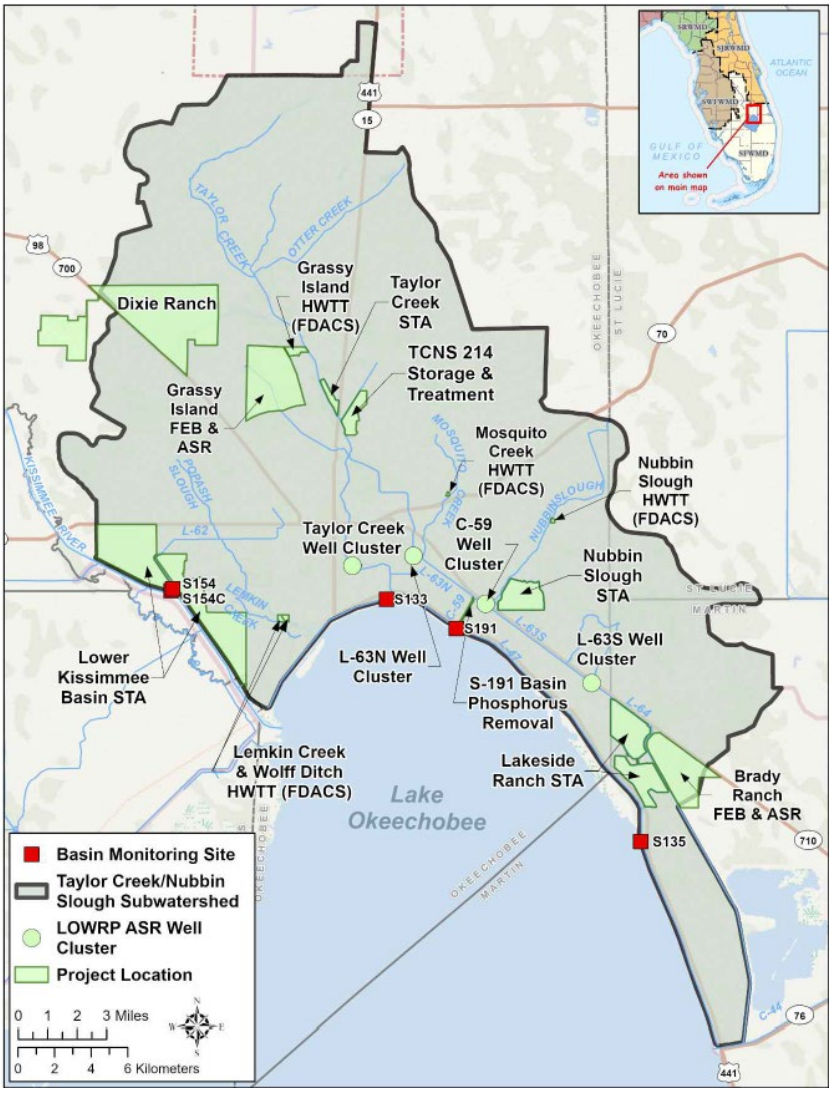

Figure 11. Current SFWMD projects in the Taylor Creek/Nubbin Slough subwatershed (SFWMD, 2025)

2.4.2.1 Dixie Ranch

Dixie Ranch consists of five water management areas to store excess water and reduce nutrient loads (SFWMD, Accessed 2025b). Water quality data are available at US 98 Dixie Ranch access road Chandler Hammock Slough station (CH15363412) for TP from July 2009 to November 2012 (total of 16 samples) (***Figure 12***). The Dixie Ranch project has components in both the Taylor Creek/Nubbin Slough and Lower Kissimmee subwatersheds.

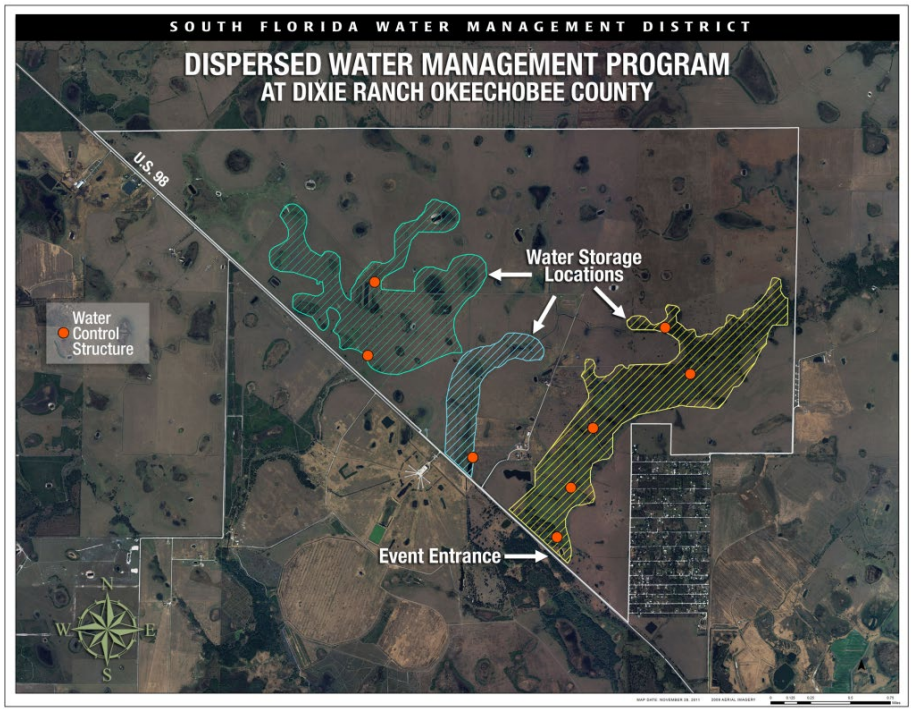

Figure 12. Dixie Ranch water storage locations (SFWMD, Accessed 2025c)

2.4.2.2 Lakeside Ranch STA (LRSTA)

The purpose of the project is to treat runoff from the S-191 basin, which eventually discharges into Lake Okeechobee (SFWMD, 2023). The project was implemented in three construction phases. Phase I was completed in 2012 and encompasses treatment cells 1,2, and 3 (LRSTA- N). Phase II was completed in September 2019, and includes treatment cells 4,5,6,7, and 8 (LRSTA-S). Phase III was completed in August 2021, which included the construction of the S-191A pump station (***Figure 13***) (SFWMD, 2023).

Inflow control facilities:

- **S-650 pump station**: The pump station is collecting water from the L-64 canal (which collects water from the C-59 canal in the S-191 basin) to the LRSTA distribution canal with an inflow capacity of 250 cfs (***Figure 13***). Flow data for S-650 pump station are available since April 12, 2013 (SFWMD, Accessed June 2025a). Water quality data are available from June 2012 to June 2016 provided by DEP.
- **S-191A pump station**: The S-191A pump station is located in S-191 basin at the intersection of the L-47 and C-59 canals, is designed for multiple functions, including flood control for the S-135 basin and delivering water from Lake Okeechobee to the LRSTA for maintaining treatment cell hydration during dry periods. The station has a total flow capacity of 450 cfs. The pump station operates by drawing water directly from the L-47 Canal and discharging it into the C-59 Canal. Flow data for S-191A pump station is available since November 28,2021 (SFWMD, Accessed June 2025b). Water quality data were provided by DEP and are available from January 2008 to June 2016.

Outflow control structures:

- **S-666A**: controls outflow from Cell 6 to L47_1 canal : flow data are available since July 10, 2020 (SFWMD, Accessed June 2025b). TP (mg/L) is available since October 2018 and TN (mg/L) is available from December 2020 (SFWMD, Accessed June 2025b).
- **S-668A**: controls outflow from Cell 7 to LRSTA outlet canal S3: flow data are available since July 10, 2020. TP load (kilograms/day), TP (mg/L) and TN (mg/L) are available since July 2020 (SFWMD, Accessed June 2025b).
- **S-670A:** controls outflow from Cell 8 to LRSTA outlet canal S1: flow data are available since July 10, 2020. TP load (kilograms/day) are available since December 2020, TP (mg/L) and TN (mg/L) are available since July 2019 (SFWMD, Accessed June 2025b).

LRSTA-S outlet canal: The pump station operates by drawing water directly from the L-47 Canal and discharging it into the C-59 Canal through culvert S-675. Flow and water quality data are not available at S-675.

Figure 13. LRSTA structures and canals (SFWMD, 2023)

2.4.2.3 Nubbin Slough/ New Palm STA

Nubbin Slough is designed to remove phosphorus loads from Nubbin Slough and surrounding watershed prior to discharge back into Nubbin Slough and on to Lake Okeechobee. The inflow pump station (S-385_P) collects water from Nubbin Slough (***Figure 14***). Flow data are available since September 2010 from the pump station S385_P (SFWMD, Accessed June 2025b). Water quality data (TP, Po_4, NH_3, total Kjeldahl nitrogen [TKN], and NO_x) were provided by DEP from September 2010 to June 2016. Tetra Tech downloaded DO, TP, PO_4, NH_3, and TN from 2010 to 2023 from DBHYDRO Insights (SFWMD, Accessed June 2025b). Discharge of treated water to Nubbin Slough will be through three uncontrolled

reinforced concrete pipes (S-387A, B, and C) (SFWMD, 2005), with flow data available since February 2011 (SFWMD, Accessed June 2025b). Water quality data including TP, PO_4, NO_x, NH_3, and TKN from 2012 to 2016 were provided by DEP. Tetra Tech downloaded water quality data for DO, water temperature, NH_3, TP, PO_4, and TN from DBHYDRO Insights for S-387A, B, and C from 2015 to 2023 (SFWMD, Accessed June 2025b).

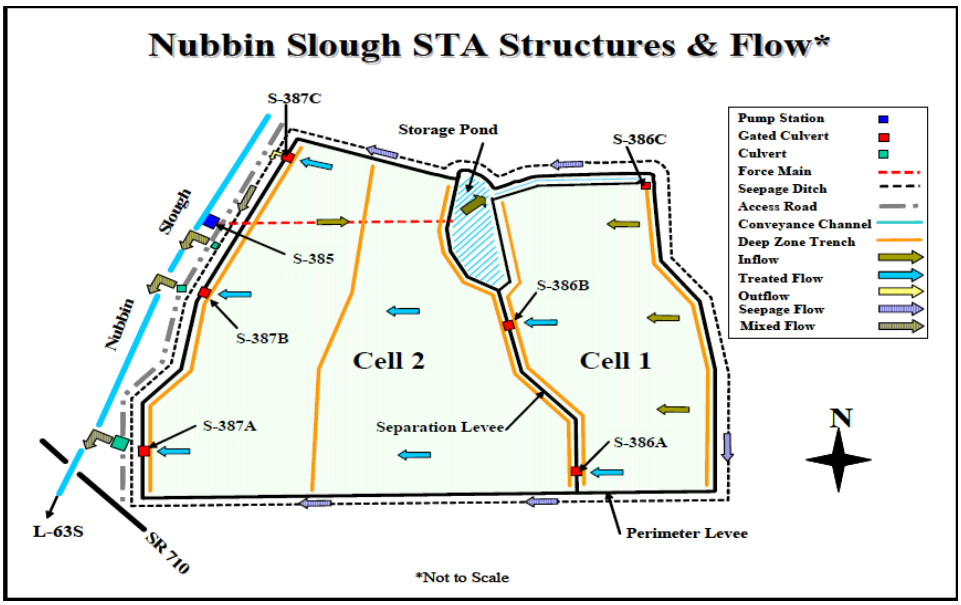

Figure 14. Schematic of Nubbin Slough STA (SFWMD, 2005)

2.4.2.4 Taylor Creek STA

The purpose of the Taylor Creek STA is to collect and treat stormwater from the watershed (in S-191), prior to discharge back into Taylor Creek and on to Lake Okeechobee (***Figure 15***). The primary water quality treatment function is to reduce the mass and concentration of TP in Taylor Creek. In addition to the reduction of TP loads, the Taylor Creek STA will provide additional water quality and quantity benefits to downstream waters. The STA will remove suspended solids, dissolved and particulate oxygen-demanding materials, TN, metals, and pesticides that would otherwise flow into the lake (USACE, 2009). The S-390 pump station, designed for a peak flow rate of 24 cfs, collects water from Taylor Creek. Flow data are available from February 2007 to May 2025 (SFWMD, Accessed June 2025b). S-392 is an outflow culvert located in the southwest corner of the STA in the perimeter levee. Flow data are available since February 2007 (SFWMD, Accessed June 2025b). DEP provided water quality data for NO_x, NH_3, TKN, TP, and PO_4 from 2008 through 2016 for both S-390 and S-392. Also, NH_3, PO_4, TP, and TN data were available and downloaded from DBHYDRO Insights (SFWMD, Accessed June 2025b) from 2016 through 2023 from both inflow and outflow pumping stations. Tetra Tech downloaded DO and temperature data since October 2006 from DBHYDRO Insights (SFWMD, Accessed June 2025b).

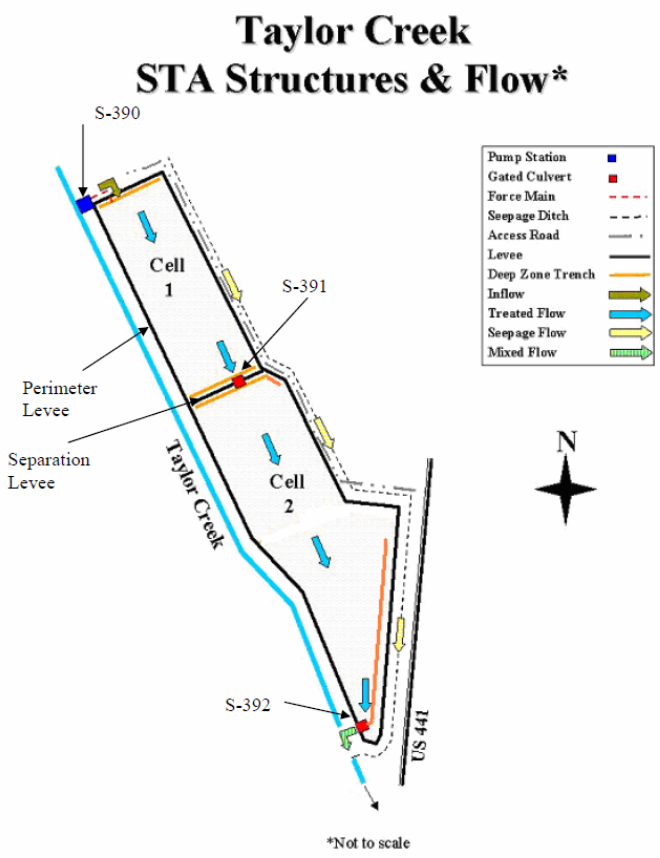

Figure 15. Schematic of Taylor Creek STA structures and flow directions (USACE, 2009)

2.4.2.5 FDACS Hybrid Wetland Treatment Technology (HWTT)

FDACS provided Tetra Tech the operational flows for the HWTT projects in the Taylor Creek/Nubbin Slough subwatershed. These projects will be represented in the HSPF model.

- Lemkin Creek HWTT period of record March 9, 2010 through December 31, 2023.
- Wolff Ditch HWTT period of record March 9, 2010 through December 31, 2023.
- Grassy Island HWTT period of record July 11, 2011 through December 3,1 2023.
- Mosquito Creek HWTT period of record November 20, 2008 through December 31, 2023.
- Nubbin Slough HWTT period of record November 21, 2008 through December 31, 2023.

2.4.3 Upper Kissimmee Subwatershed

According to 2025 South Florida Environmental Report, current SFWMD regional projects (operation and maintenance phase) within the Upper Kissimmee subwatershed are Eagle Haven Ranch, Partin Family Ranch, Gardner-Cobb Marsh Restoration, Rough Island, and Rolling Meadows Wetland Restoration Phase I (***Figure 16***) (SFWMD, 2025).

2.4.3.1 Eagle Haven Ranch

The project consists of five water management areas covering approximately 730 acres to retain excess water (through water control structures, including risers and culverts) and reduce nutrient loads. There are no data available regarding the pumping structures and water quality stations.

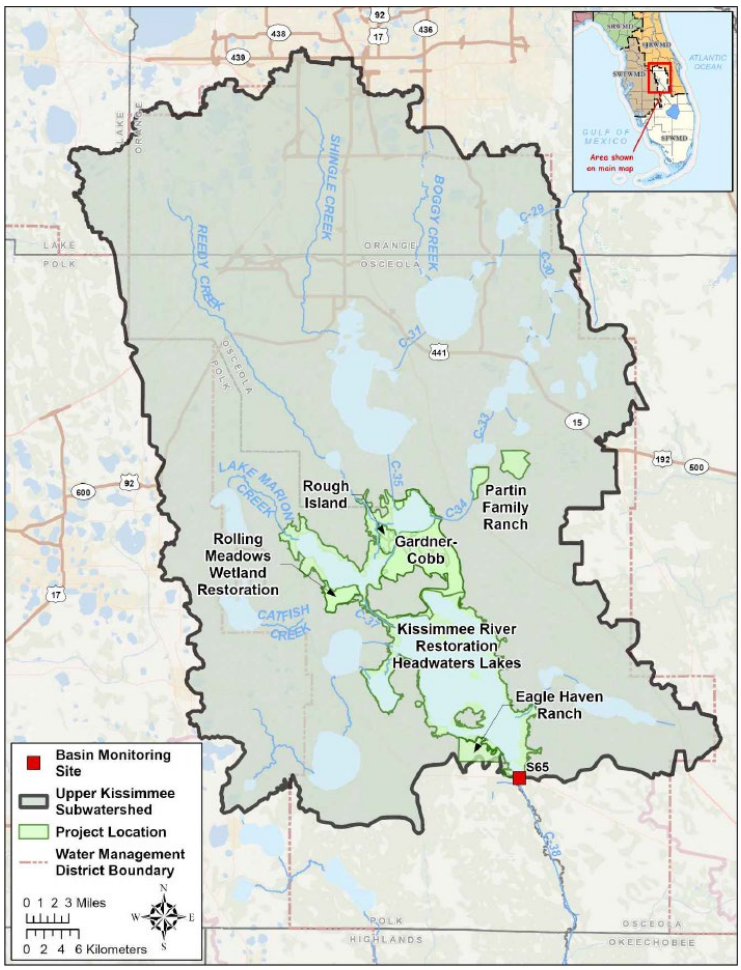

Figure 16. Current SFWMD regional in the Upper Kissimmee subwatershed (SFWMD, 2025)

2.4.3.2 Partin Family Ranch

Partin Family Ranch is located near Lake Gentry. The purpose of this project is to manage water retention and reduce nutrient loads in these areas. The project targets specific hydrological conditions, with Big Bend Swamp aiming for water levels of 18–24 inches above natural ground and Gentry Marsh targeting 12–18 inches. This is intended to restore the natural water levels that have been altered over time. The project completed construction and began operations in water year 2024 (SFWMD, 2025); therefore, it will not be included in the model.

2.4.4 Lower Kissimmee Subwatershed

According to 2025 South Florida Environmental Report, current SFWMD regional projects (operation and maintenance phase) within the Lower Kissimmee subwatershed are El Maximo Ranch, Dixie Ranch, and Abington Preserve (Triple A

Ranch) (***Figure 17***) (SFWMD, 2025). Tetra Tech received the operational plan for El Maximo Ranch. The Dixie Ranch project has components in both the Taylor Creek/Nubbin Slough and Lower Kissimmee subwatersheds (**Section 2.4.2.1**).

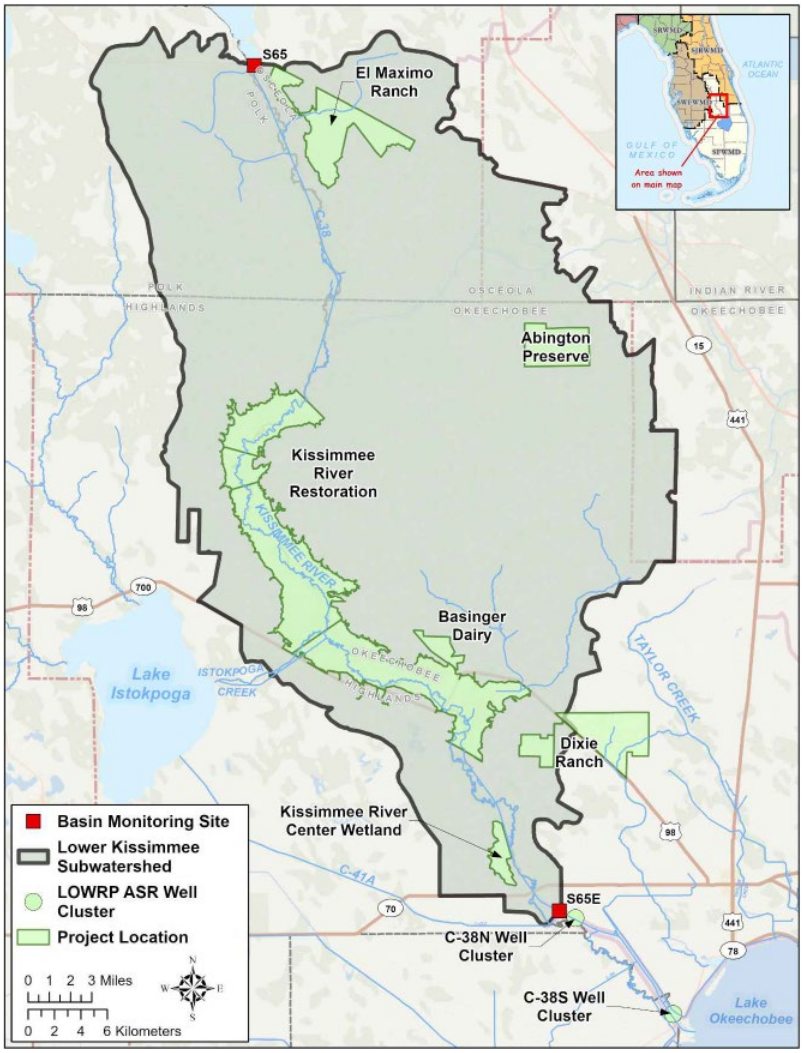

Figure 17. Current SFWMD regional projects in the Lower Kissimmee subwatershed (SFWMD, 2025)

2.4.4.1 El Maximo Ranch

The purpose of the El Maximo Ranch project is to treat excess surface water from the regional system on private agricultural lands, preventing it from flowing into Lake Okeechobee. The project is bordered by the Kissimmee River (C-38 Canal) to the west, State Road 60 to the north, and Kissimmee Prairie Preserve State Park to the south (Higgins Engineering, 2020) (***Figure 18***). The project uses two water sources for diversion: the Kissimmee River and Blanket Bay Slough. Due to their distance and lower elevation compared to the basins they discharge into, three canals and four pump stations have been designed to transport the water flows and provide the necessary hydraulic head for effective diversion operations. No flow data and water quality data are available for pump stations.

Figure 18. Layout of El Maximo Ranch project basins, berms, control structure, overflow structure, pump stations (Higgins Engineering, 2020)

2.4.5 Fisheating Creek Subwatershed

According to the 2025 South Florida Environmental Report, current SFWMD regional projects (operation and maintenance phase) within the Fisheating Creek subwatershed are XL Ranch and Llano Ranches. Also, there is one floating aquatic vegetation tilling (FAVT) project in the Fisheating Creek subwatershed led by FDACS (***Figure 19***) (SFWMD, 2025). Tetra Tech received the operational plan for the XL Ranch project.

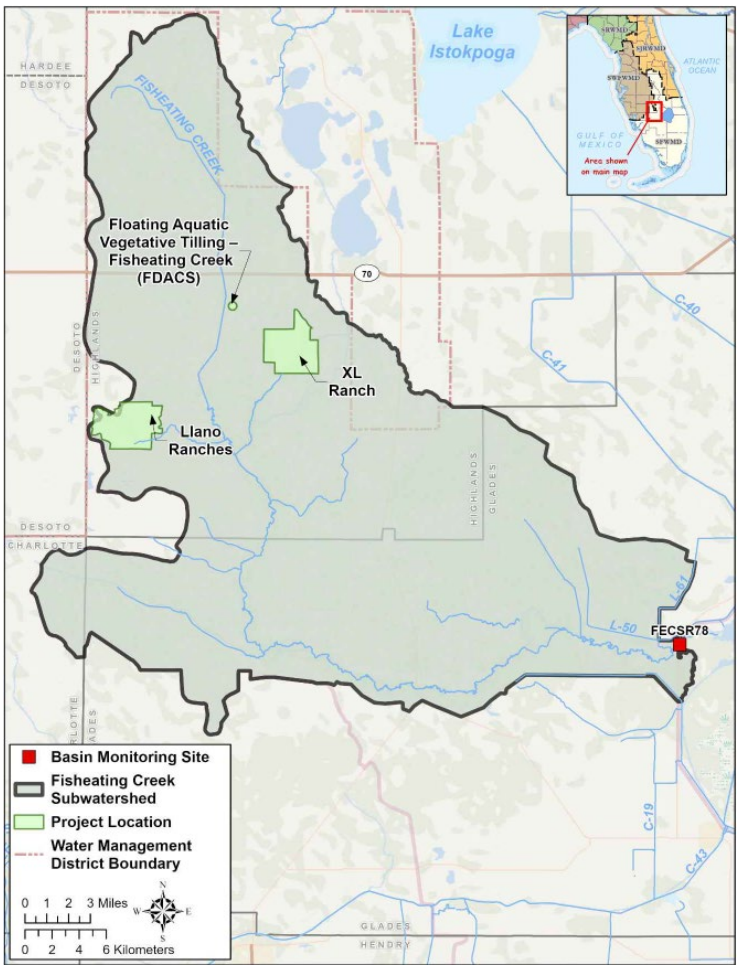

Figure 19. Current SFWMD regional projects in the Fisheating Creek subwatershed (SFWMD, 2025)

2.4.5.1 XL Ranch

The XL Ranch project has a total area of about 765 acres, which includes a 580-acre reservoir and associated control infrastructure. The purpose of the project is to create and maintain storage capacity for water retention and nutrient load reduction (SFWMD, Accessed 2025d). There are no data available for inflow and outflow discharges for inclusion in the model.

2.4.5.2 FDACS FAVT

FDACS provided Tetra Tech the operational flows for the FAVT project in the Fisheating Creek subwatershed with a period of record July 1, 2016 through December 31, 2023. The project will be represented in the HSPF model.

2.4.6 Lake Istokpoga Subwatershed

According to the 2025 South Florida Environmental Report, current SFWMD regional projects (operation and maintenance phase) within the Lake Istokpoga subwatershed are Rafter T Ranch, and Aguaculture – Lake Istokpoga (***Figure 20***) (SFWMD, 2025). Tetra Tech did not receive operational plans for these projects. Rafter T Ranch is a public–private, passive storage project adjacent to Arbuckle Creek that captures stormwater runoff and direct rainfall across more than 2,600 acres of low-lying pastures and reservoirs (SFWMD, 2025).

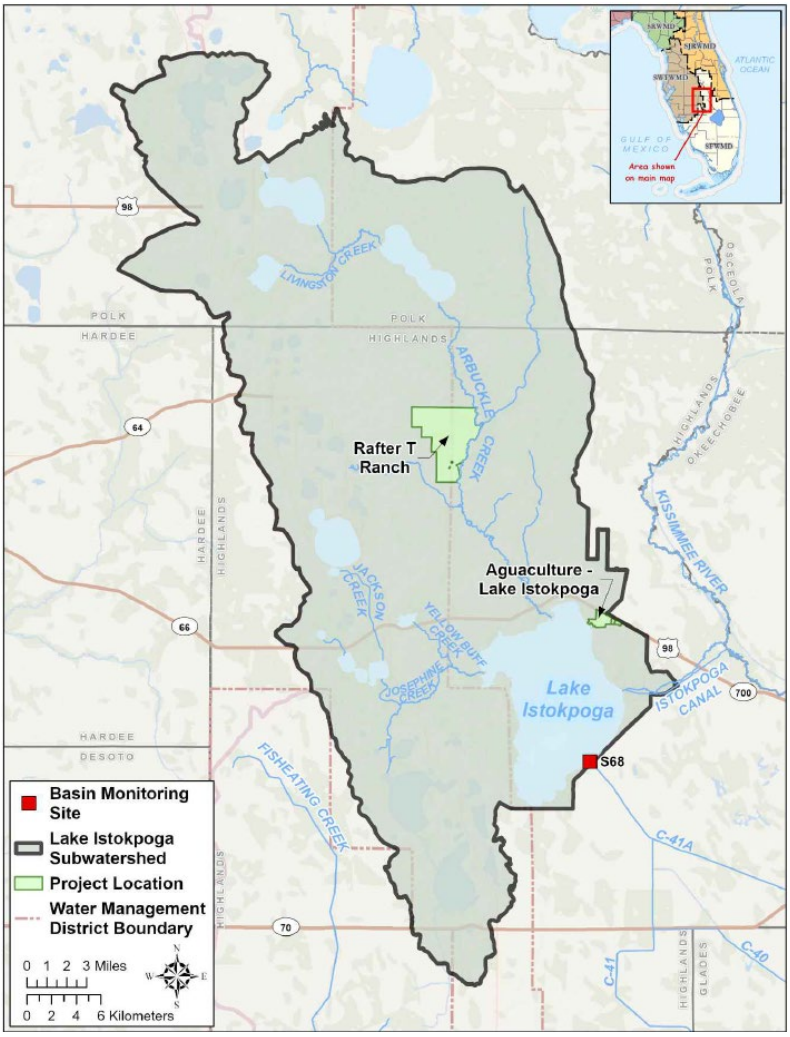

Figure 20. Current SFWMD regional projects in the Lake Istokpoga subwatershed (SFWMD, 2025)

2.4.7 West Lake Okeechobee Subwatershed

According to the 2025 South Florida Environmental Report, the current SFWMD regional project (operation and maintenance phase) within the West Lake Okeechobee subwatershed is Nicodemus Slough (***Figure 21***) (SFWMD, 2025). Tetra Tech received the operational plan for the Nicodemus Slough project.

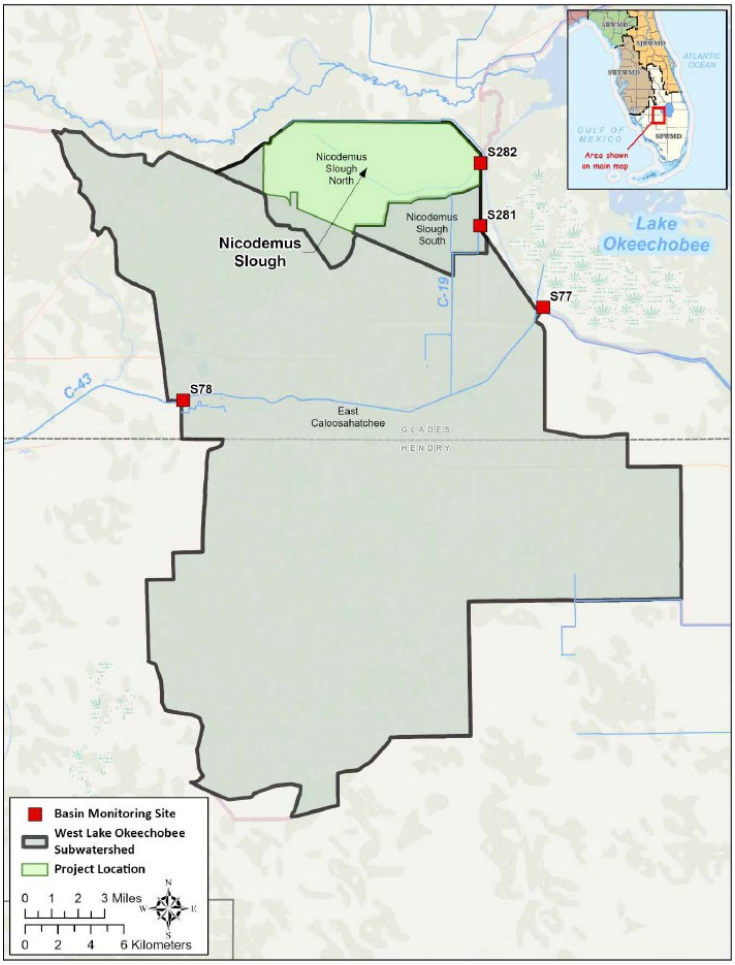

Figure 21. Current SFWMD regional projects in the West Lake Okeechobee subwatershed (SFWMD, 2025)

2.4.7.1 Nicodemus Slough

The primary purpose of this project is to remove water from Lake Okeechobee through the C-5 culvert and pump (inflow control facilities) to Nicodemus Slough when Lake Okeechobee levels require discharges to the estuaries due to the lake's regulation schedule (SFWMD, 2013) (***Figure 22***). The project has been operational since 2015 (SFWMD, 2025). The flow time series is available from September 1993 to May 2017 for the C-5 culvert.

Outflow control facilities

The C-5 culvert will be opened to allow water flow back to the lake when the project pumps are not being operated and water level in the Nicodemus Flowage Easement at the C-5 is above its modified regulation schedule or surface water measured at NS-01 is above 16 feet National Geodetic Vertical Datum of 1929 (NGVD). The S-342 structure will open to the C-19 canal when the water level in Nicodemus Flowage Easement at the land side of C-5 is above its modified regulation schedule or surface water measured at NS-01 is above 16 feet NGVD, and stages in Lake Okeechobee prevent releases through culvert C-5 into the lake. Flow data timeseries are available from July 1991 to the present. Water quality data were collected from 2011 to 2023 at S342 for water temperature, DO, TN, and TP from 2008 to 2023.

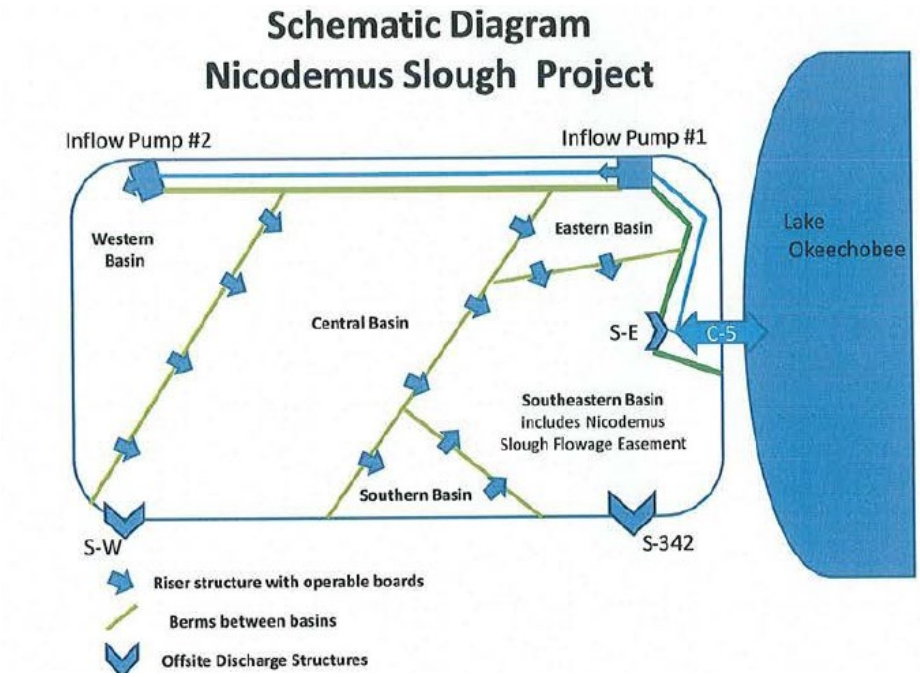

Figure 22. Schematic diagram of the Nicodemus Slough project (SFWMD, 2013)

2.4.8 East Lake Okeechobee Subwatershed

According to the 2025 South Florida Environmental Report, the current SFWMD regional project (operation and maintenance phase) within the East Lake Okeechobee subwatershed is C-44 Reservoir and STA, Caulkins Water Farm, and part of Allapattah Complex (***Figure 23***) (SFWMD, 2025). Tetra Tech received the operational plan for C-44 Reservoir and STA and Caulkins Water Farm projects. The Allapattah Complex project is part of the adjacent basin (C-23) regional project in the St. Lucie River and Estuary watershed.

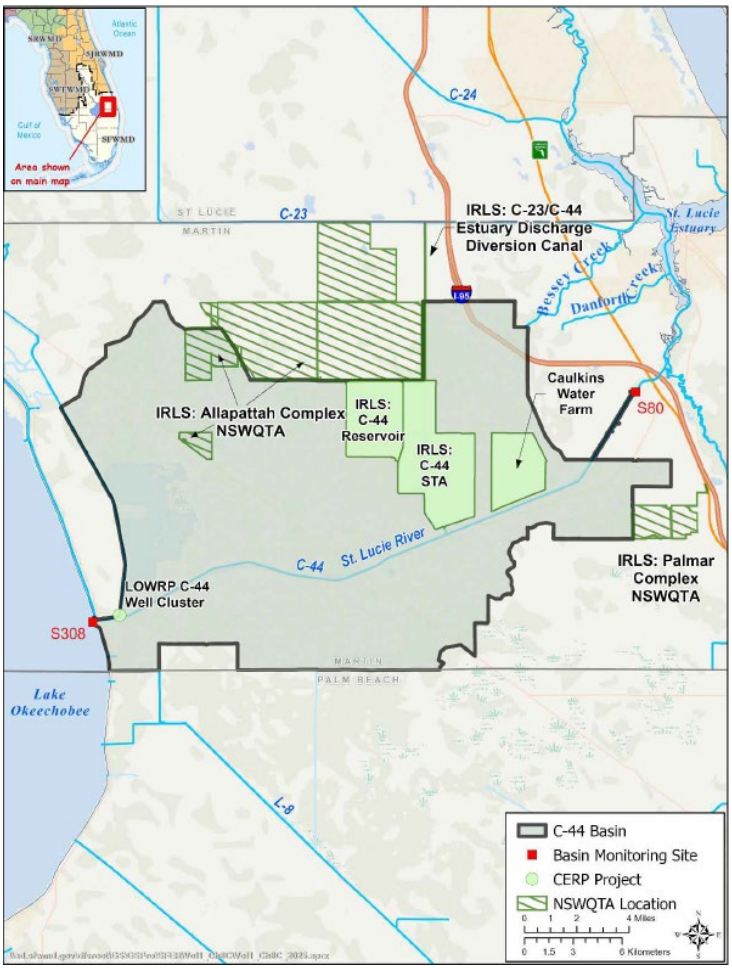

Figure 23. Current SFWMD regional projects in the South Lake Okeechobee subwatershed (SFWMD, 2025)

2.4.8.1 C-44 Reservoir and STA

Overall, the C-44 Reservoir and STA covers about 8% of the C-44 basin area and pumped water from the C-44 into the reservoir via the intake canal to attenuate freshwater flows to the St. Lucie Estuary and allow initial treatment of the water (***Figure 23***). Water is distributed from the reservoir to the STA via outflow structure and distribution canals for additional treatment. Treated water is released to the C-44 via the seepage collection canals and outlet canals (SFWMD, 2021). Construction of the reservoir and STA was completed in mid-2021, followed by initial operations with water pumped into the reservoir in early 2022. Subsequently, the project began the Operational Testing and Monitoring Phase to allow time to perform as intended before the facility is transferred from USACE to SFWMD for full operations.

The C-44 Reservoir and STA consist of an 3,400 acre above ground reservoir, which captures flow from the C-44, and 6,300 acres of STA cells to treat the water before it is released back to the C-44. The project includes the following (SFWMD, 2021):

- **Inflow to C-44 Reservoir and STA**: Water enters the 3,400-acre above ground reservoir from the C-44 Canal via the intake canal (C-400) and pump station (S-401) located in the southeastern corner (***Table 26***). Water levels in the reservoir will range from elevation 29.0 feet North American Vertical Datum of 1988 (NAVD88) (the bottom of the reservoir is at approximately elevation 26.0 feet NAVD88) to elevation 41.0 feet NAVD88. Water quality data are available for TN, NOx, and PO_4 at S-401 from June 2022 to December 2023.

- **Outlet Structure (S-404 Spillway and S-404S Mid Spillway)**: The STAs cells receive water from the C-401N and C-401S distribution canals through inlet gates and release water over weir outlet structures to the drainage/collection canals (C-402E and C- 402W). Treated water from the STA collection canals (C-402E/C-402W) is released back into the C-44 Canal via structures S-404 and S404S (***Table 27***). The purpose of S-404 is to control the flow from the STA system by maintaining water surface levels within the C-402W and C-402E collection canals S-404 has measured flow since May 2021. The S-404S is located downstream of S-404 at the confluence of the C-44 Canal and was formerly operated by the U.S. Army Corps of Engineers (USACE) as the Mid Spillway prior to the C-44 Reservoir and STA project. Water quality data are available for temperature, DO, TN, NH_3, NOx, OrgP, and PO_4 at S404 from July 2021 to December 2023.
- **Alternate STA pump station S-401T:** S-401T is operated when the C-44 Reservoir is not in use to maintain minimum water levels in the STAs and prevent dry-out conditions. This structure delivers water from the C-44 Intake Canal (C-400) to STA cell 2, facilitating storage and distribution to the other five STA cells. S-401T has been in service since November 7, 2019. During this operation, the direction of flow within STA cell 2 is reversed (south to north), and the cell monitoring will also be adjusted accordingly. Flow time series for S-401T are available from February 2021 (***Table 28***).

Table 26. Monthly average withdrawal (cfs) from C-44 Canal to C-44 Reservoir via C-400 Canal and S-401 pump station

Month	2021	2022	2023
January	-	10,912.6	0.0
February	-	9,746.2	604.8
March	-	1,969.8	994.8
April	-	1,391.1	1,802.0
May	-	1,235.2	122.9
June	-	118.5	282.4
July	-	0.0	4,755.6
August	-	0.0	2,837.3
September	-	3,142.5	2,298.2
October	-	8,219.1	6,319.1
November	-	461.1	0.0
December	-	1,161.9	795.0

Table 27. Total monthly flow (cfs) released from STAs cells (Cell 6) to C-44 Canal via S-404 structure

Month	2021	2022	2023
January	-	327.8	535.5
February	-	350.1	475.5
March	-	339.5	519.6
April	-	583.8	625.5
May	24.3	881.7	436.6

Month	2021	2022	2023
June	612.8	15,803.4	538.4
July	3,307.4	4,173.3	425.2
August	2,259.7	339.5	611.4
September	1,407.8	1,938.4	492.3
October	200.7	596.4	1,156.9
November	177.7	766.3	580.7
December	201.8	510.9	529.2

Table 28. Total monthly withdrawal (cfs) from C-400 intake canal to STA via S-401T

Month	2021	2022	2023
January	-	758.5	-
February	1,052.0	1,629.8	-
March	1,847.8	2,261.6	-
April	1,335.2	3,193.9	-
May	2,335.8	1,354.9	-
June	4,424.5	0.0	-
July	680.7	0.0	-
August	749.5	0.0	-
September	380.6	-	-
October	400.2	-	-
November	577.1	0.0	-
December	1,129.4	0.0	-

2.4.8.2 Caulkins Water Farm

The objective of Caulkins Water Farm (3,275 acres) is to capture and redirect surface water from the C-44 Canal during times when discharges could negatively impact coastal estuaries. Water from the C-44 Canal is pumped into the impoundment using an existing pump station that includes three electric pumps with a combined capacity of approximately 105,000 gallons per minute (464 acre-feet/day or 234 cfs). The farm has been operational since 2017 and provides water storage and nutrient retention within the aboveground impoundment (SFWMD, 2019; SFWMD, 2025) . Tetra Tech received aggregated daily inflow volumes (acre-feet) from three pumps in the C-44 Canal into the impoundment from October 2017 to December 2023, and water quality data at station CAUEX-IN (NO_x, TKN, and TP) were recorded from May 2019 to December 2023. No discharge volumes and water quality measurements from outfall location were reported.

2.4.9 Summary of Available Regional Project Information

Table 29 summarizes the available withdrawal and release data for the regional project discussed above, along with Tetra Tech's recommendations for inclusion in the HSPF model based on the data received or that were publicly available on DBHYDRO Insights.

Table 29. Available withdrawal and release information for regional projects and recommendations for HSPF model inclusion

Project	BMAP Subwatershed	Withdrawal Location	Release Location	Operational Start Date	Period of Available Data	Pumping/Release Facility	Include in HSPF Model
BIR	Indian Prairie	C-41	C-41	NA	Inflow: 07/11/2021-07/13/2021 Water quality: 2017-2023	BIRGROVEIN	Yes
Brighton Valley	Indian Prairie	C-41A	C-41A	March 2020	2020-2023	INFLOWPUMP, CS-01, CS-02, and CS-03	Yes
West Waterhole	Indian Prairie	Stormwater runoff /C-40	C-40	2006	Inflow and outflow: 2007-2023, Water quality: 2014-2023	LYKESGROVE, LYKESHYDRAULIC, and LYKESDISCHARGE,	Yes
Dixie Ranch	Taylor Creek/ Nubbin Slough	Turkey Slough canal	Turkey Slough canal	NA	2009-2012	NA	No - Only TP measurements are available from 2009-2012
Lakeside Ranch STA	Taylor Creek/ Nubbin Slough	L-64	C-59	Phase I: 2012 Phase II: 2019 Phase III: 2021	Inflow: 2008-2025 Outflow: 2018-2025	S-650 and S-191A/ S-666A, S-668A, S-670A, and S-675	Yes (no flow and water quality data for S-675)
Nubbin Slough/ New Palm STA	Taylor Creek/ Nubbin Slough	Nubbin Slough	Nubbin Slough	2010	2010-2025	S-385_P/ S-387A-C	Yes
Taylor Creek STA	Taylor Creek /Nubbin Slough	Taylor Creek	Taylor Creek	2007	2007 to present	S-390/S-392	Yes
Eagle Haven Ranch	Upper Kissimmee	NA	NA	NA	NA	S-3, S-4, S-5, S-7, S-9	No - No data are publicly available

Project	BMAP Subwatershed	Withdrawal Location	Release Location	Operational Start Date	Period of Available Data	Pumping/Release Facility	Include in HSPF Model
Partin Family Ranch Big Bend	Upper Kissimmee	Big Bend Swamp	NA	2024	NA	Gntry Ditch	No - Outside the model simulation period
El Maximo Ranch	Lower Kissimmee	Kissimmee River and Blanket Bay Slough	Kissimmee River	NA	NA	PS-2b, PS-1, PS-3, PS-7	No - No data are publicly available
XL Ranch	Fisheating Creek			NA		NA	No - No data are publicly available
C-44 Reservoir and STA	East Lake Okeechobee	C-44 Canal via intake canal C-400	C-44 canal	2022	January 2022 – December 2023	S-401/S-404	Yes-discharge and water quality 2021-2023
C-44 Reservoir and STA (Alternative Withdrawal)	East Lake Okeechobee	C-44 Canal via intake canal C-400	STA cell 2	2019	February 2021 – December 2022	S-401T	Yes- combined with S-401-Only flow data is available
Caulkins Water Farm	East Lake Okeechobee	C-44 Canal	Cell 3	2017	Inflow volume from October 2017 to December 2023; water quality (NO_x, TKN, and TP) from May 2019 to December 2023	From outfall ditch returns to C-44 Canal	Yes
Nicodemus Slough	West Lake Okeechobee	Lake Okeechobee	CV-5 and S-342	2015 (SFWMD, Accessed 2025e)	Flow: from 1991 to present, Water quality: 2011 - 2023	S-342	Yes

2.5 WEATHER DATA

2.5.1 NEXRAD Data

NEXRAD data estimate the amount of precipitation in an area based on radar measurements from a network of stations. NEXRAD data were provided by SFWMD for the model simulation period January 1, 2008 through December 31, 2023. The data were provided at hourly time steps for 4,019 cells, sized 2 kilometers by 2 kilometers, which covered the Lake Okeechobee Watershed. The hourly data were summed for each year, and the average annual rainfall was calculated for each cell, with the maximum and minimum average annual rainfall of 58 inches and 42, respectively (***Figure 24***).

The NEXRAD annual average rainfall for each cell was used to develop initial precipitation-based weather regions in the Lake Okeechobee Watershed. First, the average annual precipitation values were rounded to the nearest integer to simplify the data and subsequently grouped into 1-inch intervals across 17 groups. Based on these groups, four precipitation classes were then defined to achieve the best correspondence with the NEXRAD data and flow stations. These classes were used to assign four distinct weather regions, and any outlier cells were smoothed to enhance spatial continuity (***Table 30*** and ***Figure 25***).

To provide consistency with long-term precipitation patterns in the region, the Parameter-elevation Regressions on Independent Slopes Model (PRISM) 30-year normal annual precipitation dataset (800 meter resolution) (PRISM, 2025) was used as a reference framework during the delineation process (***Figure 26***).

Table 30. NEXRAD average annual rainfall total (inches) for each assigned weather region in the Lake Okeechobee watershed

Weather Region	NEXRAD Average Annual Rainfall (in)
Region 1	42 – 45
Region 2	46 – 47
Region 3	48 – 51
Region 4	52 - 58

Reference evapotranspiration (ET_0) was provided by SFWMD in a daily time step for the model simulation period from January 1, 2008, through December 31, 2023, at the NEXRAD grid cell level for 4,019 cells. After watershed delineation, the NEXRAD grid cell ET_0 will be used to develop an area-weighted representative ET_0 time series for each weather region.

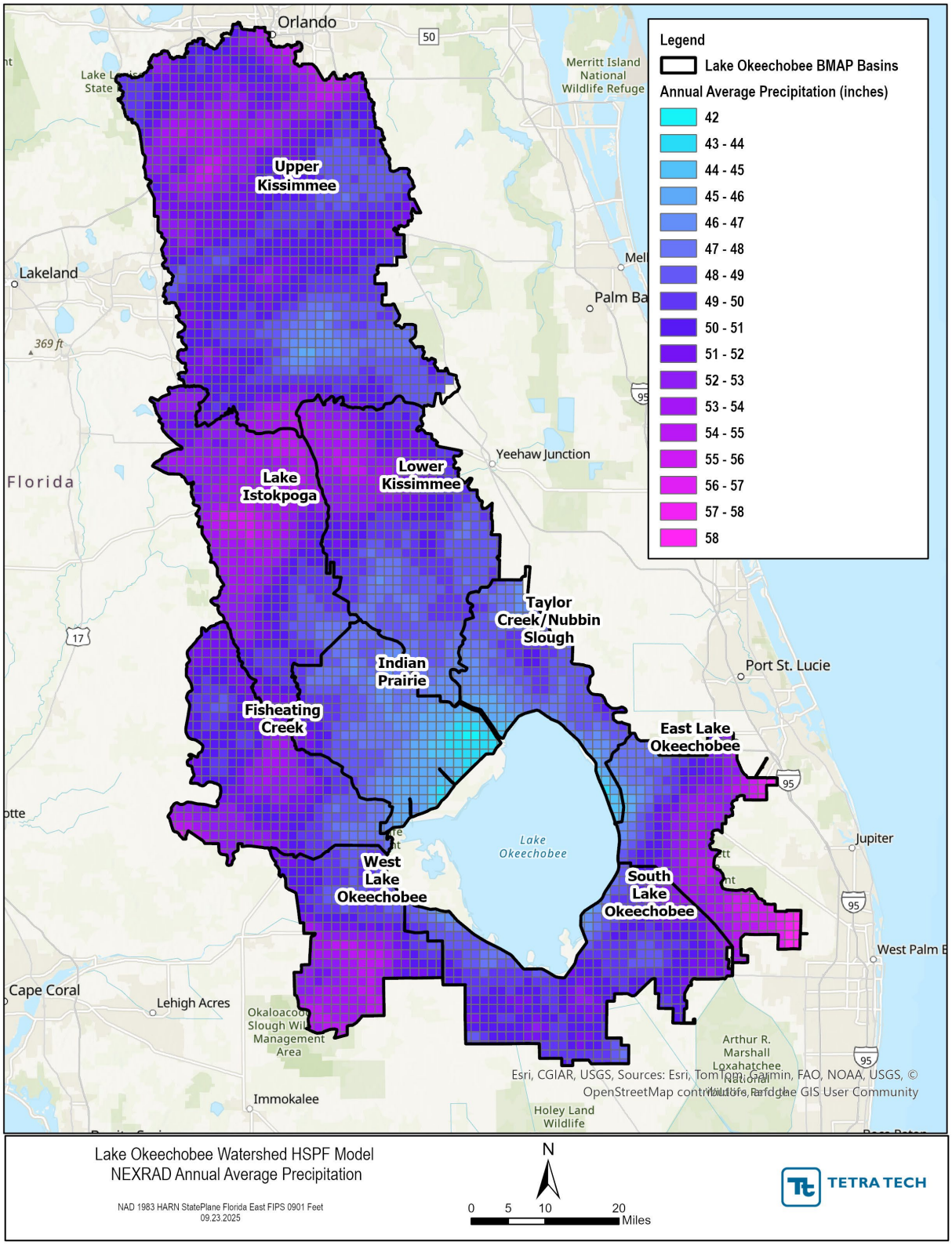

Figure 24. Annual average precipitation (inches) from NEXRAD

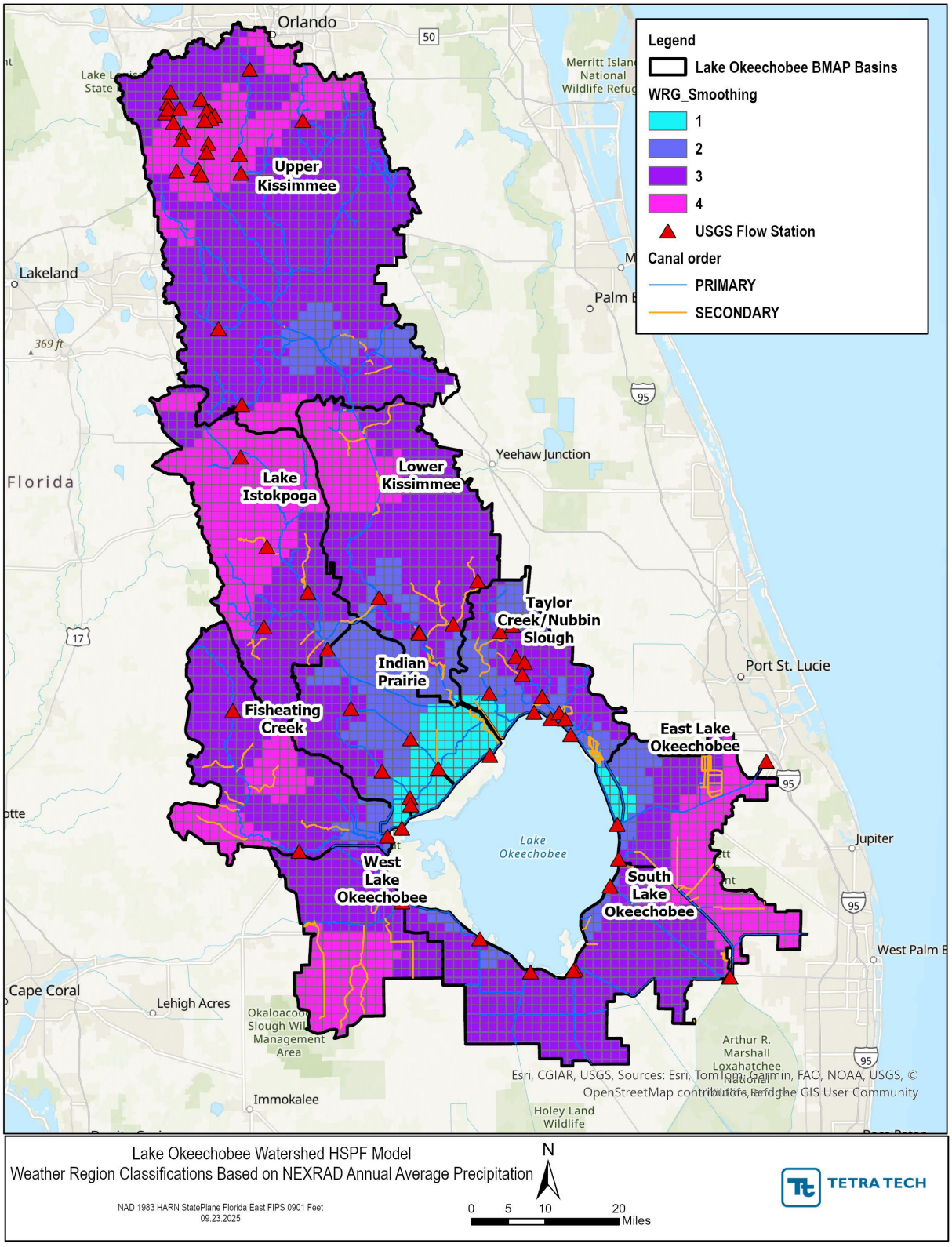

Figure 25. Weather region based on annual average precipitation (inches) from NEXRAD

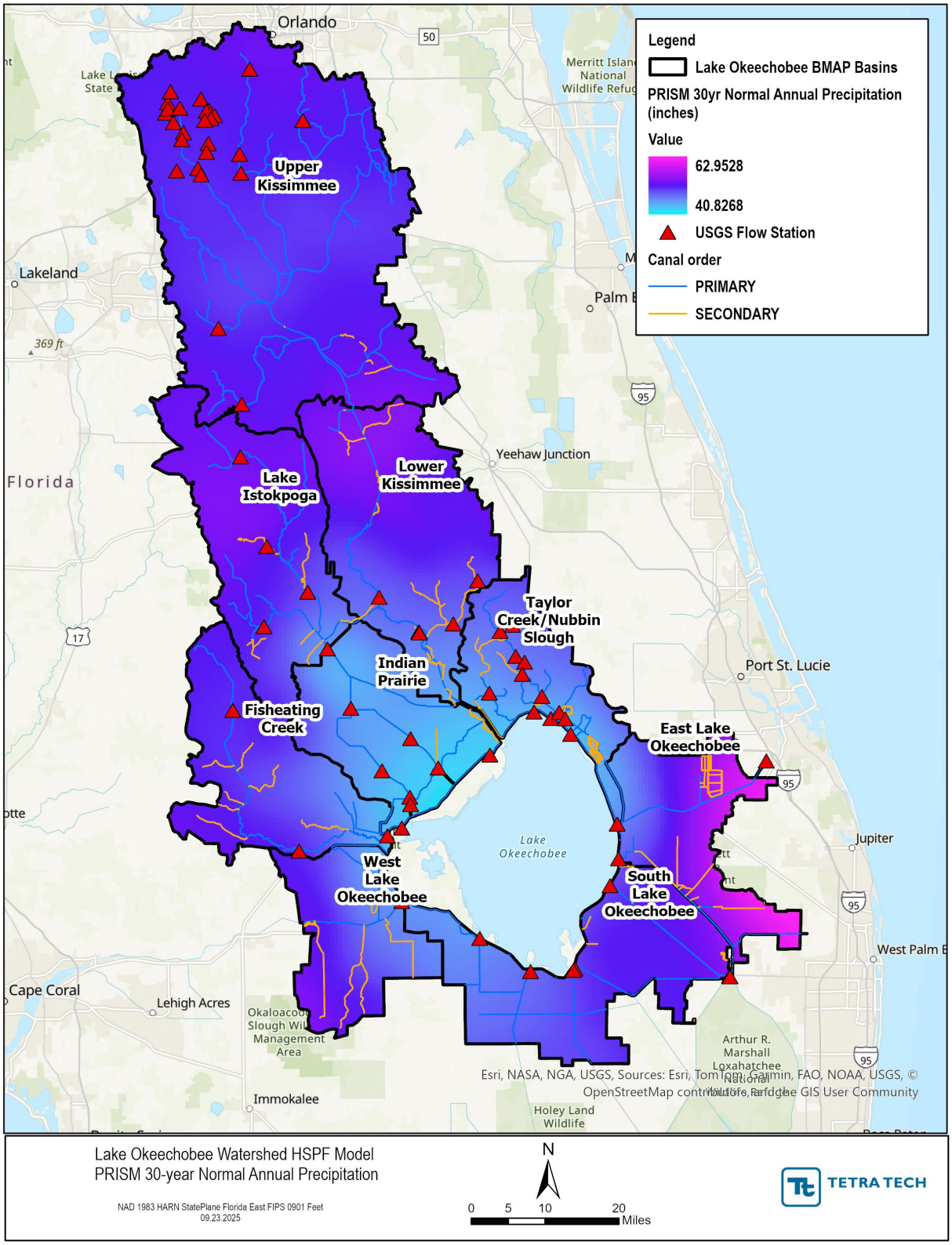

Figure 26. PRISM 30-year normal annual precipitation (inches) 800-meter resolution

2.5.2 Ground-Based Data

A web subscription to the National Oceanic and Atmospheric Administration's (NOAA) National Centers for Environmental Information (NCEI)–Local Climatological Data (LCD) was used to obtain Surface Airways (SA) data (NOAA NCEI QCLCD, 2024). Five SA stations were selected for weather file development as primary stations, including Orlando International Airport, Southwest Florida International Airport, and Palm Beach International Airport, Fort Lauderdale Executive Airport, and St. Lucie County International Airport (***Table 31*** and ***Figure 27***).

The hourly observations of dew point temperature, air temperature, cloud cover, wind speed, and wind direction were used from the SA stations. SA stations have multiple station ID labels, and the stations are referred to by their five-character Weather Bureau Army Navy Identification (WBAN ID). The WBAN IDs for the selected stations are shown in ***Table 31***. Meteorological data from January 1, 2008, through December 31, 2023, were downloaded for WBAN 12815, WBAN 12894, WBAN 12844, WBAN 12885, and WBAN 12895.

Hourly air temperature, dew point temperature, wind speed and direction observations collected from 2008 through 2023 were reviewed for outliers, missing, or impaired data, and were subsequently repaired. The repairs were performed by averaging the before and after values when data were missing for a short period (less than or equal to three hours), and if a missing period was longer (greater than four hours missing), the time series was completed by inserting the unimpaired record from a previous period. A Python script was developed to fill data gaps for all SA stations with the exception of station 12895 (St. Lucie County International Airport), which was completed manually for the St. Lucie River and Estuary Watershed model. The gap-filled data was then manually reviewed for outliers, investigated, and repaired based on the same process used for filling gaps.

Table 31. Location, WBAN ID, associated watershed, and data source as primary SA and secondary TSK SA station sources

Location	WBAN	Subwatershed	Data Source
Orlando International Airport	12815	Upper Kissimmee	Primary
Kissimmee Gateway Airport	92813	Upper Kissimmee	Secondary TSK for 12815
Patrick Space Force Station Airport	12867	Upper Kissimmee	Secondary TSK for 12815
Southwest Florida International Airport	12894	West Lake Okeechobee and Fisheating Creek	Primary
Page Field Airport	12835	West Lake Okeechobee and Fisheating Creek	Secondary TSK for 12894
Charlotte County Airport	12812	West Lake Okeechobee and Fisheating Creek	Secondary TSK for 12894
Palm Beach International Airport	12844	East Lake Okeechobee	Primary
Boca Raton Airport	92805	East Lake Okeechobee	Secondary TSK for 12844and 12885
Fort Lauderdale Executive Airport	12885	South Lake Okeechobee	Primary
Pompano Beach Airport	92805	South Lake Okeechobee	Secondary TSK for 12885 and 12844

Location	WBAN	Subwatershed	Data Source
St. Lucie County International Airport	12895	Taylor Creek, Lower Kissimmee, Lake Istokpoga, and Indian Prairie	Primary
Vero Beach Municipal Airport	12843	Taylor Creek, Lower Kissimmee, Lake Istokpoga, and Indian Prairie	Secondary TSK for 12895

- TSK is a MetADAPT extension for cloud cover (Tenths)

Cloud cover was estimated from the sky condition observations provided at the SA stations. Data from the LCD dataset provided cloud cover information as abbreviations presented in ***Table 32***. The numerical assignments for the model input listed in the table were used to create a time series. Cloud cover was required as a weather input in the HSPF model. The data collected during 2008 through 2023 were reviewed for outliers, missing, or impaired data, and were subsequently repaired. The repairs were performed by averaging the before and after values when data were missing for a short period (less than or equal to three hours), or if a missing period was longer (greater than four hours), the time series was completed by inserting the unimpaired record from two nearby observation stations for each SA station (as secondary TSK [cloud cover; Tenths]). This was done manually for SA station 12895. A Python script was developed to fill gaps for the remaining SA stations that were filled in with the same process described above. The gap-filled data was then manually reviewed for outliers, investigated, and repaired based on the same process used for filling gaps.

Because SA stations collect only cloud cover, solar radiation was calculated using the CE-QUAL-W2 methodology (Cole, 2003) within the Meteorological Data Analysis and Preparation Tool (MetADAPT), developed by Tetra Tech. MetADAPT is a Microsoft Excel-based tool designed to process ground-based weather data, particularly for calculating solar radiation. It is highly modular and can be customized to incorporate additional data input and model output options (Tetra Tech, 2007). CE-QUAL-W2 is a two-dimensional, laterally averaged hydrodynamic and water quality model developed by Portland State University in collaboration with the USACE Waterways Experiment Station (WES). The heat exchange subroutine from CE-QUAL-W2 is one of the methods used in MetADAPT to compute short-wave solar radiation. This approach requires hourly cloud cover, date, and the station's latitude. The calculated solar radiation was then used as an input in the HSPF model.

Table 32. Numerical cloud cover assignments for model input

Description	Abbreviations	National Weather Service Suggested Numerical Range (Eights)	Numerical Assignments for Model Input (Tenths)
Clear Sky	CLR	0	0
Few	FEW	1-2	1.25
Scattered	SCT	3-4	4.38
Broken	BKN	5-7	7.5
Variable	VV	8	10
Overcast	OVC	8	10

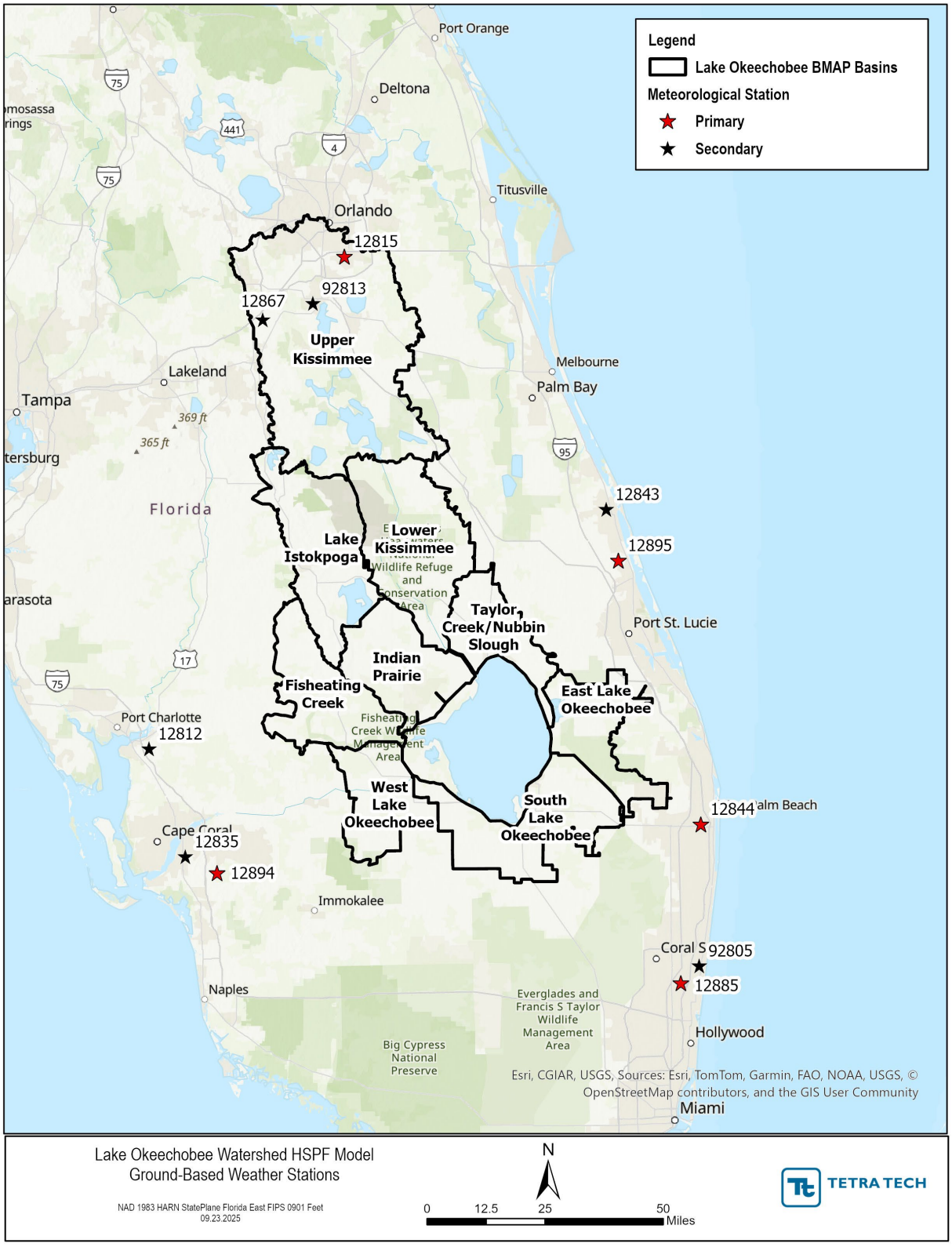

Figure 27. Selected ground-based meteorological stations in the Lake Okeechobee Watershed

2.6 ATMOSPHERIC DEPOSITION

Atmospheric deposition can be a significant source of nutrient loading to waterbodies and watersheds. The HSPF model accounts for wet deposition of pollutants by applying specified concentrations to precipitation that falls on land and in streams or waterbodies. Additionally, dry deposition is included in the HSPF model, represented as a mass flux to both land surfaces and directly to streams and waterbodies. While time series data were available for quantifying nitrogen deposition, such data were not available for phosphorus deposition. In the model, atmospheric nitrogen deposition is explicitly represented as a time series input, whereas phosphorus deposition is represented implicitly through setup and parametrization as a sediment-sorbed constituent.

2.6.1 Wet Deposition of Nitrogen

Key nitrogen constituents involved in wet deposition include NH_4 and NO_3. These constituents can originate from various sources, including agricultural activities, fossil fuel combustion, and industrial processes. The National Trends Network (NTN) of the National Atmospheric Deposition Program (NADP) monitors and quantifies the concentrations of eight major ions, including NH_4 and NO_3 (NTN, 2025). The active NTN sites closest to the Lake Okeechobee Watershed are FL41 (Verna Well Field in Sarasota County, FL), FL00 (Austin-Cary Forest in Alachua County, FL), and FL11 (Everglades National Park Research Center in Miami-Dade County, FL) (***Table 33*** and ***Figure 28***) (NADP, 2025). The FL32 (Orlando, FL) is an inactive NTN site, with NH_4 and NO_3 data available from October 2009 through February 2018 (***Figure 28***) (NADP, 2025). Data from NADP-NTN are provided as monthly precipitation-weighted average concentrations.

Table 33. List of NADP-NTN wet deposition sites closest to the Lake Okeechobee Watershed

Station ID	Station Name	Period of Available Data for NH_4 and NO_3
FL00	Austin-Cary Forest in Alachua County	May 2016 – December 2023
FL11	Everglades National Park Research Center in Miami-Dade County	January 2008 - December 2023
FL32	Orlando	February 2009 – February 2018
FL41	Verna Well Field in Sarasota County	January 2008 - December 2023

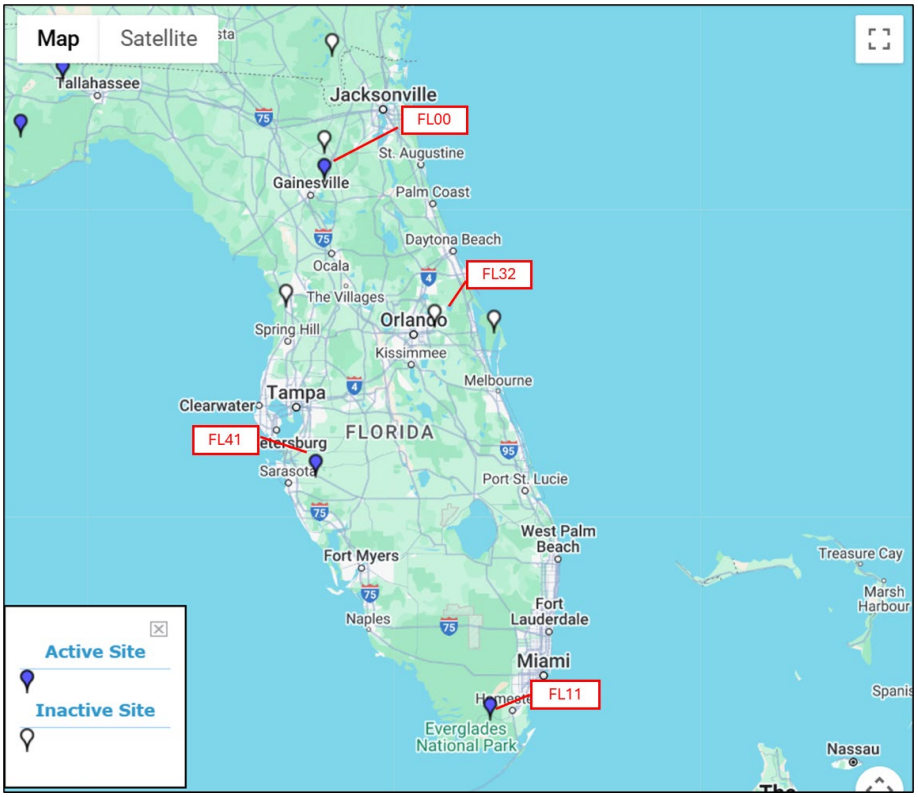

Figure 28. Interactive NADP-NTN map for wet deposition sites at Verna Well Field in Sarasota County (FL41), Austin-Cary Forest in Alachua County (FL00), Orlando (FL32), and Everglades National Park Research Center in Miami-Dade County (FL11)

Figure 29 and ***Figure 30*** show the NADP-NTN precipitation-weighted concentration plots at FL41, FL00, FL32, and FL11 for NH_4 and NO_3, respectively, during the HSPF simulation period (2008–2023). NH_4 concentrations typically ranged between 0.003 – 1.097 mg/L at FL41, 0.012 – 0.354 mg/L at FL00, 0.005 – 0.506 mg/L at FL32, and 0.016 – 0.98 mg/L for FL11, with no clear trends over time. NO_3 concentrations varied between 0.092 – 2.45 mg/L at FL41, 0.09 – 1.00 mg/L at FL00, 0.024 – 0.49 mg/L at FL32, and 0.105 – 1.92 mg/L for FL11, with no clear trends over time, with no clear trends over time. Tetra Tech recommends averaging the data from all four sites (FL41, FL32, FL11, and FL00), to develop wet deposition time series for the Lake Okeechobee Watershed HSPF model.

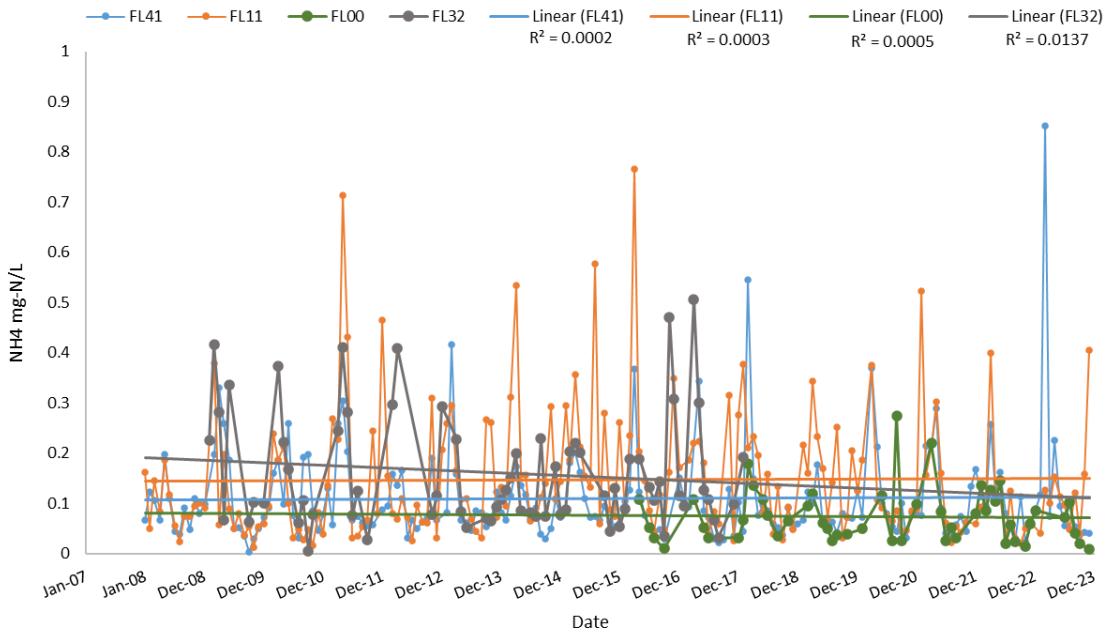

Figure 29. NADP-NTN precipitation-weighted concentration of NH_4 (mg N/L)

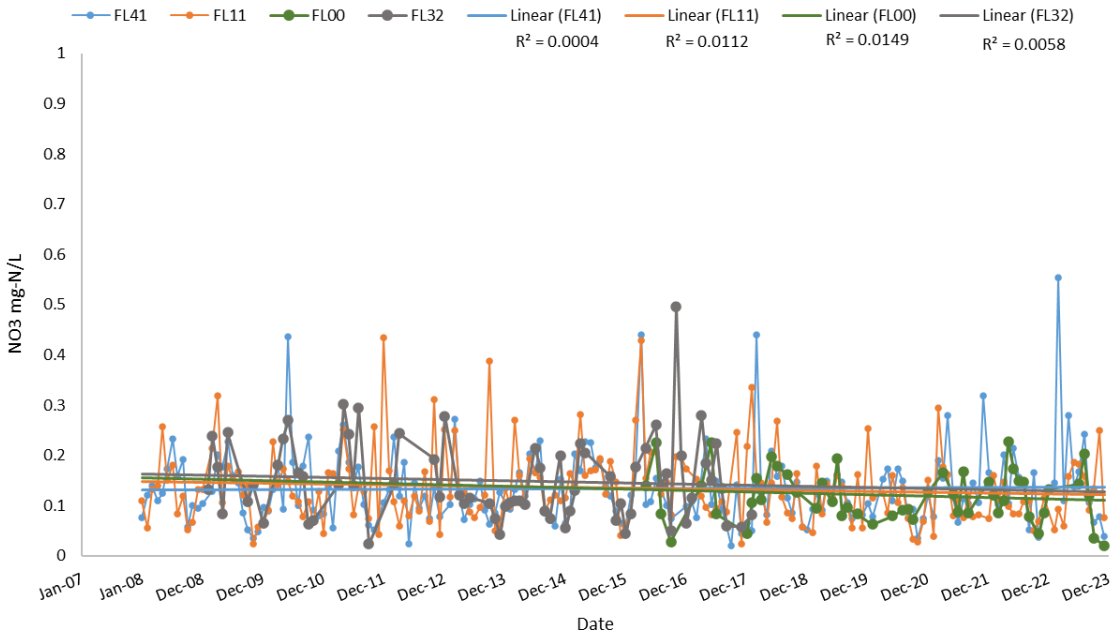

Figure 30. NADP-NTN precipitation-weighted concentration of NO_3 (mg N/L)

2.6.2 Dry Deposition of Nitrogen

Dry deposition rates can vary significantly based on factors such as the type of surface, weather conditions, and the concentration of nitrogen compounds in the atmosphere, and it is subject to much greater uncertainty than wet deposition. U.S. Environmental Protection Agency's (USEPA) Clean Air Status and Trends Network (CASTNET) monitors air concentrations of NH_4, nitric acid (HNO_3), and NO_3, and calculates net dry deposition fluxes using the Multi-Layer

Model (CASTNET, 2025). The closest active CASNET sites to the Lake Okeechobee Watershed are the Indian River Lagoon in Indian River County, Florida (IRL141) and Everglades National Park in Miami-Dade County, Florida (EVE419) (***Figure 31***) (USEPA, 2025). CNS011 (Canaveral National Seashore in Volusia and Brevard counties, Florida) site has data available starting from August 2024; therefore, it was excluded from dry deposition analysis. Data from CASTNET were provided as seasonal three-month totals.

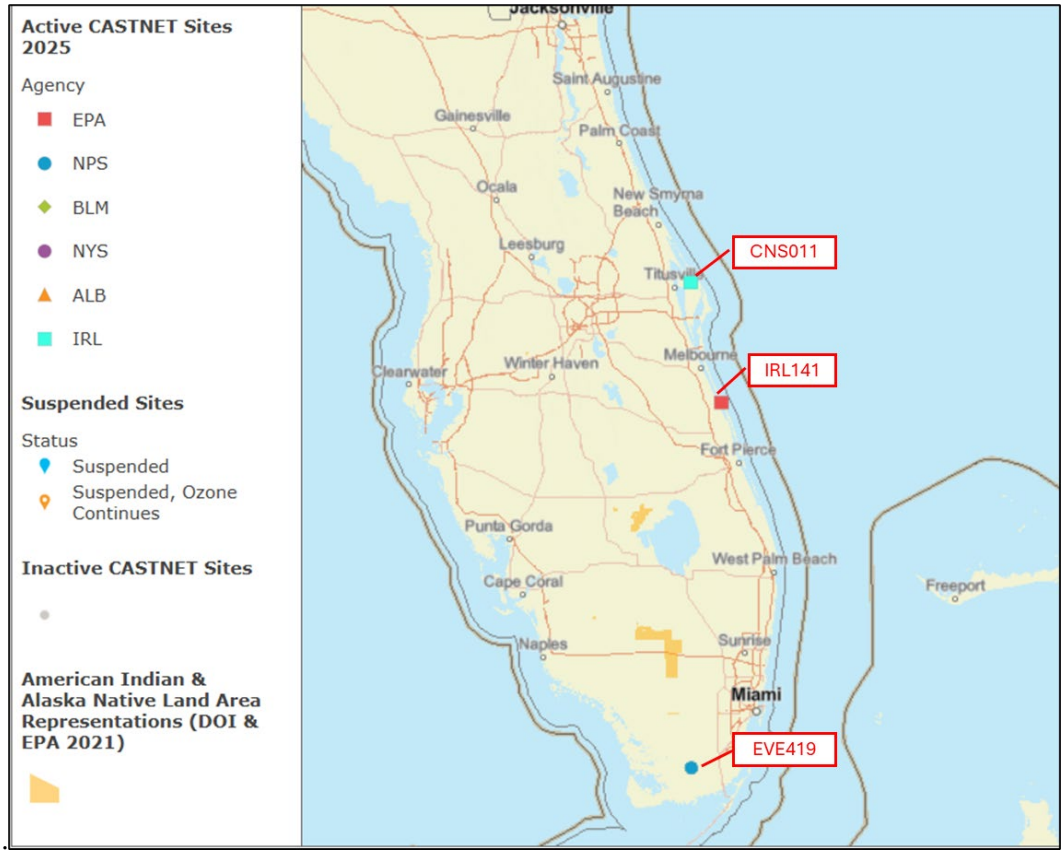

Figure 31. Interactive CASTNET map for three dry deposition sites CNS011 (Canaveral National Seashore in Volusia and Brevard counties), IRL141(Indian River Lagoon in Indian River County) and EVE419 (Everglades National Park in Miami-Dade County)

Figure 32 shows the time series plot of dry atmospheric deposition loads of HNO_3 ranged 0.016-0.10 kilograms per hectare per three months (kg/ha/3-months) at IRL141 and 0.002-0.14 kg/ha/3-months at EVE419 during HSPF model simulation period, with a decreasing trend over time. Loads of NO_3 decreased over time and typically varied between 0.005–0.035 kg/ha/3-months at IRL141 and 0.001-0.04 kg/ha/3-months at EVE419 (***Figure 33***). Loads of NH_4 also decreased over time and typically varied between 0.005–0.037 kg/ha/3-months at IRL141 and 0.001–0.04 kg/ha/3-months at EVE419s (***Figure 34***). Tetra Tech recommends averaging the data from the two stations (IRL141 and EVE419) to develop dry deposition time series for the Lake Okeechobee Watershed HSPF model.

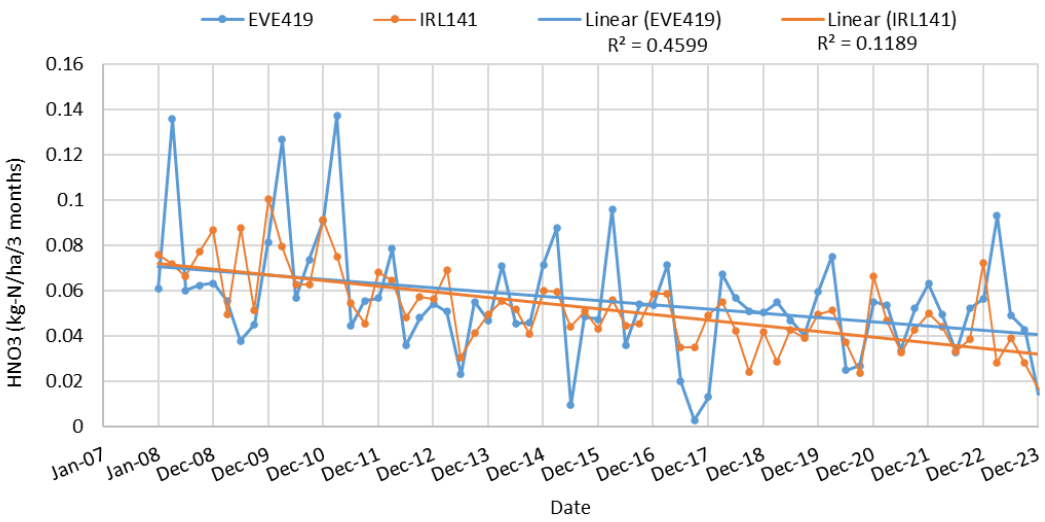

Figure 32. CASTNET dry atmospheric deposition loads time series of HNO_3 (kg/ha/3 months) at IRL141 (Indian River Lagoon in Indian River County) and EVE419 (Everglades National Park in Miami-Dade County)

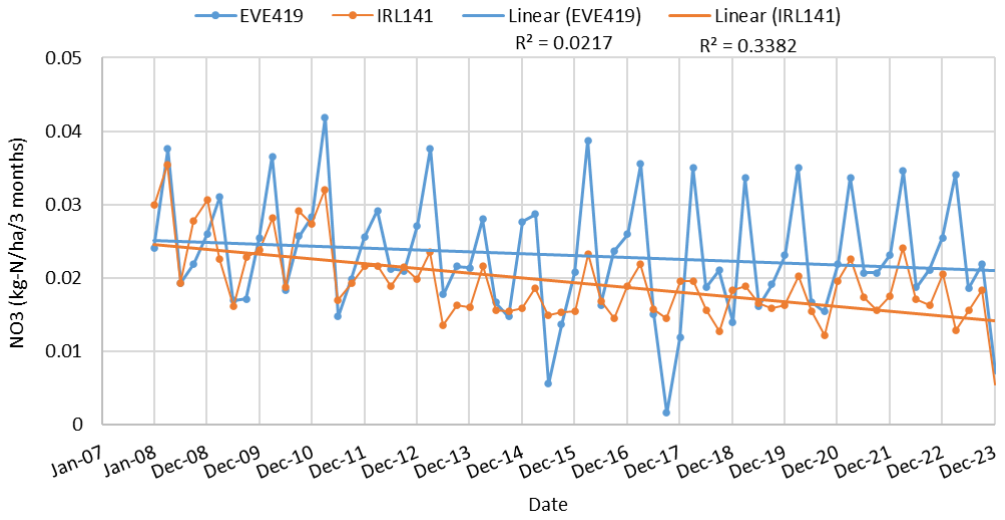

Figure 33. CASTNET dry atmospheric deposition loads time series of NO_3 (kg/ha/3 months) at IRL141 (Indian River Lagoon in Indian River County) and EVE419 (Everglades National Park in Miami-Dade County)

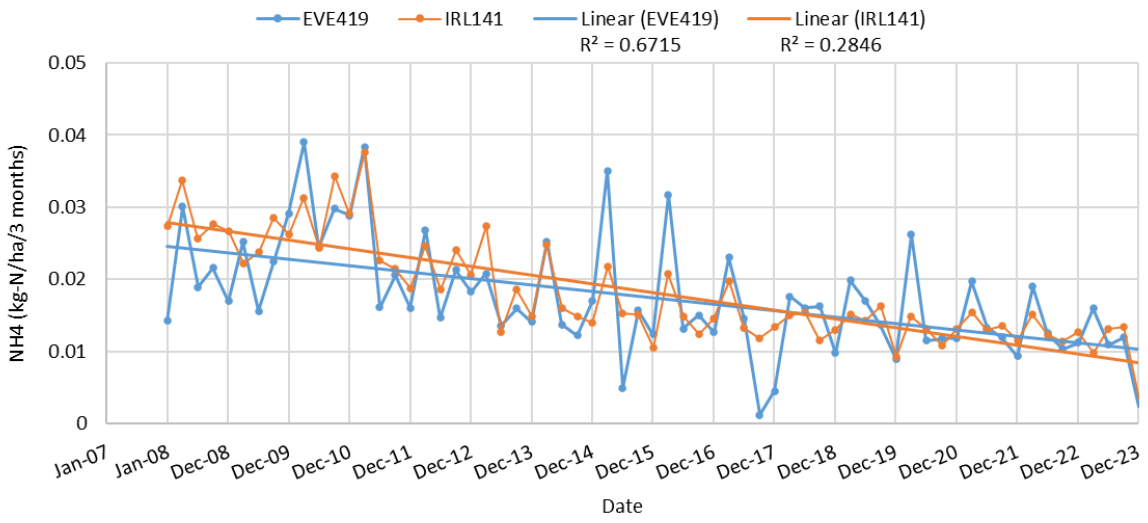

Figure 34. CASTNET dry atmospheric deposition loads time series of NH_4 (kg/ha/3 months) at IRL141 (Indian River Lagoon in Indian River County) and EVE419 (Everglades National Park in Miami-Dade County)

2.7 FLOW DATA

Tetra Tech downloaded 69 U.S. Geological Survey (USGS) flow stations in the Lake Okeechobee Watershed with flow data spanning from 2008 through 2023 (USGS , Acceses March 2025). ***Table 34*** presents a list of stations, start and end dates, and corresponding subwatersheds in Lake Okeechobee Watershed. ***Figure 35*** shows the location of USGS flow stations in the Lake Okeechobee Watershed.

In addition to USGS flow stations, Tetra Tech downloaded geospatial locations of 90 flow control structures and flow monitoring sites (controlled by USACE or SFWMD) with available flow data within the Lake Okeechobee Watershed from SFWMD DBHYDRO Insights database (SFWMD, Accessed June 2025b) (***Figure 36***). This information will be used during model delineation and calibration process.

Table 34. List of USGS flow stations in the Lake Okeechobee Watershed

Station ID	Station Name	Start Date	End Date	Subwatershed
02255600	Fisheating Creek near Lake Placid, FL	1/1/2008	12/31/2023	Fisheating Creek
02256500	Fisheating Creek at Palmdale, FL	1/1/2008	12/31/2023	Fisheating Creek
02257000	Fisheating Creek at Lakeport, FL	1/1/2008	12/31/2023	Fisheating Creek
02257030	Fisheating Lock at S-131 near Lakeport, FL	1/1/2008	9/29/2011	Indian Prairie
02257750	Harney Pond Canal 2.4 Miles Bl S70 nr Lakeport, FL	2/4/2017	12/31/2023	Indian Prairie
02257790	Harney Pond Canal above S-71 nr Lakeport, FL	2/9/2017	12/31/2023	Indian Prairie
02258000	Harney Pond Canal near Lakeport, FL	3/17/2008	9/29/2012	Indian Prairie
02258800	Indian Prairie Canal Ab Pump Sta nr Okeechobee, FL	12/1/2017	12/31/2023	Indian Prairie
02259100	Indian Prairie Canal above S-72 Nr Okeechobee, FL	2/2/2017	12/31/2023	Indian Prairie
02259627	Buckhead Lock At S-127 Nr Okeechobee, FL	1/1/2008	9/29/2011	Indian Prairie
02262900	Boggy Creek near Taft, FL	1/1/2008	12/31/2023	Upper Kissimmee

Station ID	Station Name	Start Date	End Date	Subwatershed
02263692	Shingle Creek at Oak Ridge Road nr Pine Castle, FL	1/1/2008	9/29/2010	Upper Kissimmee
02263800	Shingle Creek at Airport near Kissimmee, FL	1/1/2008	12/31/2023	Upper Kissimmee
02263869	South Lake Outlet at S-15, near Vineland, FL	1/1/2008	12/31/2023	Upper Kissimmee
02264000	Cypress Creek at Vineland, FL	1/1/2008	12/31/2023	Upper Kissimmee
02264003	Cypress Creek Canal at S-103a near Vineland, FL	1/1/2008	12/31/2023	Upper Kissimmee
02264030	Lk Buena Vis Tr at Hotel Pl Blvd at Lk Buena Vista	10/1/2010	12/31/2023	Upper Kissimmee
02264051	Black Lk Outlet at S-101a, at Lake Buena Vista, FL	1/1/2008	12/31/2023	Upper Kissimmee
02264060	Lateral 101 at S-101, near Lake Buena Vista, FL	1/1/2008	12/31/2023	Upper Kissimmee
02264100	Bonnet Creek near Vineland, FL	1/1/2008	12/31/2023	Upper Kissimmee
02264141	Bonnet Creek Below Culverts near Kissimmee, FL	11/19/2008	12/31/2023	Upper Kissimmee
02264495	Shingle Creek at Campbell, FL	1/1/2008	12/31/2023	Upper Kissimmee
02266025	Reedy Creek at S-46 Near Vineland, FL	1/1/2008	12/31/2023	Upper Kissimmee
02266200	Whittenhorse Creek Near Vineland, FL	1/1/2008	12/31/2023	Upper Kissimmee
02266205	Whittenhorse Creek at S-411, near Vineland, FL	1/1/2008	12/31/2023	Upper Kissimmee
02266291	Lateral 405 At S-405a, Near Doctor Phillips, FL	1/1/2008	12/31/2023	Upper Kissimmee
02266293	10b Lateral 405 Ab S-405 near Vineland, FL	12/13/2011	12/31/2023	Upper Kissimmee
02266295	Lateral 410 At S-410 Near Vineland, FL	1/1/2008	12/31/2023	Upper Kissimmee
02266299	401 Canal nr Vineland, FL	10/1/2022	12/31/2023	Upper Kissimmee
02266300	Reedy Creek near Vineland, FL	1/1/2008	12/31/2023	Upper Kissimmee
02266480	Davenport Creek near Loughman, FL	1/1/2008	12/31/2023	Upper Kissimmee
02266496	Reedy Creek Below S-40, near Loughman, FL	1/1/2008	12/31/2023	Upper Kissimmee
02266500	Reedy Creek near Loughman, FL	1/1/2008	12/31/2023	Upper Kissimmee
02267000	Catfish Creek near Lake Wales, FL	1/1/2008	9/29/2011	Upper Kissimmee
02268390	Tiger Creek near Babson Park FL	1/1/2008	12/31/2023	Upper Kissimmee
02269160	Kissimmee River at Pc-33 near Basinger, FL	1/1/2008	9/29/2011	Lower Kissimmee
02269520	Livingston Creek Near Frostproof FL	1/1/2008	12/31/2023	Lake Istokpoga
02270000	Carter Creek near Sebring FL	1/1/2008	12/31/2023	Lake Istokpoga
02270500	Arbuckle Creek near De Soto City, FL	1/1/2008	12/31/2023	Lake Istokpoga
02271500	Josephine Creek near De Soto City FL	1/1/2008	12/31/2023	Lake Istokpoga
02272500	Kissimmee River near Basinger, FL	6/19/2009	8/22/2011	Lower Kissimmee
02272502	Kissimmee River at Lockett Est At Fort Basinger FL	1/1/2008	12/31/2023	Lower Kissimmee
02272650	Fish Slough near Basinger, FL	1/1/2008	12/31/2023	Lower Kissimmee
02272676	Cypress Slough near Basinger, FL	1/1/2008	9/29/2008	Lower Kissimmee
02273198 / S68	C-41a Canal near Lake Placid, FL	1/1/2008	12/31/2023	Lake Istokpoga
02273230	C-41 Canal near Brighton, FL	1/1/2008	12/31/2023	Indian Prairie

Station ID	Station Name	Start Date	End Date	Subwatershed
02273630	Popash Slough near Okeechobee, FL	1/1/2008	12/31/2023	Taylor Creek/Nubbin Slough
02274005	Otter Creek near Okeechobee, FL	1/1/2008	12/31/2023	Taylor Creek/Nubbin Slough
02274010	Taylor Creek near Okeechobee, FL	1/1/2008	12/31/2023	Taylor Creek/Nubbin Slough
02274325	Taylor Creek at Grassy Island Nr Okeechobee, FL	1/1/2008	12/31/2023	Taylor Creek/Nubbin Slough
02274490	Williamson Ditch near Okeechobee, FL	1/1/2008	12/31/2023	Taylor Creek/Nubbin Slough
02274505	Wolff Creek nr Okeechobee, FL	1/1/2008	12/31/2023	Taylor Creek/Nubbin Slough
02275197	Mosquito Creek near Okeechobee, FL	1/1/2008	9/29/2011	Taylor Creek/Nubbin Slough
02275503	Taylor Creek at Hgs-6 near Okeechobee, FL	1/1/2008	9/29/2011	Taylor Creek/Nubbin Slough
02275606	Nubbin Slough near Sherman, FL	1/1/2008	9/29/2008	Taylor Creek/Nubbin Slough
02275625	Nubbin Slough near Okeechobee, FL	1/3/2008	9/29/2008	Taylor Creek/Nubbin Slough
02275631	L-63s Canal near Okeechobee, FL	1/1/2008	9/29/2011	Taylor Creek/Nubbin Slough
02275705	Henry Creek at Henry Crk Lock nr Sherman	1/1/2008	12/31/2023	Taylor Creek/Nubbin Slough
02276877	St. Lucie Canal blw s-308, nr Port Mayaca (AUX) FL	7/15/2017	12/31/2023	East Lake Okeechobee
02276998	St Lucie Canal abv S-80 nr Stuart FL	1/1/2008	9/29/2008	East Lake Okeechobee
02278000	West Palm Beach Canal at S352 at Canal Point FL	1/1/2008	9/29/2008	South Lake Okeechobee
02278450	West Palm Beach C Abv S-5a, nr Loxahatchee, FL	1/1/2008	9/29/2008	South Lake Okeechobee
02278500	Div to Conservation Area at S-5a Nr Loxahatchee	1/1/2008	12/31/2023	South Lake Okeechobee
02280500	Hillsboro Canal Below S351 nr South Bay FL	1/1/2008	12/31/2023	South Lake Okeechobee
02283500	N New River Canal Below S351 nr South Bay FL	1/1/2008	12/31/2023	South Lake Okeechobee
02286400	Miami Canal At S-354 And S-3 at Lake Harbor, FL	5/19/2008	12/31/2023	South Lake Okeechobee
02292010	Caloosahatchee Canal DWS of S-77 at Moore Haven FL	1/1/2008	12/31/2023	West Lake Okeechobee
026451408055070 0	Industrial Canal at CLEWISTON	1/1/2008	12/31/2023	South Lake Okeechobee
026550108036490 0	Levee 8 Canal near Canal Point, FL	2/9/2017	12/31/2023	East Lake Okeechobee

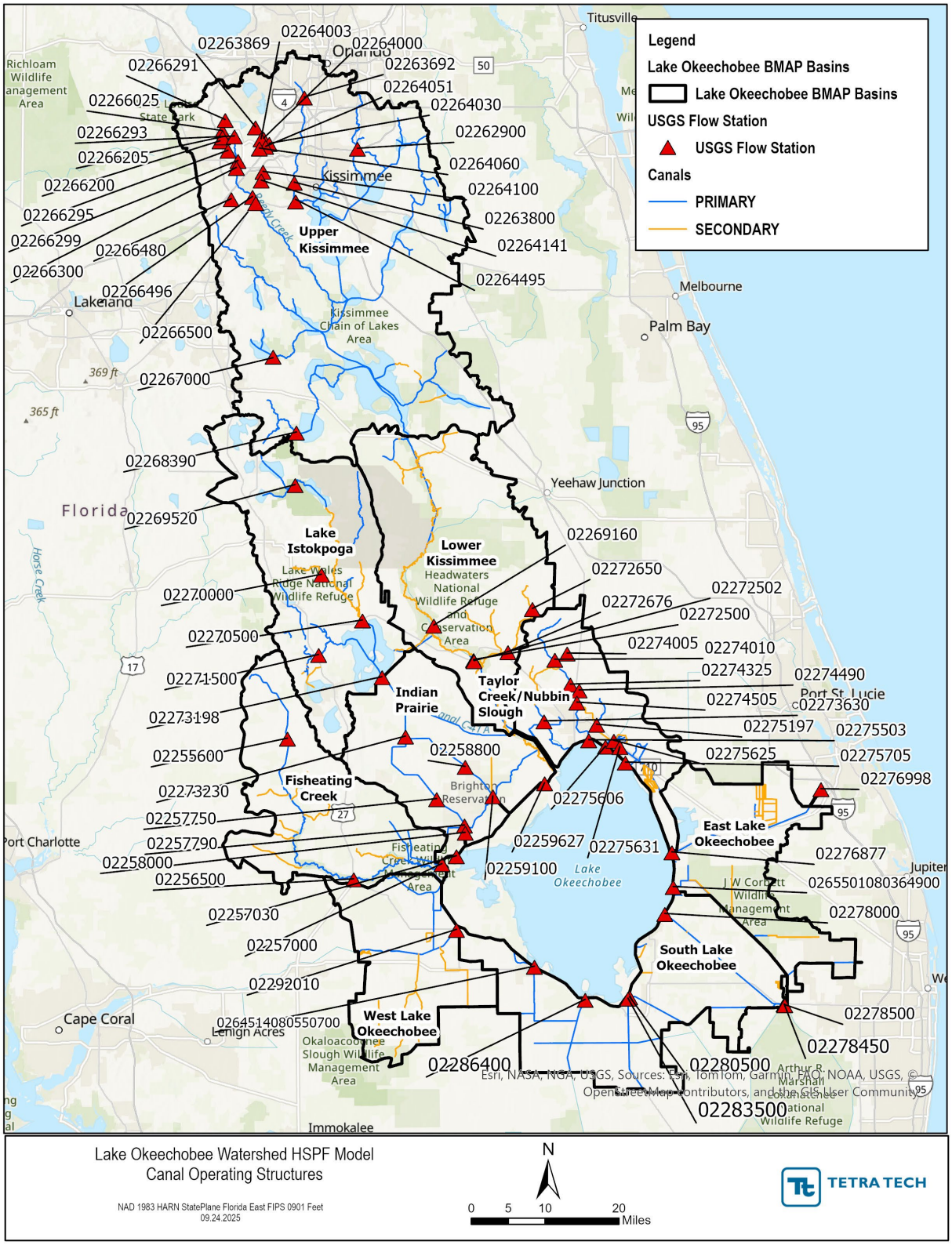

Figure 35. Spatial coverage of USGS flow stations in the Lake Okeechobee Watershed

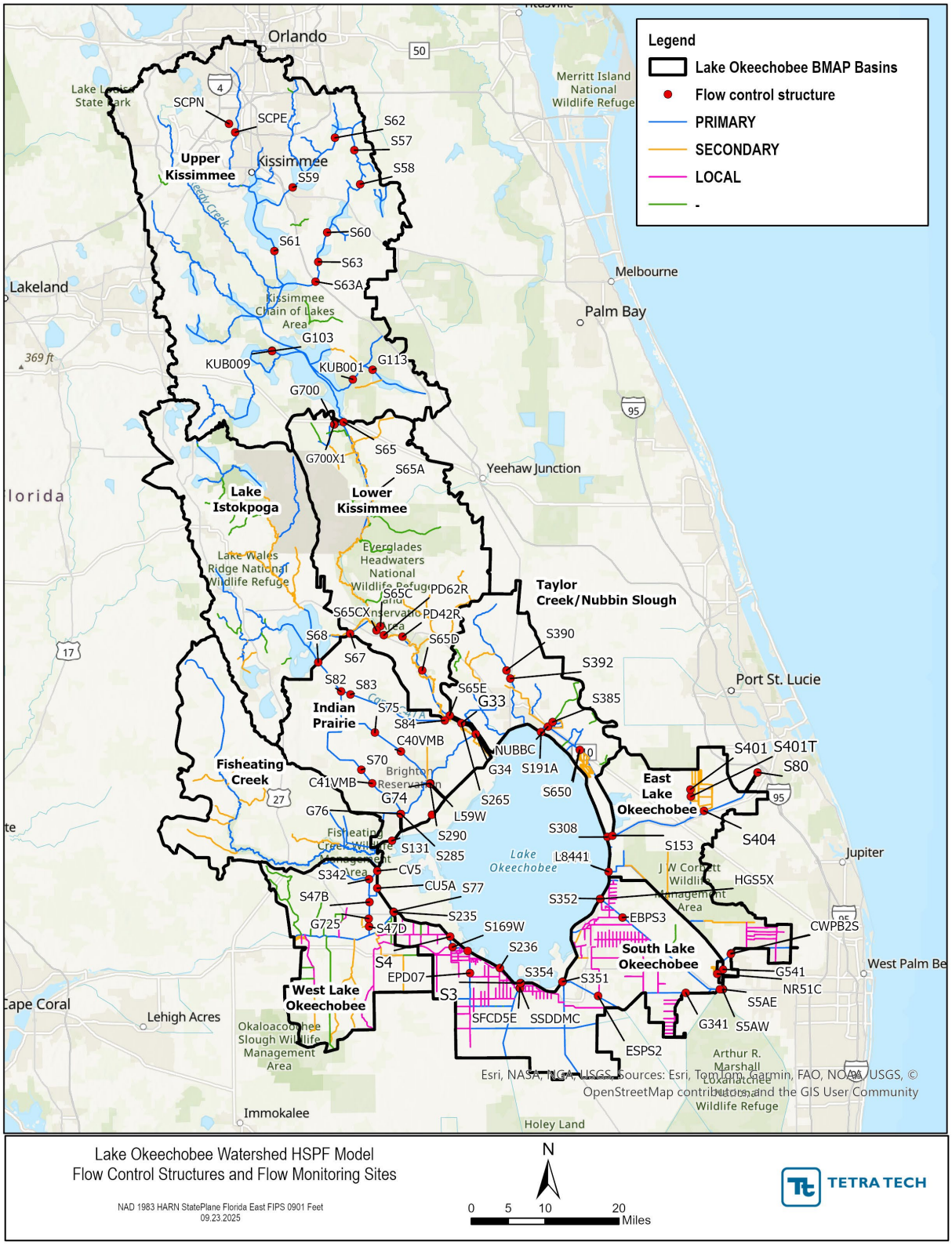

Figure 36. Spatial coverage of flow control structures and monitoring sites in the Lake Okeechobee Watershed

2.8 LAKE OKEECHOBEE OPERATIONS BOUNDARY CONDITIONS

Lake Okeechobee stage is managed through releases from six main outlets (S-77, S-354, S-351, S-352, S-271, and S-308), which are controlled by USACE and SFWMD (USACE, 2024) (***Figure 37*** through ***Figure 39***).

Overall, to develop the flow boundary condition timeseries, average daily flows were obtained from a nearby USGS station or the operation structure. for the model simulation period (2008 through 2023). Data were processed to provide continuity and consistency over the simulation period. The measured negative flows were distributed via volume weighting and withdrawn from the timeseries to represent the bidirectional flow caused by pumping or reverse flows.

Measured water quality data from monitoring stations at or nearby flow boundary stations were evaluated and used to construct water quality timeseries associated with positive flows. A daily concentration time series for the simulation constituents were created by using: (1) observed data on days when observations were available, (2) monthly average by year to fill in gaps between daily observations, (3) long-term monthly averages for entire model simulation period in months where data were not collected, and (4) seasonal average for entire model simulation period in months where long-term monthly average were not available. Water quality input loads were tabulated for days with positive flows by synchronizing the compiled flow and water quality datasets. Water quality input loads were calculated by multiplying positive flow volumes for days in the time series with corresponding water quality concentrations. The measured negative flows were distributed via volume weighting and withdrawn from relevant reaches downstream of structures to represent the bidirectional flow caused by the pumping. The associated water quality loads were also withdrawn from relevant reaches. This process ensures the model boundary condition accurately reflects the temporal variability in both hydrology and water quality contributions from Lake Okeechobee.

The following sections describe flow and water quality timeseries development for representing flow and nutrient contributions to the watershed model from Lake Okeechobee.

2.8.1.1 West Lake Okeechobee Subwatershed

S-77 Spillway and Lock on Caloosahatchee River at Lake Okeechobee

Lake Okeechobee releases water to the Caloosahatchee River via S-77 lock (S-77 spillway and lock on Caloosahatchee River at Lake Okeechobee) (***Figure 37***). USACE maintains a record of the daily average flow at S-77 where positive flow indicates movement from Lake Okeechobee to the Caloosahatchee River and negative flow indicates movement from the Caloosahatchee River to Lake Okeechobee. During the model simulation period from January 1, 2008 through December 31, 2023, water in the Caloosahatchee River was pumped back into Lake Okeechobee 5% of the time. During the simulation period, USACE S-77 data were 96% complete. Following the Caloosahatchee River and Estuary HSPF model development, data gaps were filled using USGS 02292010 (Caloosahatchee Canal downstream of S-77 at Moore Havesn, FL) (240 days, which is 4% of the series)(***Figure 37***). The best professional judgment using linear interpolation between existing data points was used to fill the remaining one day. A summary of streamflow site used for developing S-77 boundary condition is shown in ***Table 35***.

Water quality data at the S-77 site (S-77 spillway and lock on Caloosahatchee River at Lake Okeechobee) are recorded by SFWMD (***Figure 37***). Following the Caloosahatchee River and Estuary HSPF model development, measured water quality data at S-77 station were used to construct the water quality timeseries associated with positive flows from 2008 through 2023. ***Table 36*** summarizes the available measured water quality parameters and the number of observed parameters at the S-77 site.

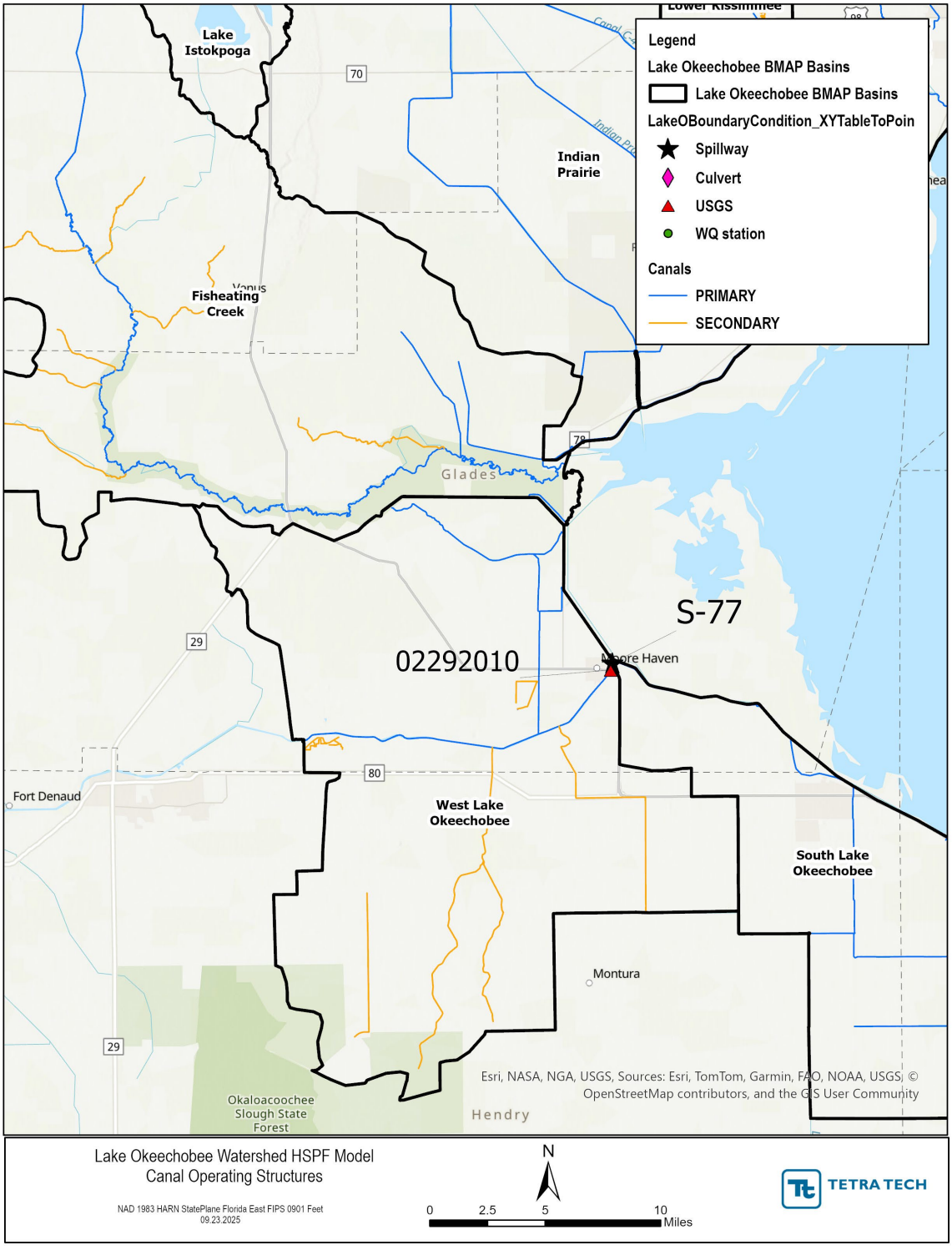

Figure 37. West Lake Okeechobee subwatershed release structure using USGS streamflow station for developing boundary conditions

2.8.1.2 South Lake Okeechobee Subwatershed

Water is released from Lake Okeechobee to Miami Canal/L-25 Canal, Hillsboro Canal/L-14 Canal and North New River Canal (NRR) (L-20/L-19), and West Palm Beach Canal/L-10 canal through S-354, S-351, and S-352 structures, respectively (USACE, 2024). SFWMD recorded the daily average flow at S-354, S-351, and S-352 structures. During large rainfall events, pump station S-2 moves water from NNR (L-20/L-19) Canal and Hillsboro Canal (L-14), and pump station S-3 moves water from the Miami Canal to Lake Okeechobee (***Figure 38***). The operations of pump stations S-2 and S-3 are regulated by the state of Florida's Lake Okeechobee Operating Permit, which mandates that pumping for flood risk management cannot begin until Everglades Agricultural Area (EAA) canal water levels reach 12.5 feet (USACE, 2024).

S-354 Spillway Structure Located at S-3 Pump

SFWMD maintains a record of the daily average flow at S-354 (spillway structure located at S-3 pump water discharge from Lake Okeechobee to EAA), where positive flow indicates movement from Lake Okeechobee to Miami Canal (L-25 Canal), and negative flow indicates movement from Miami Canal (L-25 Canal) to Lake Okeechobee. During the model simulation period from January 1, 2008 through December 31, 2023, water in the Miami Canal (L-25 Canal) was pumped back into Lake Okeechobee less than 2% of the time. The primary source of data for boundary condition development was the S-354 site, with 99.9% data completion during the simulation period. Data gaps were filled using USGS 02286400 (Miami Canal at S-354 and S-3 at Lake Harbor, FL) (***Figure 38***). The measured negative flows were distributed via volume weighting and withdrawn from the Miami Canal (L-25 Canal) to represent the bidirectional flow caused by pumping. ***Table 35*** provides a summary of streamflow sites evaluated for the S-354 (spillway structures located at S-3 pump water discharge from Lake Okeechobee to EAA) boundary condition.

SFWMD maintains records of constituent concentrations for S-354 (spillway structure located at S-3 pump; discharges water from Lake Okeechobee to EAA). Except for TP, all other water quality parameters, including TSS, DO, chlorophyll-a (CHLA), TN, NO_x, NH_3, TKN, PO_4, total organic carbon (TOC), and water temperature, were collected sporadically, and BOD was not sampled at S-354 (***Table 36***). Two nearby active water quality stations located in open waters of Lake Okeechobee, POLE3S (3 Pole structure in South Lake Okeechobee, west of Rita Island) and RITTAE2 (South Bay W-8), provide additional valuable constituent concentration measurements for TSS, DO, NH_3, NOx, TN, PO_4, TP, CHLA, and water temperature during model simulations (SFWMD, Accessed 2025f) (***Figure 38***). Tetra Tech supplemented data gaps by using average records from POLE3S and RITTAE2 sites. However, BOD concentrations were not recorded at any of these stations. ***Table 36*** provides a summary of water quality monitoring stations, available observed parameters, and number of observed parameters at each station.

S-351 Spillway on Lake Okeechobee to Hillsboro Canal

The daily average flow at the S-351 (spillway on Lake Okeechobee to Hillsboro Canal) is recorded by SFWMD, where positive flow represents movement from Lake Okeechobee to Hillsboro Canal (L-14 Canal) and NNR Canal (L-20/L-19 Canal), and negative flow indicates movement from Hillsboro Canal/L-14 Canal and NNR Canal/L-20 Canal to Lake Okeechobee. During the model simulation period from January 1, 2008 through December 31, 2023, water in the Hillsboro Canal (L-14 Canal) and NNR Canal (L-20/L-19 Canal) was pumped back less than 1% of the time. The primary source of data for boundary condition development was the S-351 site, with 99.6% data completion during the simulation period. Data gaps were filled using the average daily flow from USGS 02280500 (Hillsboro Canal below S351 nr South Bay, FL) and USGS 02283500 (North New River Canal below S351 nr South Bay, FL) (***Figure 38***). The measured negative flows were distributed via volume weighting and withdrawn evenly from Hillsboro Canal (L-14 Canal) and North New River Canal (L-20/L-19 Canal) to represent the bidirectional flow caused by pumping. ***Table 35*** provides a summary of streamflow sites evaluated for the S-351 (spillway on Lake Okeechobee to Hillsboro Canal) boundary condition.

Similarly, SFWMD maintains records of constituent concentrations at the S-351 site (spillway structure located at S-2 pump; discharges water from Lake Okeechobee to EAA). Except for TP, all other water quality constituents were collected only sporadically (***Table 36***). However, BOD, CHLA, and TOC were not measured at S-351 during simulation period. Three additional monitoring stations in the open waters of Lake Okeechobee supply further water quality data: two active water quality stations PELBAY3 (Pelican Bay – 1) and LZ25A (Lake Okeechobee, South Side) and one inactive water quality station PELMID (Middle of Pelican Bay; data availability 2008-2009) (SFWMD, Accessed 2025f) (***Figure 38***). To fill the data gaps, Tetra Tech used data records from PELBAY3 (Pelican Bay – 1), LZ25A (Lake Okeechobee, South Side), and PELMID (Middle of Pelican Bay; data availability 2008-2009). These stations reported water quality measurements for TSS, DO, NH_3, NOx, TN, PO_4, TP, CHLA, and water temperature, but non recorded BOD and TOC during the simulation period.

S-352 Spillway on Lake Okeechobee to West Palm Beach Canal

SFWMD maintains the daily average flow at the S-352 (spillway on Lake Okeechobee to West Palm Beach Canal), where positive flow represents movement from Lake Okeechobee to West Palm Beach Canal (L-10/L-12 Canal) and negative flow indicates movement from West Palm Beach Canal (L-10/L-12 Canal) to Lake Okeechobee. During the model simulation period from January 1, 2008, through December 31, 2023, water in the West Palm Beach Canal (L-10/L-12 Canal) was pumped back less than 1% of the time. The primary source of data for boundary condition development was the S-352 site, with 99.9% data completion during the simulation period. Data at USGS 02278000 (West Palm Beach Canal at S352 at Canal Point, FL) (***Figure 38***) were only available from January 1, 2008, through September 29, 2008, while data gaps occurred in 2011 and 2019. Therefore, the best professional judgment using linear interpolation between existing data points was used to fill eight data gaps. The measured negative flows were distributed via volume weighting and withdrawn from West Palm Beach Canal (L-10/L-12 Canal) to represent the bidirectional flow caused by pumping. ***Table 35*** provides a summary of streamflow sites evaluated for the S-352 (spillway on Lake Okeechobee to West Palm Beach Canal).

To reduce nutrient loading into Lake Okeechobee, stormwater runoff from EAA is first pumped south to the Flow Equalization Basins (FEBs)/ STAs, and then back to Lake Okeechobee (USACE, 2024). Pump station S-5A primarily moves water from the West Palm Beach Canal (L-10/L-12) to STA or FEB. SFWMD operates structures S-5AE (culvert on West Palm Beach Canal), S-5AW (culvert on West Palm Beach Canal at L-8 Levee), and S-5AS (spillway at L-8 Canal to Conservation Area 1) in advance of the storm as directed by SFWMD water managers (***Figure 36***). ***Table 37*** presents the canal operating range for those structures.

At S-352 (spillway on Lake Okeechobee to West Palm Beach Canal), water quality data were measured by SFWMD. The station reported water quality measurements for TSS, DO, NH_3, NOx, TKN, TN, PO_4, TP, CHLA, and water temperature, but did not record BOD and TOC during the simulation period, and no active water quality stations were available to fill those data gaps. ***Table 36*** summarizes the parameters measured at S-352 and the total number of observed parameters.

Figure 38. South Lake Okeechobee subwatershed release structures using USGS streamflow, and water quality stations for developing boundary conditions

2.8.1.3 East Lake Okeechobee Subwatershed

S-271 Structure (4 Gated Culvert in Lake Okeechobee)

Water is released from Lake Okeechobee to the L-8 Canal through the S-271 structure (4 gated culvert in Lake Okeechobee)(***Figure 39***). SFWMD recorded the daily average flow at S-271 starting June 30, 2021, but the record was only 47% complete, with an average flow of 0 cfs. However, USGS 0265501080364900 (Levee 8 Canal near Canal Point, FL) recorded daily average flow data during the simulation period (January 1, 2008, through December 31, 2023), where positive values denote eastward discharge from Lake Okeechobee into L-8 Canal (***Figure 40***). Flow reverses during and after periods of heavy rainfall because of pumpage into the canal from agricultural lands (USGS, Accessed 2025). USGS data were 99% complete, with flow reverses 37% of the time during the simulation period. Data gaps were filled using USGS 0265501080364900 data. Best professional judgment using linear interpolation between existing data points was used to fill the remaining 50 days. Discrepancies in flow were noted between the SFWMD S-271 and USGS 0265501080364900 measurements (***Figure 40***). Tetra Tech will need to test out the USGS timeseries during the hydrology calibration. ***Table 35*** summarizes the streamflow monitoring sites evaluated for the S-271 structure (4 gated culvert in Lake Okeechobee). S-76 spillway is an L-8 Canal divide structure located downstream of S-271 spillway (***Figure 42***). The normal operating range for the S-76 structure is 12–15 feet NGVD29. If Lake Okeechobee falls below 12 feet NGVD29, the canal level will be maintained equal to the lake level (USACE, 2024). There are no publicly available flow rate or stage level data for the S-76 structure.

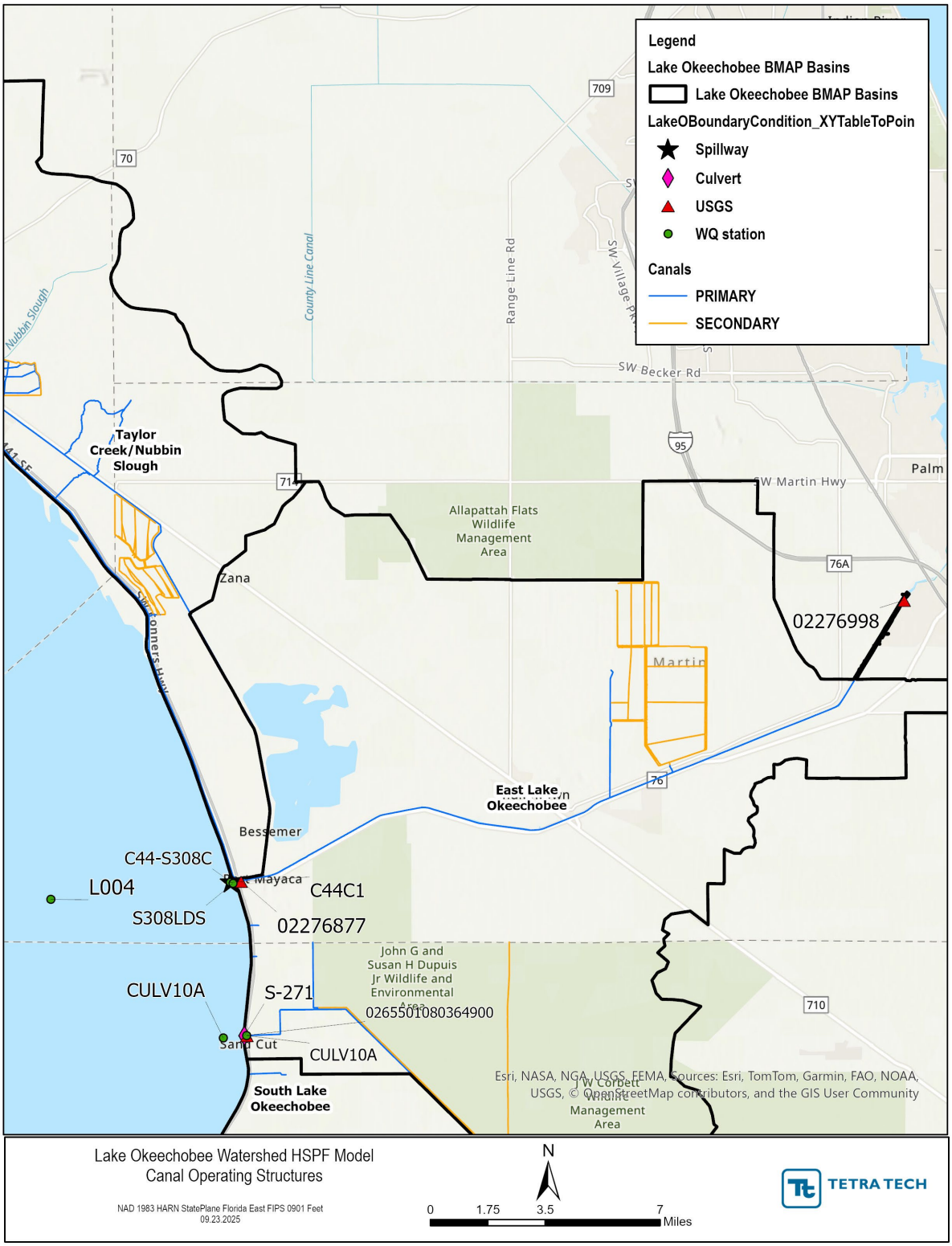

Figure 39. East Lake Okeechobee subwatershed release structures using USGS streamflow, and water quality stations for developing boundary conditions

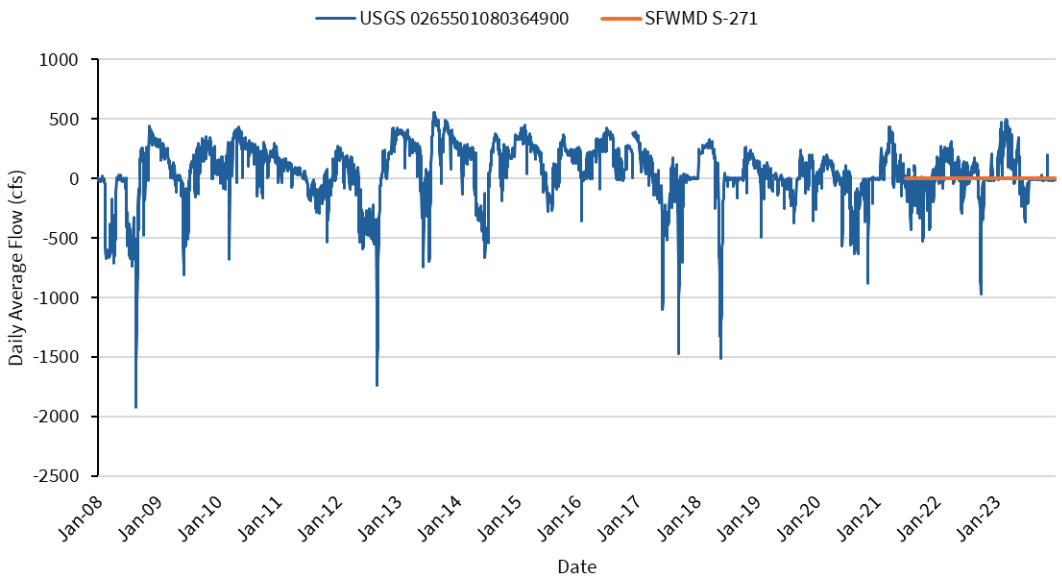

Figure 40. Daily average flow comparisons at S-271 structure (4 gated culvert in Lake Okeechobee) and USGS 0265501080364900 (Levee 8 Canal near Canal Point, FL) at East Lake Okeechobee subwatershed

Between 2022 and 2023, SFWMD collected water quality data at the S-271 Lakeside site (4 gated culvert in Lake Okeechobee) for the Blue-Green Algae Response project, measuring TSS, DO, NH_3, NOx, TN, PO_4, TP, CHLA, and water temperature (SFWMD, Accessed 2025f). In addition, SFWMD reported water quality measurements at the CULV10A at L-8 Canal (Intersection Levee-8 and US Highway 441) and offshore water quality station at CULV10A (1000 YDS. offshore of structure Culvert 10A) for TSS, DO, NH_3, NO_x, TKN,TN, PO_4, TP, CHLA, TOC, and water temperature (SFWMD, Accessed 2025f) (***Figure 39*** and ***Table 36***). Tetra Tech developed water quality timeseries for S-271 by using measured water quality data at S-271 Lakeside, CLV10A (L-8 canal) and CLV10A (1,000 yards offshore of structure Culvert 10A) sites. However, none of these sites measured BOD concentrations.

S-308 Spillway and Sector Flow on St. Lucie Canal at Lake Okeechobee

Water in the C-44 Canal (St. Lucie River) flows back into Lake Okeechobee through gravity, and this occurred 35% of the time during the data collection period for the model (January 1, 2008 through December 31, 2023). During these events, the flow of water in the St. Lucie River reverses and moves towards Lake Okeechobee. USACE recorded the daily average flow at S-308 on St. Lucie Canal (C-44) at Lake Okeechobee (***Figure 39***). During the simulation period, USACE S-308 data were 98% complete. Following the St. Lucie River and Estuary HSPF model development, data gaps were filled using USGS 02276877 (St. Lucie Canal below S-308, NR Port Mayaca (AUX), FL) for 130 days, which is 2% of the series. Some discrepancies in flow were noted between the USACE S308_S and USGS 02276877 measurements (***Figure 41***). Looking downstream at USGS 02276998, it appears that USACE S308_S may match a bit better timeseries at the downstream station (USGS 02276998 St Lucie Canal abv S-80 nr Stuart, FL downstream station at C-44 canal), although USGS 02276998 displays higher average flow overall (540 cfs versus 283 cfs at S-308). Tetra Tech will test the USACE S308-S and USGS 02276998 time series during the hydrology calibration. ***Table 35*** presents an overview of streamflow monitoring sites evaluated for the S-271 and S-308 structures.

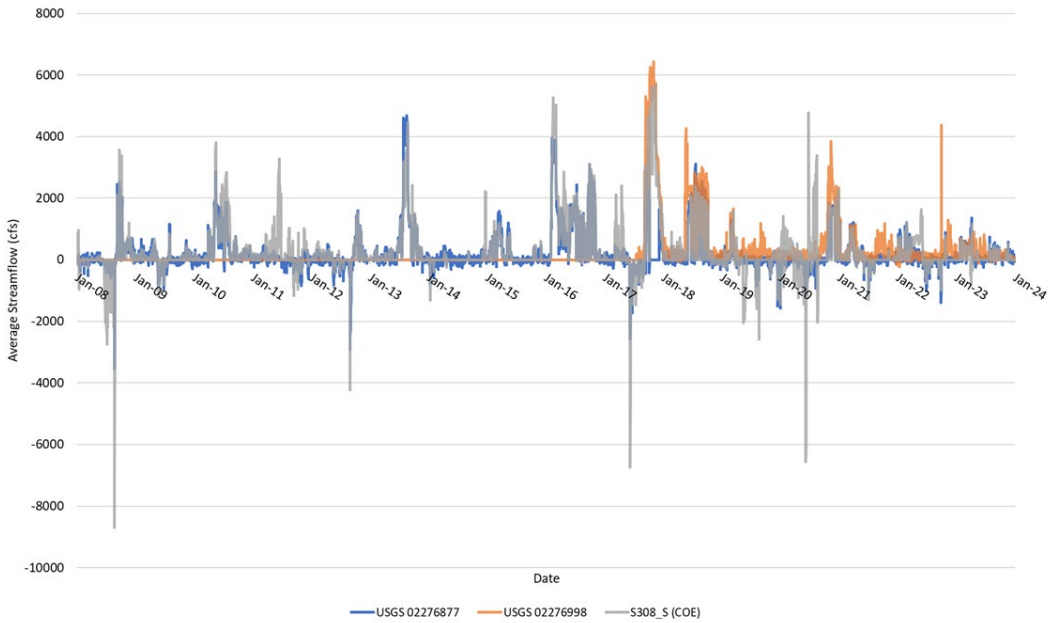

Figure 41. Daily average flow comparisons near the boundary of Lake Okeechobee and St. Lucie Canal

Four water quality monitoring sites provide valuable constituent concentration measurements at S-308 structure (spillway at St. Lucie canal and Lake Okeechobee) (***Figure 39***). SFWMD collected water quality samples for DO, NH_3, NO_X, TN, PO_4, TP, CHLA, and water temperature at C441C1 for 2021 and 2023 (***Table 36***). Also, water quality sampling was conducted at S308LDS downstream of S-308 structure for DO, NH_3, NO_X, TN, PO_4, TP, CHLA, and water temperature by SFWMD in 2023 (***Table 36***). In addition, at Intersection of Herbert Hoover Dike and the East St. Lucie River (C44Canal-S308C) SFWMD collected water quality samples (TSS, DO, BOD, NH_3, NO_X, TKN, TN, PO_4, TP, CHLA, TOC, and water temperature) that spans from 2008 through 2023 (***Table 36***) (SFWMD, Accessed 2025f). Station L-004 (L.Okee-cntrl, 6.0 statute miles due West of Buoy C#5 adjacent to St. Lucie Canal) located in open waters of Lake Okeechobee provide additional water quality measurements for TSS, DO, NH_3, NO_X, TKN, TN, PO_4, TP, CHLA, TOC, and water temperature (***Table 36***) (SFWMD, Accessed 2025f). The water quality data were compiled from sporadic measurements at stations including C44C1, S308LDS, C44Canal-S308C, and L-004. Temperature data were supplemented with measurements from S-308C and USGS 02276877 (St. Lucie Canal below S-308)(***Figure 39*** and ***Table 36***).

Limited measured data were publicly available for developing the BOD timeseries boundary condition in Lake Okeechobee. Therefore, based on average BOD concentrations at S-77 (2.9 mg/L) and S-308C (2.1 mg/L), Tetra Tech recommended using a value of 2 mg/L to fill BOD gaps at the S-354, S-351, S-352, and S-271 sites. To fill TOC data gaps for S-351 and S-352 sites, Tetra Tech recommended adopting the available measured TOC values from the S-354 site to construct TOC timeseries at the S-351 and S-352 sites in the South Lake Okeechobee subwatershed.

Table 35. Summary of streamflow gages evaluated for the Lake Okeechobee watershed boundary condition development

Site ID	Subwatershed	Site Description	Minimum Streamflow (cfs)	Minimum Positive Streamflow (cfs)	Maximum Streamflow (cfs)	Average Flow (cfs)
S-77	West Lake Okeechobee	Spillway and sector gate (lock) on Caloosahatchee River at Lake Okeechobee	-1,416	0.80	8,984	924.4

Site ID	Subwatershed	Site Description	Minimum Streamflow (cfs)	Minimum Positive Streamflow (cfs)	Maximum Streamflow (cfs)	Average Flow (cfs)
02292010 (USGS)	West Lake Okeechobee	Caloosahatchee canal dws of S-77 at Moore Haven, FL	8.46	8.46	12.13	11.02
S-354 (USACE/SFWMD)	South Lake Okeechobee	Spillway structure located at S3 pump water discharge from Lake Okeechobee to EAA	-1,223	0.018	5,785	256.8
02286400 (USGS)	South Lake Okeechobee	Miami Canal at S-354 and S-3 at Lake Harbor, FL	-2,270	0.12	1,860	211.2
S-351 (USACE/SFWMD)	South Lake Okeechobee	Spillway on Lake Okeechobee to Hillsboro canal	-573	0.002	3,609	356.3
02280500 (USGS)	South Lake Okeechobee	Hillsboro Canal below S351 nr South Bay, FL	-1,800	0.34	918	124.7
02283500 (USGS)	South Lake Okeechobee	North New River Canal below S351 nr South Bay, FL	-1,750	0.13	1,140	168.9
S-352 (USACE/SFWMD)	South Lake Okeechobee	Spillway on Lake Okeechobee to West Palm Beach canal	-513	0.001	1,410	176.7
02278000 (USGS)	South Lake Okeechobee	West Palm Beach Canal at S352 at Canal Point, FL	0.0	0.0	0.0	0.0
S-271 (USACE/SFWMD)	East Lake Okeechobee	4 gated culvert in Lake Okeechobee	0.0	0.0	0.0	0.0
026550108036490 0 (USGS)	East Lake Okeechobee	Levee 8 Canal near Canal Point, FL	-1,920	0.01	552	48.2
S308_S (USACE/SFWMD)	East Lake Okeechobee	S-308 spillway and sector flow on St. Lucie canal at Lake Okeechobee	-8,665	0.40	5,669	289.2
02276877 (USGS)	East Lake Okeechobee	St. Lucie canal blw S-308, nr Port Mayaca (aux), FL	-3,510	0.01	4,680	220.9
02276998 (USGS)	East Lake Okeechobee	St Lucie Canal abv S-80 nr Stuart FL	-206	0.53	6,430	539.8

Table 36. Number of observations and period of available water quality data at the evaluated monitoring stations

Site Description	Site ID	NH_3 mg/L	NOx mg/L	TKN mg/L	TN mg/L	PO_4 mg/L	OrgP mg/L	TP mg/L	BOD mg/L	TSS mg/L	DO mg/L	WTEM Deg C	TOC mg/L	CHLA µg/L
S-77 spillway and lock on Caloosahatchee River at Lake Okeechobee	S-77	859, 2008 - 2017	806, 2008 - 2023	438, 2008 - 2017	414, 2016 - 2023	798, 2008 - 2023	NA	1502, 2008 - 2023	10, 2008 - 2009	393, 2008 - 2023	850, 2008 - 2023	863, 2008 - 2023	428, 2009 - 2023	462, 2008 - 2023
S-354 spillway structure located at S3 pump	S-354	39, 2008 – 2009, 2015 – 2017, 2019	513, 2008 - 2019	503, 2008 - 2017	265, 2015 - 2023	39, 2008 – 2009, 2015 – 2017, 2019	NA	770, 2008 - 2023	NA	39, 2008 - 2009, 2015 - 2017, 2019	32, 2008 - 2009, 2016, 2019	32, 2008 - 2009, 2016, 2019	9, 2015 - 2017, 2019	9, 2015 - 2017, 2019
3 pole structure in South Lake Okee West of Ritta Island	POLE3S	202, 2008 - 2023	202, 2008 - 2023	NA	134, 2014 - 2023	202, 2008 - 2023	NA	201, 2008 - 2023	NA	202, 2008 - 2023	201, 2008 - 2023	201, 2008 - 2023	NA	179, 2010 - 2023
South Bay W-8	RITTAE2	186, 2009 - 2023	186, 2009 - 2023	NA	131, 2014 - 2023	186, 2009 - 2023	NA	185, 2009 - 2023	NA	186, 2009 - 2023	186, 2009 - 2023	186, 2009 - 2023	NA	176, 2010 - 2023
S-351 spillway structure located at S2 pump	S-351	30, 2008 - 2009	506, 2008- 2017	496, 2008 - 2017	254, 2017 - 2023	31, 2008 - 2009	NA	766, 2008 - 2023	NA	46, 2008 - 2015	33, 2008 - 2009, 2016	33, 2008 - 2009, 2016	NA	NA
Pelican Bay – 1	PELBAY3	201, 2008 - 2023	201, 2008 - 2023	66, 2008 - 2014	135, 2014 - 2023	201, 2008 - 2023	NA	200, 2008 – 2023	NA	201, 2008 - 2023	200, 2008 – 2023	200, 2008 – 2023	NA	207, 2008 - 2023
Lake Okeechobee, South Side	LZ25A	190, 2009 - 2023	190, 2009 - 2023	55, 2009 - 2014	190, 2009 - 2023	190, 2009 - 2023	NA	188, 2009 - 2023	NA	190, 2009 - 2023	190, 2009 - 2023	190, 2009 - 2023	NA	195, 2009 - 2023
Middle of Pelican Bay	PELMID	12, 2008 - 2009	12, 2008 - 2009	13, 2008 - 2009	NA	13, 2008 - 2009	NA	13, 2008 - 2009	NA	13, 2008 - 2009	12, 2008 - 2009	12, 2008 - 2009	NA	13, 2008 - 2009
Spillway on Lake Okeechobee to W.P.B canal	S-352	768, 2008 - 2023	1,794, 2008 - 2023	1,492, 2008 - 2018	818, 2017 - 2021	886, 2008 - 2023	NA	2,494, 2008 - 2023	NA	662, 2008 - 2023	868, 2008 - 2023	872, 2008 - 2023	NA	7, 2021 - 2023
S-271 Lakeside	S-271	5, 2022- 2023	5, 2022- 2023	NA	5, 2022- 2023	5, 2022- 2023	NA	5, 2022- 2023	NA	NA	5, 2022- 2023	5, 2022- 2023	NA	5, 2022- 2023

Site Description	Site ID	NH_3 mg/L	NOx mg/L	TKN mg/L	TN mg/L	PO_4 mg/L	OrgP mg/L	TP mg/L	BOD mg/L	TSS mg/L	DO mg/L	WTEM Deg C	TOC mg/L	CHLA µg/L
Intersection Levee-8 and US Hwy 441	CULV10A	533, 2008 - 2023	384, 2008 - 2023	239, 2008 - 2017	143, 2017 - 2023	371, 2008 - 2023	NA	386, 2008 - 2023	NA	381, 2008 - 2023	372, 2008 - 2023	372, 2008 - 2023	51, 2009 - 2019	15, 2015 – 2019, 2022
1000 YDS. offshore of structure Culvert 10A	CULV10A	219, 2008 - 2023	219, 2008 - 2023	83, 2008 - 2014	137, 2014 - 2023	220, 2008 - 2023	NA	219, 2008 - 2023	NA	219, 2008 - 2023	219, 2008 - 2023	219, 2008 - 2023	63, 2008 - 2012	226, 2008 - 2023
S308C Collected on Canal Side of Structure	C44C1	12, 2021, 2023	12, 2021, 2023	NA	12, 2021, 2023	12, 2021, 2023	NA	12, 2021, 2023	NA	NA	12, 2021, 2023	12, 2021, 2023	NA	12, 2021, 2023
S308 Lock Downstream	S308LDS	11, 2023	11, 2023	NA	11, 2023	11, 2023	NA	11, 2023	NA	NA	11, 2023	11, 2023	NA	11, 2023
At Intersection of Herbert Hoover Dike and the East St. Lucie River	C44 Canal-S308C	531, 2008 - 2023	530, 2008 - 2023	313, 2008 - 2018	218, 2017 - 2023	531, 2008 - 2023	NA	531, 2008 - 2023	45, 2008 - 2009	522, 2008 - 2023	524, 2008 - 2023	524, 2008 - 2023	480, 2009 - 2023	527, 2008 - 2023
L.Okee-cntrl, 6.0 statute miles due West of Buoy C#5 adjacent to St. Lucie Canal	L004	218, 2008 - 2023	215, 2008 - 2023	76, 2008 - 2014	140,	216, 2008 - 2023	NA	216, 2008 - 2023	NA	216, 2008 - 2023	216, 2008 - 2023	216, 2008 - 2023	56, 2008 - 2012	222, 2008 - 2023
St. Lucie Canal below S-308	02276877	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,122 2021-2023	NA	NA

2.9 CANAL OPERATING STRUCTURES

SFWMD provided a list of canal operation structures around Lake Okeechobee (***Table 37***). USACE and SFWMD regulate flow between Lake Okeechobee and the canals through structures that include lock, culverts, and pumping stations. The operation of the structures is dependent on Lake Okeechobee stage as presented in ***Table 37***. ***Figure 42*** presents the spatial location of canal operating structures around Lake Okeechobee.

Table 37. Canal operating structures and operating ranges for structures within the Lake Okeechobee watershed

Canal or Waterbody	Structure	Structure Type	Operating Range (NGVD29 feet)	BMAP Subwatershed
C-43/Lake Okeechobee	S-77	Spillway – Release outlet from the Lake	NA	West Lake Okeechobee
C-43	S-78	Spillway	10.6–11.5*	West Lake Okeechobee
C-44/ Lake Okeechobee	S-308	Spillway – Release outlet from the Lake	NA	East Lake Okeechobee
C-44	S-80	Spillway	14-14.5*	East Lake Okeechobee
Old Kissimmee River	S-265	Culvert	16.5 - 18	Indian Prairie
L-59	S-266	Culvert	16.5 - 18	Indian Prairie
LD-4	S-267	Culvert	13 - 14	Taylor Creek/ Nubbin Slough
LD-4	S-268	Culvert	13 - 14	Taylor Creek/ Nubbin Slough
C-11 Ditch	S-269	Culvert	12 - 13	East Lake Okeechobee
C-16 Ditch	S-270	Culvert	12 - 13	East Lake Okeechobee
L-8/Canal Point	S-271	Culvert - Release outlet from the Lake	12 - 15*	East Lake Okeechobee
S-272 Canal Pelican Lake WCD Main Canal	S-272	Culvert	13.5	East Lake Okeechobee
Pelican Island Canal	S-273	Culvert	16.5	South Lake Okeechobee
S-274 Inflow Canal	S-274	Culvert	*	South Lake Okeechobee
S-275 Inflow Canal	S-275	Culvert	16.5	South Lake Okeechobee
South Shore Drainage District Canal 3	S-276	Culvert	16.5	South Lake Okeechobee
South Florida Conservancy District Canal 2	S-277	Culvert	8.0	South Lake Okeechobee
C-21/Industrial Canal	S-278	Culvert	13.7 - 15.6*	South Lake Okeechobee
LD-1/Disston Island Conservancy District Canal 1	S-279	Culvert	10 - 14	South Lake Okeechobee
LD-1/LD-3/Disston Island Conservancy District Canal 1	S-280	Culvert	10 - 14	South Lake Okeechobee

Canal or Waterbody	Structure	Structure Type	Operating Range (NGVD29 feet)	BMAP Subwatershed
L-41	S-281	Culvert	13.5 - 15.4	West Lake Okeechobee
Nicodemus Slough	S-282	Culvert	12.5 - 16	West Lake Okeechobee
L-50/L-61	S-283	Culvert	13 - 13.5	Fisheating Creek
L-61	S-284	Culvert	17.3 - 19	Indian Prairie
L-60	S-285	Culvert	16 - 17.5	Indian Prairie
C-41	S-286	Culvert	13.6 – 15.6	Indian Prairie
C-41	S-287	Culvert	13.6 – 15.6	Indian Prairie
C-41	S-288	Culvert	9.6 - 16.8	Indian Prairie
L-49 Toe Drain	S-289	Culvert	13 - 13.5	Indian Prairie
L-60	S-290	Culvert	16.7 - 18.5	Indian Prairie
L-59	S-291	Spillway	16.5 - 19.0	Indian Prairie
C-40	S-292	Culvert	13.3 - 17.8	Indian Prairie
Hillsboro/N. New River	S-2	Pump station	10.0 - 13.0	South Lake Okeechobee
Miami Canal	S-3	Pump station	10.0 - 13.0	South Lake Okeechobee
Canal 20	S-4	Pump station	9.5 - 14.0	South Lake Okeechobee
West Palm Beach Canal	S-5A	Pump station	9.0 - 13.0**	East Lake Okeechobee
Levee and Canal 8	S-5AE	Culvert	12.0 - 18.0	East Lake Okeechobee
Levee and Canal 9	S-5AW	Culvert	9.0 - 13.0	East Lake Okeechobee
Levee and Canal 10	S-5AS	Spillway	12.0 - 18.0	East Lake Okeechobee
Canal 19	S-47D	Spillway	12.0 – 13.0	West Lake Okeechobee
Canal 19	S-47B	Culvert	13.0 - 15.4	West Lake Okeechobee
Canal 38 (Kissimmee River)	S-65E/EX1	Spillway	See SOM Volume 2 - Kissimmee River-Lake Istokpoga Basin.	Upper Kissimmee
Canal 41	S-71	Spillway	See SOM Volume 2 - Kissimmee River-Lake Istokpoga Basin.	Indian Prairie
Canal 40	S-72	Spillway	See SOM Volume 2 - Kissimmee River-Lake Istokpoga Basin.	Indian Prairie
Levee and Canal 8	S-76	Spillway	12 - 15*	East Lake Okeechobee
Canal 41A	S-84	Spillway	See SOM Volume 2 - Kissimmee River-Lake Istokpoga Basin.	Indian Prairie
L-48 Borrow Canal	S-127	Pump station	13.25 – 14.0	Indian Prairie
L-49 Borrow Canal	S-129	Pump station	12.75 – 13.5	Indian Prairie
L-50 Borrow Canal	S-131	Pump station	12.75 – 13.5	Indian Prairie

Canal or Waterbody	Structure	Structure Type	Operating Range (NGVD29 feet)	BMAP Subwatershed
L-4 Borrow Canal	S-133	Pump station	13.25 – 14	Taylor Creek/Nubbin Slough
L-47 Borrow Canal	S-135	Pump station	13.25 – 14	Taylor Creek/Nubbin Slough
L-65 Borrow Canal	S-153	Spillway	18.6 – 19.1	Taylor Creek/Nubbin Slough-East Okeechobee
L-62 Borrow Canal	S-154	Culvert	21.8 – 23.8	Taylor Creek/Nubbin Slough
Industrial Canal	S-169W	Culvert	13.7 - 15.6**	South Lake Okeechobee
Canal 59 and L-63(N) and L-63(S) Borrow Canals	S-191	Spillway	18.0 - 19.7	Taylor Creek/Nubbin Slough
Taylor Creek	S-192	Culvert	18.0 - 19.7	Taylor Creek/Nubbin Slough
L-D1 and L-D3 Connecting Canal	S-235	Culvert	10.0 - 14	South Lake Okeechobee
South Florida Conservancy District Canal 2	S-236	Pump station	12.5 - 13.5	South Lake Okeechobee

*Same as Lake Okeechobee when lake levels are below the bottom range.
**Divide structure upstream.

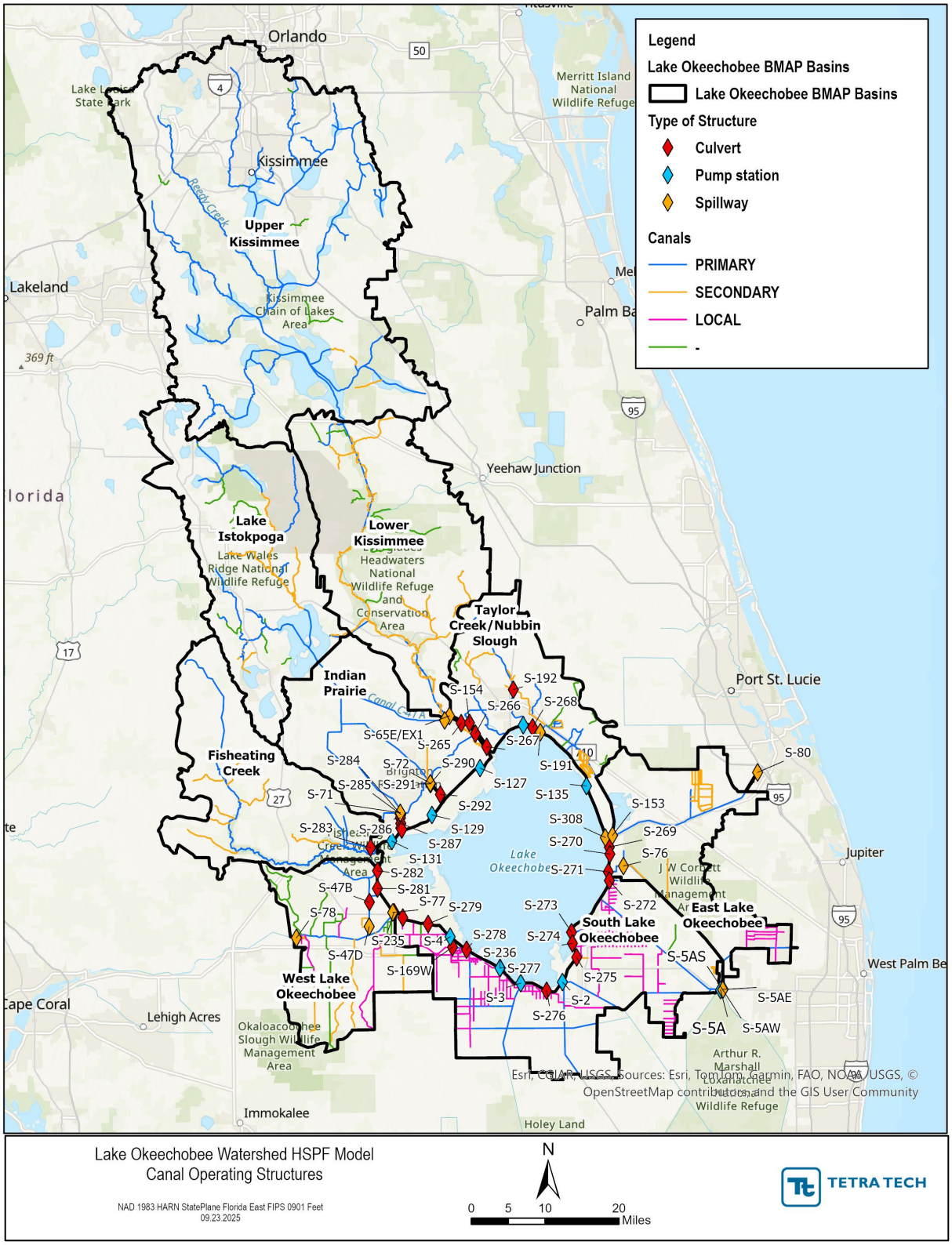

Figure 42. Spatial coverage of canal operating structures in the Lake Okeechobee Watershed

2.10 WATER QUALITY DATA

Tetra Tech received water quality data from DEP from several sources, including the Watershed Information Network (WIN) from 2015 to 2023 and USEPA Storage and Retrieval (STORET) database from 2008 to 2017. Stations from both datasets were grouped together and filtered to include only surface water data, and any duplicate data were removed. After combining the data, there were 1,943 unique water quality station locations in the Lake Okeechobee Watershed. Tetra Tech reviewed the number of observations and spatial proximity of stations to identify those that could be merged to reduce the number of stations.

In addition, Tetra Tech used the Lake Okeechobee BMAP (DEP, 2020) to identify Tier 1 and Tier 2 water quality stations. Tier 1 stations are the primary/priority stations used in periodic water quality analyses to track BMAP progress and water quality trends within the watershed. These stations are only SFWMD water control structure stations that record both water quality and flow data. Tier 2 stations include SFWMD ambient stations which are mostly open-water stations and do not record flow data.

Figure 43 presents the spatial coverage of water quality stations in the Lake Okeechobee Watershed. ***Table 38*** through ***Table 44*** present list of selected water quality stations for each BMAP basin within the Lake Okeechobee Watershed.

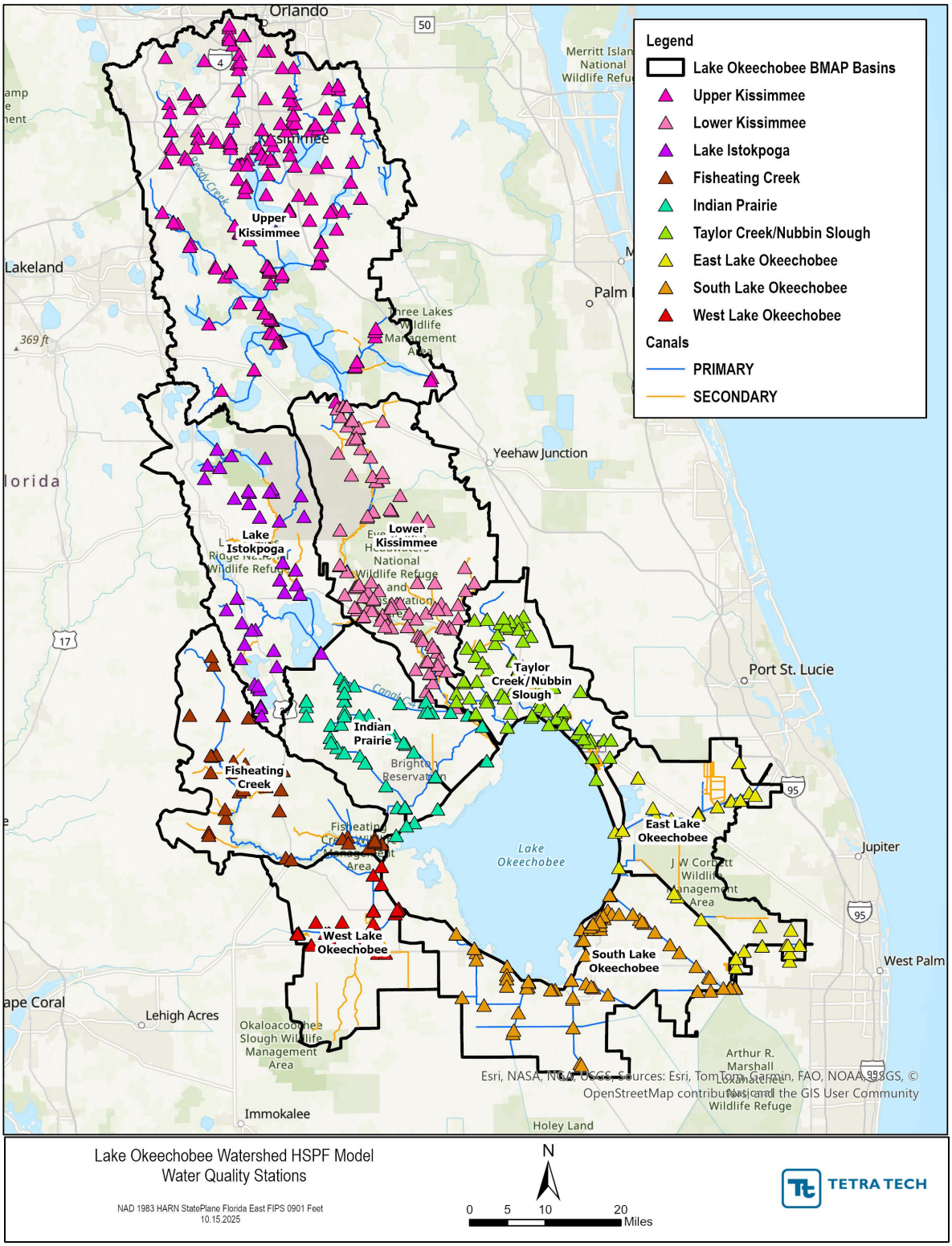

Figure 43. Spatial coverage of water quality stations in the Lake Okeechobee Watershed

Table 38. List of water quality stations in the Fisheating Creek subwatershed

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
026010513	RAINEY SL DIRT RD BR 4.0 MILES N	Rainey slough canal/Secondary	No	8	3	1	Nearby stations are 48561, and RS23402811
026010516	FISHEATING CR SR 70 BR W US 27 H	Local canal	No	10	5	2	Nearby station is 02255600
026010592	FISHEATING CREEK S OF PALMDALE	Fisheating Creek/Primary	No	8	4	1	Nearby station is 02256500
026010704FTM	FISHEATING CREEK WEST 731 SITE 2	Platt branch canal/Secondary	No	46	23	23	Nearby station is PB24392912
026010705FTM	FISHEATING CREEK EAST 731 SITE 3	Fisheating Creek/Primary	No	16	8	4	Nearby station is FE21392913
FISSCR0012FTM	Joe Slough at Graham Dairy Road	Joe Slough canal/Secondary	No	28	14	13	-
FISSCR0014FTM	Bootheel Creek @ End of Price Road	Bootheel Creek/Secondary	No	10	5	6	Nearby station is 45798
FISSCR0015FTM	Bootheel Creek @ New Bootheel Road	Bootheel Creek/Secondary	No	4	2	2	Nearby station is BH32382914
SC35382812	Fisheating Creek @ Blue Head Ranch - South Canal	Local canal	No	38	63	17	-
3497	FISHEATING CREEK AT U.S. 27, S. OF PALMDALE	Fisheating Creek/Primary	No	356	181	9	Nearby station is 02256500
38099	FISHEATING CREEK	Fisheating Creek/Primary	No	12	6	0	-
45798	Z5-SS-8050 BOOTHEEL CREEK	Bootheel Creek/Secondary	No	2	1	-	Nearby station is FISSCR0014FTM
51587	Z5-LR-11015 FISHEATING CREEK	Fisheating Creek/Primary	No	2	1	-	Nearby stations are 38508 and 39487
02255600	USGS Hydro/WQ Station on Fisheating @ Lake Placid	Fisheating Creek/Primary	No	208	127	-	Period of data availability: 2008 - 2015
02256500	USGS Hydro/WQ Station on Fisheating @ Palm Dale	Fisheating Creek/Primary	Yes - Tier 3	202	116	-	Period of data availability: 2008 - 2015
BH04392912	Culvert on Bootheel Rd off Old 8	Local canal	Yes -Tier 2	-	128	-	-
BH32382914	Bootheel Creek on Bootheel Rd off Old 8	Bootheel Creek/Secondary	Yes -Tier 2	-	59	-	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
FE03382911	SR 70 west of US 27Smoak Grove north retention pond	Local canal	Yes -Tier 2	-	29	-	Period of data availability: 2008 - 2015
FE20393013	CR 731 & US 27	Local canal	Yes -Tier 2	-	111	-	Period of data availability: 2008 - 2015
FE21392913	Fisheating Creek bridge on CR 731	Fisheating Creek/Primary	Yes -Tier 2	-	122	-	Period of data availability: 2008 - 2016
FE21392914	East of Fisheating Creek bridge on CR 731	Local canal	Yes -Tier 2	-	83	-	Period of data availability: 2008 - 2016
FE26362812	FEC at Clark Rd.	Local canal	Yes -Tier 2	-	137	-	Period of data availability: 2008 - 2016
FE32372814	SR 70 culverts east of Griffin shop entrance	Local canal	Yes -Tier 2	-	97	-	-
FE35362812	SR 70 west of US 27Fisheating Creek on Henscratch Ranch	Local canal	No	-	62	-	-
FE36382811	FEC Bridge on BHR	Fisheating Creek/Primary	No	-	56	-	-
FECSR78	FISHEATING CREEK AT STATE ROAD 78	Fisheating Creek/Primary	Yes - Tier 1	277	139	138	Period of data availability: 2008 - 2016
GA09393011	Gator Slough at Hwy 27	Local canal	Yes - Tier 2	-	170	-	Period of data availability: 2008 - 2016
GA23403113	Lykes Brothers south property boundary line	Gator slough canal/Primary	No	-	30	-	-
GG05403011	US 27north of SR 17	Local canal	Yes - Tier 2	-	66	-	Period of data availability: 2008 - 2015
JS11392811	Joe Slough on Blue Head Ranch off Graham Dairy Rd	Joe Slough on the Blue Ranch/ Secondary	No	-	39	-	-
PB24392912	CR 731 Platt Branch bridge	Platt branch canal/Secondary	Yes - Tier 2	-	174	-	Period of data availability 2008 - 2016
6553	Same as FECSR78 (FISHEATING CREEK AT STATE ROAD 78)	Fisheating Creek/Primary	Yes – Tier 1	203	186	185	Period of data availability 2016 - 2023
30851	Same as 02256500 (USGS Hydro/WQ Station on Fisheating @ Palm Dale)	Fisheating Creek/Primary	No	57	57	28	Period of data availability: 2015 - 2023
30852	Same as 02255600 (USGS Hydro/WQ Station on Fisheating @ Lake Placid)	Fisheating Creek/Primary	No	74	74	49	Period of data availability: 2015 - 2023
6504	Same as FE21392913 (Fisheating Creek bridge on CR 731)	Fisheating Creek/Primary	Yes -Tier 2	19	26	19	Period of data availability: 2015 - 2023

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
16074	Same as PB24392912 (CR 731 Platt Branch bridge)	Platt branch canal/Secondary	Yes - Tier 2	74	108	42	Period of data availability 2016 - 2023
6509	Same as FE32372814 (SR 70 culverts east of Griffin shop entrance)	Local canal	No	19	28	16	Period of data availability 2016 - 2023
2926	Same as BH04392912 (Culvert on Bootheel Rd off Old 8)	Local canal	Yes -Tier 2	46	62	46	Period of data availability 2016 - 2023
6505	Same as FE21392914 (East of Fisheating Creek bridge on CR 731)	Local canal	Yes -Tier 2	18	21	1	Period of data availability 2016 - 2023
6506	Same as FE26362812 (FEC at Clark Rd.)	Local canal	Yes -Tier 2	52	82	43	Period of data availability 2016 - 2023
6503	Same as FE20393013 (CR 731 & US 27)	Local canal	Yes -Tier 2	34	36	1	Period of data availability 2019 - 2023
6502	Same as FE03382911 (SR 70 west of US 27Smoak Grove north retention pond)	Local canal	Yes -Tier 2	38	40	38	Period of data availability 2019 - 2023
8719	Same as GA09393011 (Gator Slough at Hwy 27)	Local canal	Yes - Tier 2	57	60	28	Period of data availability 2019 - 2023
48820	GT07402911	Gannet slough canal/ Secondary	Yes - Tier 2	7	7	5	-
48560	HS06402911	John Henry slough canal/ Secondary	Yes - Tier 2	24	24	23	Period of data availability 2020 - 2023
48822	FE29403212	FC1 canal/ Primary	Yes - Tier 2	31	31	30	-
2934	Same as BH32382914 (Bootheel Creek on Bootheel Rd off Old 8)	Bootheel creek/Secondary	Yes -Tier 2	1	1	1	-
8771	Same as GG05403011 (US 27north of SR 17)	Local canal	Yes - Tier 2	19	19	4	Period of data availability 2020 - 2023
G4SD0194	L-61W	FC1 canal, L-50/Primary canal	Yes - Tier 1	24	12	2	-
G4SD0193	Fenceline Drain @ Blue Head Ranch	Local canal	No	2	1	1	Nearby station is SC35382812
48561	RS23402811	Rainey slough canal/Secondary	Yes - Tier 2	7	7	6	-
G4SD0215	John Henry Slough at CR731	John Henry slough canal/Secondary	No	23	12	1	Nearby station is HS06402911

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
G4SD0217	L-61W at Old Lakeport Rd	L-61/Primary canal	No	-	-	-	Only dissolved oxygen and water temperature data are available for 2022 at this station. Nearby station is G4SD0194 (L-61-W)
G4SD0214	Gator Slough At US27	Local canal	No	22	11	1	Nearby station is GA09393011
G4SD0216	Gopher Gully At US27	Local canal	No	18	9	-	
G4SD0111	Rainey Slough at Farabee Rd	Local canal	No	-	-	-	Only dissolved oxygen and water temperature data are available for 2023 at this station.
CB-SITE-1	Cowbone Marsh Site 1	Fisheating Creek/Primary	No	17	9	9	-
CB-SITE-5	Cowbone Marsh Site 5	Fisheating Creek/Primary	No	19	10	10	-
L61W	Culvert Located W End Of L61 Canal Where It Meets L-50 Canal	L-61 to L-50 canal	Tier 1	8	8	2	-

Table 39. List of water quality stations in the Indian Prairie subwatershed

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
32900	C-41a @ SR70	C-41A canal/Primary-downstream of Lake Istokpoga	No	8	4	3	Same as G4SD0175
26010573	INDIAN PRAIRIE CANAL AT SR 70	Indian Prairie canal/Local	No	8	4	3	-
FISHCR0004FTM	Harney Pond Canal @ Intersection by SR 70	C-41 canal/Primary	No	8	4	3	Merge with G4SD0173
FISHCR0005FTM	Harney Pond Canal - Southernmost @ Turn	C-41 canal/Primary	No	8	4	3	Nearby station HP09383151
FISHCR0009FTM	Indian Prairie Canal @ Levee	C-40 canal/Primary	No	6	3	4	Nearby station is IP09383222
FISSCR0022FTM	L-49 @ Dyess Ditch Ramp Road	L-49/Primary	No	6	3	2	Nearby station is G4SD0190

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
HP10383112	Harney Pond Canal @ Durrance Rd.	C-41 canal/Primary	Yes - Tier 2	8	3	4	-
IP01383122	Indian Prairie Canal @ DC Bar Ranch Bridge	C-39A canal/Primary	Yes - Tier 2	8	4	4	-
SD13373111	C-41a @ Weir	C-41A canal/Primary	Yes - Tier 2	8	4	3	-
02273230	USGS Hydro/WQ Station on C41	C-41 canal/Primary	Tier 2	195	109	0	-
C40VMB	AUTOSAMPLER AND VELOCITY METER AT THE BRIGHTON RESERVATION A	C-40 canal/Primary	No	409	214	0	-
C41VMB	AUTOSAMPLER AND VELOCITY METER AT THE BRIGHTON RESERVATION A	C-40 canal/Primary	No	413	208	0	-
HP06393212	C41 levee PC25	C-41 canal/Primary	No	0	53	0	At Levee
HP06393232	S70 water control structure	C-41 canal/Primary	No	0	78	0	Same location as HP06393242
HP06393242	S70 water control structure up stream side	C-41 canal/Primary	Tier 2	0	75	0	-
HP09383151	C41 levee PC 43	C-41 canal/Primary	Yes - Tier 2	0	141	0	Same as 9533
HP10373114	S82 water control structure	C-41 canal/Primary	No	0	82	0	Same as 24090
HP11373132	Upstream of S-82	C-41 canal/Primary	Tier 2	0	75	0	same as HP10373114
HP15373112	S82 access road west side of canal	West side of C-41 canal	Tier 2	0	110	0	Same as 9536
HP16383123	C41 levee north of Brighton Reservation PC 40A	Local canal to C-41 canal on levee	No	0	79	0	-
HP22373112	S82 access road west side of canal	C-41 canal/Primary	Tier 2	0	119	0	Same as 9536, and HP15373112
HP22393211	C41 levee on flow to Brighton Reservation	C-41 canal/Primary	No	0	80	0	-
HP23373111	S82 access road east side of canal culvert south of S82	L-41 canal/Primary	Tier 2	0	36	0	same as 9542
HP24373013	North on County Road 29 0.9 mi. Collect sample from culvert	Local canal	Tier 2	0	85	0	Same as 24087- off of the Hathaway tree farm
HP25373013	North on County Road 29 1.3 mi. Collect sample in ditch	Local canal	Tier 2	0	203	0	Same as 24088
HP26373111	C41 levee 1.5 miles north of PC 48	C-41 canal/Primary	No	0	13	0	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
HP27373112	SE corner of Istokpoga Marsh Drainage District PC 50	Local canal	No	0	52	0	To C-41 canal
HP27383124	Hickory Branch Creek PC 35	Local canal	No	0	109	0	Same as 9545
HP34373124	culvert NE of SR 70 bridge PC 46/47	C-41 canal/Primary	Tier 2	0	56	0	Same as 9547
HP35373113	SR 70 levee northeast of C41 bridge PC48	C-41 canal/Primary	Tier 2	0	52	0	Same as 9548
HP36373013	County Road 29 at junction of Hwy 70 - Upstream	Local canal	Tier 2	0	93	0	Same as 24089
HP36383112	C41 levee PC 27	C-41 canal/Primary	Yes - Tier 2	0	44	0	-
IP09383222	CR 721 C40 levee NE S75 0.1 mile	Secondary canal	No	0	52	0	-
IP09383232	Upstream side of S-75	C-40 canal/Primary	Tier 2	0	75	0	-
IP09383242	Downstream side of S-75	C-40 canal/Primary	No	0	46	0	Nearby station is IP09383232
IP14383214	Near CR 721 bridge over Indian Prairie Canal at Project Culvert	C-40 canal/Primary	No	0	85	0	-
IP15383212	CR 721 toward Brighton south after the C40 bridge on levee	C-40 canal/Primary	No	0	55	0	-
IP24383214	SR 721 to Tucker Ridge Rd to Bowlegs Rd to C40 levee	C-40 canal/Primary	Tier 2	0	36	0	Same as 9715
IP29383313	Hwy 283 Brighton Reservation bridge over Indian Prairie Canal	C-40 canal/Primary	Yes - Tier 2	0	121	0	Same as 9716
L59W	CULVERT LOCATED AT THE WEST END OF L-59 CANAL NEAR S-72	L-59 canal to C-40 canal/Primary	Tier 1	199	104	102	Same as 11721
L60E	CULVERT AT THE EAST END OF L-60 CANAL NEAR S-72	L-60 canal to C-40 canal/Primary	Tier 1	178	92	89	Same as 11729
L60W	LULVERT LOCATED AT THE WEST END OF L-60 CANAL NEAR S-71	L-60 canal to C-41 canal/Primary	Tier 1	161	83	82	Same as 11731
L61E	CULVERT LOCATED AT E END OF L-61 NEAR S71 ON HARNEY POND CAN	L-61 canal/Primary	Tier 1	175	92	88	-
S127	AT S-127 AND RIM CANAL. SAMPLE TAKEN ON UPSTR AM SIDE	L-48 canal/Primary	Tier 1	207	106	98	Same as 17184
S129	AT S-129 AND RIM CANAL. SAMPLE TAKEN ON UPSTR AM SIDE	L-49 canal/Primary	Tier 1	191	104	96	Same as 17194

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
S131	AT PUMP STATION S-131 AND RIM CANAL UPSTREAM IDE OF PUMP ST	Pump station at S-131 canal/Primary	Tier 1	211	109	104	Same as 17227
S71	S-71 SPILLWAY ON CANAL C-41 AT LAKE OKEECHOBEE	Spillway on C-41 canal/Primary	Tier 1	693	399	197	-
S72	S-72 SPILLWAY ON CANAL C-40 AT LAKE OKEECHOBEE	Spillway on C-41 canal/Primary	Tier 1	481	291	118	-
SD10373111	PC 24	Local canal to C-41A canal	No	0	82	0	-
SD28373312	SR 70 west past Queen Bee Farms at guardrail	Secondary canal	Tier 2	0	75	0	Same as 18429
SD33373323	PC08	Local canal	No	0	40	0	Nearby station is SD35373313
SD33373333	PC07	Local canal	No	0	58	0	
SD34373313	PC05	Local canal	Tier 2	0	61	0	Nearby station is SD33373323
SD35373313	PC03	Local canal	No	0	21	0	Nearby station is SD34373313
SD33373314		Local canal	Tier 2	0	104	0	Same s 18432
17194	S129	L-49 canal/Primary	No	168	157	155	Same as S129
17227	S131	S-131 canal/Primary	No	171	161	161	Same as S131
4302	C38W	Secondary canal to Kissimmee River	Tier 1	127	115	111	Same as C38W
11721	L59W	L-59 canal to C-40 canal/Primary	No	100	93	92	Same as L59W
11729	L60E	L-60 canal to C-40 canal/Primary	No	94	93	92	Same as L60E
11720	L59E	Culvert at L-59 canal/Primary	Tier 1	130	123	122	Same as L59E
11733	L61E	Culvert at L-61 canal/Primary	No	74	70	70	Same as L-61E
30850	2273230	C-41 canal/Primary	No	78	78	50	02273230
17184	S127	L-48 canal/Primary	No	169	155	153	Same as S127
18291	S84	C-41A canal/Primary	Tier 1	196	180	180	Same as S-84

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
24085	IP09383232	C-40 canal/Primary	No	58	82	55	Same as IP09383232
24088	HP25373013	Local canal	No	85	121	4	Same as HP25373013
24086	HP06393242	C-41 canal/Primary	No	60	85	59	Same as HP06393232
24090	HP11373132	C-41 canal/Primary	No	29	41	29	Same as HP10373114
11731	L60W	L-60 canal to C-41 canal/Primary	No	81	81	80	Same as L60W
G4SD0174	Indian Prairie Canal @ SR 70	Indian Prairie canal	No	51	27	16	-
G4SD0175	C-41 A @ SR 70	C-41A canal/Primary	No	36	21	12	Same as 32900
G4SD0173	Harney Pond Canal @ SR 70	C-41 canal/Primary	No	44	21	14	-
9545	HP27383124	Local canal	Yes - Tier 2	74	73	73	Same as HP27383124
G4SD0190	L-49	L-49 canal/Primary	No	25	15	7	-
9533	HP09383151	C-41 canal/Primary	No	56	56	56	Same as HP09383151
18429	SD28373312	Secondary canal	No	37	40	27	Same as SD28373312
9715	IP24383214	C-40 canal/Primary	No	9	10	9	Same as IP24383214
18425	SD13373111	C-41A canal/Primary	No	63	63	63	-
9546	HP28383112	C-41 canal/Primary	Yes - Tier 2	60	60	60	Same as HP28383112
9539	HP21383121	C-41 canal/Primary	Yes - Tier 2	21	21	21	HP21383121
9535	HP10383112	C-41 canal/Primary	No	41	41	41	Same as HP10383112
24087	HP24373013	Local canal	No	29	30	1	Same as HP24373013
9716	IP29383313	C-40 canal/Primary	No	33	33	32	Same as IP29383313
9536	HP15373112	West side of C-41 canal	No	57	56	57	Same as HP15373112, and HP22373112
18432	SD33373314	Local canal	No	18	20	17	Same as SD33373314
9707	IP01383122	C-39A canal/Primary	No	63	63	62	Same as IP01383122
9540	HP22373112	C-41 canal/Primary	No	54	54	54	-
9548	HP35373113	C-41 canal/Primary	No	3	3	3	Same as HP35373113
49826	HP27383134	C-41 canal/Primary	No	23	23	23	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
24089	HP36373013	Local canal	No	2	2	1	Same as HP36373013
9542	HP23373111	L-41 canal/Primary	No	4	4	2	Same as HP23373111
52260	HP24373023	Local canal	No	17	17	11	-
9547	HP34373124	C-41 canal/Primary	No	1	1	1	Same as HP34373124
7955	G208	C-40 canal/Primary	Tier 1	2	91	0	Same as G208
7954	G207	C-40 canal/Primary	Tier 1	2	97	0	Same as G207
C41H78	AUTOSAMPLER AND VELOCITY M ON C41 CANAL, .5M S OF SR78 BRDG	C-41 canal/Primary	No	983	0	201	-
29653	C41H78	C-41 canal/Primary	No	214	292	191	-
18207	S72	C-40 canal/Primary	No	154	494	141	Same as S72

Table 40. List of water quality stations in the Taylor Creek/Nubbin Slough subwatershed

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
3199A-C	3199A - Turkey Slough - 500m S of B Site on 98	Local canal	No	4	2	0	Nearby stations 20219, TS26363411, 26010489
2273630	USGS Hydro/WQ Station on Pop Ash Slough	Popash slough/Primary canal	No	98	55	0	Nearby station G1SE0017
2274005	USGS Hydro/WQ Station on Otter Creek	Otter Creek/Local canal	No	106	56	0	Nearby stations 19903, TCNS 209
2274010	USGS Hydro/WQ Station on Taylor Creek @ Cypress	Taylor creek/Primary	No	152	78	0	Nearby stations TCNS 213,19907
2274325	USGS Hydro/WQ Station on Taylor Creek @ Grassy	Taylor Creek/Primary	No	34	19	0	-
2274490	USGS Hydro/WQ Station on Williamson Ditch	Williamson Ditch/Secondary	No	103	56	0	-
2274505	USGS Hydro/WQ Station on Wolf Creek	L-63N canal/Secondary	No	100	55	0	Nearby stations TCNS 217, 19911
2275197	USGS Hydro/WQ Station on Mosquito Creek	Mosquito creek/Primary	Tier 2	244	142	0	30862, Nearby stations 26010408, G1SE0014
2275625	USGS Hydro/WQ Station on Nubbin Slough	Nubbin slough/Primary	No	36	20	0	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
2275631	USGS Hydro/WQ Station on L63 Canal	L-65S canal/Primary	No	22	12	0	Nearby station G1SE0022
CH12363424	Chandler Hammock Slough at Candler Ranch	Chandler Hammock Slough/Secondary	No	0	16	0	-
CH15363412	US 98 Dixie Ranch access road Chandler Hammock Slough	Local canal	No	0	24	0	-
HR11383612	Berman Rd at Henry Creek culverts	Henry creek/Primary	No	0	5	0	Nearby station G1SE0030
IN12373514	Smith property; on flow from Larson Barn 5	Land runoff/Local canal	No	0	26	0	-
IN13373512	WOD Hitchcock A1 site; discharge ditch into L-63N canal	Land runoff/Local canal	No	0	27	0	same as 9670
IN13373531	SR 70 east of Okeechobee City at L63 Canal bridge	L-63N canal/Secondary	No	0	12	0	Nearby station G1SE0023
IOC	Interim Outfall Canal	Interim canal-Cell4	No	149	168	3	35203-Lake Side Ranch Treatment Area
KR04373413	SR 70 to CR 599 Peleaz Ranch	Local canal	No	0	20	0	-
KR16373414	SR 70 culvert on highway	Local canal	Tier 2	0	133	0	Same as 10379
KR17373513	SR70 - 0.50 mile west of Highway 98	L-62 canal/Primary	Tier 2	0	138	0	Same as 31148
KR18373413	SR 70 Platts Bluff Rd NW 141st Street	Local canal	No	0	79	0	-
KR18373512	NW 8th St 0.50 mile N of SR70	Local canal	No	0	29	0	-
KREA 20	SANDFLY GULLY @ HWY 98 N. ONCOMING TO FLYING G DAIRY	Local canal	Tier 2	50	41	8	Same as 10518
KREA 25	S.E. OF FLYING G DAIRY AT HWY 98, TURKEY SLOUGH	Turkey Slough/Secondary	Tier 2	42	26	10	Same as 10523
KREA 28	POPASH SLOUGH AT SCL RR BRIDGE OFF MITCHELL RAOD	Turkey Slough/Secondary	Tier 2	78	61	23	Same as 10526
KREA 30A	POPASH SLOUGH AT OUTFALL TO L-62 CANAL	Popash Slough to L-62 canal/Primary	Tier 2	39	24	10	Same as 10529
LB29353513	CR 68 to Rucks Rd TCNS 265	Local canal	Tier 2	0	124	0	Same as 11868
LC13383614	CR 714 at 90 degree curve Martin County ditch	Local canal	No	0	24	0	Upstream station BG1SE00168
LC16383713	CR 714 at 90 degree curve Martin County ditch	Local canal	No	0	31	0	Nearby station LC16383714

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
LC16383714	CR 714 3 miles east of SR 710 at railroad tracks	Local canal	No	0	5	0	Nearby station LC16383713
LM29373514	Durrance Road	Local canal	Tier 2	0	151	0	Same as 12266
MS05373613	SR 70 Larson Dairy TCNS 263	Local canal	Tier 2	0	67	0	Same as 13965
MS08373611	SR 70 Larson Dairy TCNS 262 Foreman's Lane	Local canal	Tier 2	0	92	0	Same as 13967
MS08373614	SR 70 Larson Dairy TCNS 277	Local canal	Tier 2	0	46	0	Same as 49180
MY33383712	Myrtle Slough at former Mattson/Pilgrim Dairy	Myrtle Slough/ Local canal	No	0	14	0	-
OT29353514	CR 68 Rucks Dairy 1 TCNS 243	Local canal	Tier 2	0	73	0	Same as 15285
OT32353511	US 441 to NE 144th Avenue Rucks Dairy 3 TCNS 210	Local canal	Tier 2	0	74	0	Same as 15286
OT34353513	US 441 to Potter Rd Rucks Dairy 2 TCNS 211	Local canal	Tier 2	0	98	0	Same as 15287
S133	AT PUMP STATION S133 ON HERBERT HOOVER DIKE O UPSTREAM SIDE	LD-4 canal/Primary	Tier 1	195	99	95	Same as 17239
S135	AT PUMP STATION S135 ON L-47; UPSTREAM SIDE O PUMP STATION	Lake Okeechobee canal/Primary	Tier 1	199	111	97	Same as 17246
S154	AUTOSAMPLER AT S154, L-62 OUTFALL AT C-38	L-62 canal/Primary	Tier 1	374	282	188	Same as 17339
S154C	GATED STRUCTURE ON THE EAST SIDE OF C-38 NEXT TO S-154	RIO2 canal/Secondary	Tier 1	275	146	140	Same as 17340
S385	S385 PUMP STATION AUTOSAMPLER/GRAB	Nubbin slough/Primary	No	4	53	18	-
S387A	S387A DISCHARGE GATE AUTOSAMPLER/GRAB	Outflow of Nubbin Slough STA to Nubbin Slough canal	No	4	46	12	Nearby station 28010452
S387B	S387B DISCHARGE GATE AUTOSAMPLER/GRAB	Outflow of Nubbin Slough STA to Nubbin Slough canal	No	4	46	12	-
S387C	S387C DISCHARGE GATE AUTOSAMPLER/GRAB	Outflow of Nubbin Slough STA to Nubbin Slough canal	No	4	46	12	-
S390	S390	Taylor creek canal inflow to Taylor Creek STA	No	429	482	246	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
S392	S392	Taylor Creek STA outflow to Taylor Creek canal	No	383	452	230	24334, Taylor Creek STA outflow to Taylor Creek canal
S650	Pump station S650 Upstream Autosampler	L-64 canal/Primary	No	173	186	4	35206-Pump station from L-64 canal to Lake Side Ranch STA
TC03373511	US 441 N to Cemetery Road at Taylor Creek bridge	Taylor Creek canal/Primary	Tier 2	0	36	0	Same as 19761, Nearby station G1SE0024
TC09373513	Okeechobee City 9th Avenue bridge over City Limit Ditch	Local canal	Tier 2	0	146	0	Same as 19765
TC27353413	CR 68 three miles west of Potter Road	Local canal	Tier 2	0	33	0	Same as 19773
TCNS 201	NW TAYLOR CREEK AT HWY 68 BRIDGE & USGSGAUGE STATION	Taylor Creek canal/Primary	Tier 2	69	49	19	Same as 19895
TCNS 204	LITTLE BIMINI AT POTTER RD.& RAULERSONS	Local canal	Tier 2	140	95	32	Same as 19898
TCNS 207	OTTER CREEK AT STRUCTURE S-13B AND W WRUCKS	Local canal	Tier 2	89	83	17	Same as 19901
TCNS 209	OTTER CREEK AT S-13 AND POTTER ROAD	Otter Creek/Local canal	Tier 2	118	71	26	Nearby stations 19903, 02274005
TCNS 212	EAST OTTER CREEK AT HWY. 441 N.	Local canal	No	40	29	15	-
TCNS 213	TAYLOR CREEK HEADWATER AT S-2 ON G-BAR-E RANCH	Taylor creek/Primary	Tier 2	213	142	54	19907, Nearby station 0227410
TCNS 214	WILLIAMSON DITCH BELOW BOYS SCHOOL AT USGS GAUGE STATION	Williamson Ditch/Secondary	Tier 2	140	103	43	Same as19908
TCNS 217	WOLFF CREEK AT SHEET WEIR OFF CEMETARY ROAD	L-63N canal/Secondary	Tier 2	239	170	60	Same as 19911, Nearby station 02274505
TCNS 220	MOSQUITO CREEK BELOW LARSON DAIRIES AT HWY. 70	Mosquito creek/Primary	Tier 2	128	89	31	Same as 19914, Nearby station G1SE0006
TCNS 222	MOSQUITO CREEK BELLO HWY. 710 AND L63-NCANAL	Mosquito creek/Primary	Tier 2	197	139	47	Same as 19916
TCNS 228	NUBBIN SLOUGH BELOW HWY. 710 AT L63-N CANAL	Nubbin slough/Primary	Tier 2	50	34	11	Same as 19922
TCNS 230	HENRY CREEK BELOW HWY. 710 AT L-63-N CANAL	Henry creek/Primary	Tier 2	33	22	5	Same as 19924, Nearby station 26010402

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
TCNS 233	LETTUCE CREEK BELOW HWY. 710 AT L63-N CANAL	Lettuce Creek/Primary	Tier 2	80	53	16	Same as 19927, Nearby station G1SE0015
TCNS 249	NUBBIN SLOUGH AT BERMAN ROAD	Nubbin slough/Primary	Tier 2	38	58	13	Nearby station 19939
TS26363411	US 98 near 80th Street	Local canal	Tier 2	0	83	0	20219, Nearby stations 3199A-C, 26010489
TS36363411	US 98 Milking R Dairy entrance KREA 49	Local canal	Tier 2	0	59	0	Nearby station 20220
WD02363514	US 441 N to NE 131st Lane to NE 26th Avenue	Local canal	No	0	13	0	-
WD10363512	US 441 N to NE 120th Street	Local canal	No	0	11	0	-
26010402	HENRY CREEK @SR 710	Henry creek/Primary	No	9	5	5	Nearby station TCNS 230, 19924
26010408	MOSQUITO CREEK @SR 710	Mosquito creek/Primary	No	28	15	15	Nearby station 2275197, 30862
26010489	Turkey Slough @ SR 98.	Local canal	No	10	5	5	Nearby stations 20219, TS26363411, 3199A-C
26013013	Otter Creek at SR 68 / 14C	Otter Creek/Local canal	No	10	6	6	Nearby station G1SE0003
26013015	L63 at SE 59th Blvd / 6B	L-63N canal/Primary	No	10	5	5	-
28010452	Site in Nubbin Slough	Nubbin Slough STA Outflow canal	No	8	4	4	Nearby station S387A
BG1SE0016B	Martin Hwy Canal 100yds east of Melear Dairy Rd	Local canal	No	10	5	5	LC13383614
G1SE0002	Henry Creek @SR 710	Henry creek/Primary	No	46	23	23	Nearby stations TCNS 230, 19924
G1SE0005	L63 at SE 59th Blvd/6B	L-63N canal/Primary	No	12	6	6	-
G1SE0014	Mosquito Creek @ SR 710	Mosquito creek/Primary	No	22	11	10	Nearby station 02275197, 30862,26010408
G1SE0015	LETTUCE CREEK @ HIGHWAY SR 710	Lettuce Creek/Primary	No	46	23	13	Nearby station TCNS 233, 19927
G1SE0017	POPASH SLOUGH @ SR70	Popash slough/Primary canal	No	34	18	18	Nearby station 02273630
G4SE0089	L-62 300m upstream of S-154C	L-62 canal/Primary	No	4	2	1	Nearby station G1SE0028
24334	S392	Taylor Creek STA outflow to Taylor Creek canal	No	161	562	160	Same as S392

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
24332	S390	Taylor creek canal inflow to Taylor Creek STA	No	164	607	162	Same as S390
KR05373414		Local canal	No	0	26	0	
17340	S154C	RIO2 canal/Secondary	No	134	117	118	Same as S154C
17239	S133	LD-4 canal/Primary	No	179	161	160	Same as S133
17246	S135	Lake Okeechobee canal/Primary	No	157	144	144	Same a S135
17339	S154	L-62 canal/Primary	No	161	210	139	Same as S154
30862	2275197	Mosquito creek/Primary	No	87	88	52	2275197, Nearby station 26010408, G1SE0014
19907	TCNS 213		No	98	98	71	TCNS 213, Nearby station 02274010
35206	S650	L-64 canal/Primary	No	137	553	0	S650-Pump station from L-64 canal to Lake Side Ranch STA
35203	IOC	Interim canal-Cell4	No	19	38	0	IOC-N, Lake side ranch STA
19911	TCNS 217	L-63N canal/Secondary	No	86	86	55	TCNS 217, Nearby station 02274505
19914	TCNS 220	Mosquito creek/Primary	No	61	61	38	Same as TCNS 220
19916	TCNS 222	Mosquito creek/Primary	No	108	108	76	Same as TCNS 222
19908	TCNS 214	Williamson Ditch/Secondary	No	103	103	78	Same as TCNS 214
19924	TCNS 230	Henry creek/Primary	No	15	15	8	TCNS 230, Nearby station G1SE0002
19939	TCNS 249	Nubbin slough/Primary	No	32	32	4	Same as TCNS 249
19898	TCNS 204	Local canal	No	54	54	35	Same as TCNS 204
19901	TCNS 207	Local canal	No	55	55	6	Same as TCNS 207
19927	TCNS 233	Lettuce Creek/Primary	No	37	37	27	TCNS 233, Nearby station G1SE0015
19761	TC03373511	Taylor Creek canal/Primary	No	23	52	23	TC03373511, Nearby station G1SE0024

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
10518	KREA 20	Local canal	Tier 2	45	45	19	Same as KREA 20
19765	TC09373513	Local canal	No	81	95	54	Same as TC09373513
20220	TS36363411	Local canal	Tier 2	10	16	7	Same as TS36363411
10523	KREA 25	Turkey Slough/Secondary	No	15	15	2	Same as KREA 25
19773	TC27353413	Local canal	No	18	39	14	Same as TC27353413
10526	KREA 28	Turkey Slough/Secondary	Tier 2	14	14	0	Same as KREA 28
31148	KR17373513	L-62 canal/Primary	Tier 2	63	86	27	Same as KR17373513
12266	LM29373514	Local canal	No	82	83	61	Same as LM29373514
10529	KREA 30A	Popash Slough to L-62 canal/Primary	Tier 2	14	14	8	Same as KREA 30A
19922	TCNS 228	Nubbin slough/Primary	No	16	15	10	Same as TCNS 228
19903	TCNS 209		No	44	44	25	TCNS 209, nearby station 02274005
19895	TCNS 201	Taylor Creek canal/Primary	No	64	64	44	Same as TCNS 201
G1SE0003	Otter Creek @ 68	Otter Creek/Local canal	No	0	0	0	Nearby station 26013013
G1SE0001	Taylor Creek @ 441	Taylor Creek canal/Primary	No	54	27	24	-
G1SE0006	Mosquito Creek @ 70	Mosquito creek/Primary	No	0	1	1	Nearby stations TCNS 220, 19914
G1SE0022	L-63 canal @ SE 86th Blvd.	L-65S canal/Primary	No	44	22	21	Nearby station 02275631
G1SE0028	L-62 upstream of S-154C	L-62 canal/Primary	No	32	16	16	Nearby station G1SE0028
G1SE0023	L-63N canal @ SR 70	L-63N canal/Secondary	No	37	19	19	Nearby station IN13373531
G1SE0029	L-63 @ SE 59th Blvd.	L-63N canal/Primary	No	36	18	17	Nearby stations G1SE0005,26013015
G1SE0024	Taylor Creek @ 39th St.	Taylor Creek canal/Primary	No	56	28	25	Nearby station TC03373511,19761
G1SE0026	Lemkin Creek @ 78	Lemkin Creek @ Eagle Bay	No	63	34	25	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
G1SE0027	Popash Slough @ 67th Dr.	L-62 canal/Primary	No	36	18	18	-
G1SE0025	Taylor Creek @ 98	Taylor Creek to lake Okeechobee	No	44	22	22	-
15285	OT29353514	Local canal	No	8	9	7	Same as OT29353514
15286	OT32353511	Local canal	No	29	30	15	Same as OT32353511
13965	MS05373613	Local canal	No	15	15	4	Same as MS05373613
10379	KR16373414	Local canal	Tier 2	35	38	27	Same as KR16373414
11868	LB29353513	Local canal	No	35	38	16	Same as LB29353513
15287	OT34353513		No	30	33	24	Same as OT34353513
10384	KR20373413		Tier 2	14	15	2	Same as KR20373413
13967	MS08373611	Local canal	No	16	16	5	Same as MS08373611
20219	TS26363411	Local canal	Tier 2	5	5	5	TS26363411, Nearby stations 26010489, 3199A-C
49180	MS08373624		No	14	19	13	MS08373624
G1SE0030	Henry Creek @ SE 128th Ave	Henry creek/Primary	No	2	1	1	Nearby station HR11383612
G1SE0031	Nubbin Slough 1.4 miles upstream of 710	Nubbin slough/Primary	No	0	0	0	Only DO and water temperature
9670	IN13373512	Local canal	No	6	6	0	Same as IN13373512
S191	S-191 SPILLWAY ON CANAL C-59 AT LAKE OKEECHOBEE	C-59 canal AT LAKE OKEECHOBEE	Tier 1	394	312	202	-

Table 41. List of water quality stations in the Lake Istokpoga subwatershed

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
APAFRTMDL12	Arbuckle Marsh South	Local canal	No	27	13	0	-
APAFRTMDL2	Willingham Creek Bridge	Local canal	No	140	73	0	-
APAFRTMDL3	Rim Canal at LF 33	Local canal	No	24	12	0	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
APAFRTMDL5	Morgan Hole Creek	Morgan Hole Creek/Primary	No	143	74	0	Nearby station G4SD0199
APAFRTMDL6	Tomlin Gulley	Local canal	No	132	71	0	-
26011019	Livingston Creek @ Ruck's Dairy Road	Livington creek/Primary	No	16	8	6	Nearby stations RD08322913,16557, 274230948126468, LIVINGSTON CRK1
26010511	ARBUCKLE CR US 98 BR N L ISTOKPO	ARBUCKLE creek/Primary	No	2	1	1	Nearby stations 2270500, 30854, G4SE0150
26010519	ARBUCKLE BNCH ARB CR RD BR 5.0 M	Arbuckle branch/Secondary	No	20	10	10	Nearby stations 1858, AB27343014, G4SD0172, G4SE0149
26010653FTM	EAST BRANCH OF UNNAMED CREEK AT SR70	Local canal	No	2	1	1	Nearby stations 716777, PL01382911,16236, G4SD0213
26010656FTM	LAKE PLACID TRIBUTARY AT PLACID VIEW DRIVE	Tributary	No	6	3	3	Nearby station is 716769
26010710FTM	GRASSY CREEK SITE 1 ON LAKE APTHORPE RD	Local Canal	No	2	1	1	Nearby stations are G4SD0184, LP19363012
G4SD0107	Bonnet Cr. @ Thomas Property	Bonnet creek/Local canal	No	32	16	7	Nearby stations BN03332911, KISSRV0067FTM
JC16352911	Jackson Creek @ Dam	Jackson Creek/Primary	No	6	3	3	Nearby stations G4SD0204, G4SE0151
KISSRV0012FTM	LWO @ SR 66	Wolf Creek/Primary	No	32	16	16	Downstream of Wolf Lake
KISSRV0053FTM	Placid June Canal @ end of Lake Groves Rd	Local canal	No	22	11	11	-
KISSRV0067FTM	Bonnet Creek @ CR 64	Bonnet creek/Local canal	No	4	1	2	Nearby stations G4SD0107, BN03332911, 3049
LP19363012	Grassy Creek @ Lake Athorpe Dr.	Local Canal	No	8	4	4	Nearby stations are G4SD0184, 26010710FTM
HIG-AR-CREEK-1	HIG-AR-CREEK-1	Tributary/Dry detention pond	No	84	84	0	-
HIG-AR-CREEK-2	HIG-AR-CREEK-2	Tributary	No	81	81	0	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
HIG-AR-CREEK-3	HIG-AR-CREEK-3	Tributary	No	83	83	0	-
HIG-CA-CREEK-1	HIG-CA-CREEK-1	Local canal	No	141	142	0	-
HIG-CA-CREEK-2	HIG-CA-CREEK-2	Local canal	No	141	142	0	-
HIG-CA-CREEK-3	HIG-CA-CREEK-3	Local canal	No	120	120	0	-
MON-CU-CUDJOE-9	MON-CU-CUDJOE-9	Local canal/Estuary	No	58	58	0	-
LIVINGSTON CRK1	Livingston Cr. AT RUCKS DAIRY RD AT BRIDGE. Old name Reedy1	Livington creek/Primary	No	139	70	61	Nearby stations RD08322913,16557,27423 0948126468,26011019
2270500	USGS Hydro/WQ Station on Arbuckle	Arbuckle Creek/Primary	Tier 2	375	284	0	Nearby stations 26010511, G4SE0150, same as 30854
2273198	USGS Hydro/WQ Station on C41A @ S68 Structure	C-41A/Primary - Outfall of lake Istokpoga	Tier 2	270	208	0	Same as 30853-Downstream of Lake Istokpoga. More data from DBHYDRO
AB27343014	Arbuckle Branch at Arbuckle Creek Rd.	Arbuckle branch/Secondary	Tier 2	0	174	0	Same as 1858, nearby stations are G4SE0149, 26010519 and G4SD0172
AR05353012	Gulf Kist Sod Retention Pond Discharge	Local canal	No	0	33	0	From STAR FARMS AGI
AR06333013	Arbuckle Creek at east end of Arbuckle Rd	Arbuckle Creek/Primary	Tier 2	0	193	0	Same as 2069
AR18343012	Arbuckle Creek at Arbuckle Creek Rd.	Arbuckle Creek/Primary	Tier 2	0	155	0	Same as 2070
AR21343013	Wildcat Slough at Arbuckle Creek Rd.	Wildcat Branch/Primary	Tier 2	0	105	0	Same as 2071
AR23332914	Un-named creek on Arbuckle Creek Properties	Local canal	No	0	24	0	-
BN03332911	Bonnet Creek at Hwy 64 Bridge	Bonnet creek/Local canal	Tier 2	0	202	0	Same as 3049, Nearby stations G4SD0107, KISSRV0067FTM
BN08332912	Bonnet Creek on Old Bombing Range Rd.	Bonnet creek/Local canal	Tier 2	0	161	0	same as 3050, nearby station G4SD0211
CA11342914	Carter Creek at Arbuckle Creek Rd.	Carter Creek/Secondary	No	0	21	0	At USGS 02270000
LI02362913	Josephine Creek @ Hwy. 27	Josephine Creek/Primary	No	0	66	0	Nearby station is HAB-SD-068

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
LI02362923	Josephine Creek at CR 17 bridge	Josephine Creek/Primary	Tier 2	89	246	79	At USGS 02271500
LV14322813	Livingston Creek at Hwy C-627	Livington creek/Primary-downstream of Lake Livingston	Tier 2	0	98	0	Same as 12791, Nearby stations are G4CE0210, G4SW0104
PC15332911	Palmetto Creek at north end of Roberts Rd.	Palmetto Creek/Local canal	No	0	79	0	-
PL01382911	Posey Dairy East	Local canal	Tier 2	0	168	0	Nearby station 716777, 16236, G4SD0213,26010653FTM
RD01322813	Lake Reedy outfall at Lake Reedy Rd.	Reedy Creek/Primary-Outfall of Reedy Lake	Tier 2	0	107	0	Same as 16556, nearby station is G4CE0224
RD08322913	Reedy Creek at Rucks Dairy Rd.	Livington Creek/Primary	Tier 2	0	207	0	same as 16557, nearby stations are 26011019, Livingston CRK1, 274230948126468
716755	CATFISH CREEK AT WEIR DOWNSTREAM	Local canal	No	10	10	10	Nearby station is 910551
716767	PLACID VIEW DRIVE NORTH DOWNSTREAM	Local canal	No	13	14	14	-
716769	PLACID VIEW DRIVE MIDDLE DOWNSTREAM	Tributary	No	16	17	17	Nearby station26010656FTM
716777	SR 70 EAST OF PLACID VIEW DRIVE DOWNSTREAM	Local canal	No	16	17	16	Nearby stations 16236, PL01382911, 26010653FTM, G4SD0213
274230948126468	TP522 - Livingston Creek	Livington Creek/Primary	No	2	1	0	Nearby stations 26011019, Livingston CRK1, 16557, RD08322913
G4SE0149	Arbuckle Branch at Arbuckle Creek Rd.	Arbuckle branch/Secondary	No	14	6	0	Nearby station26010519 and G4SD0172, 1858, AB27343014
30853	2273198	C-41A/Primary - Outfall of lake Istokpoga	Tier 2	650	741	188	same as 2273198
30854	2270500	Arbuckle Creek/Primary	Tier 2	750	840	197	Nearby station 26010511, same as 2270500,G4SE0150
34301	LI02362923	Josephine Creek/Primary	Tier 2	89	129	79	Same as IL02362923

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
2070	AR18343012	Arbuckle Creek/Primary	No	57	91	55	Same as AR18343012
2069	AR06333013	Arbuckle Creek/Primary	No	89	128	80	Same as AR06333013
16557	RD08322913	Livington Creek/Primary	No	95	137	82	same as RD08322913, Nearby stations 26011019, Livingston CRK1, 274230948126468
16556	RD01322813	Reedy Creek/Primary	No	94	118	90	Same as RD01322813, Nearby station G4CE0224
1858	AB27343014	Arbuckle branch/Secondary	No	63	96	29	Same as AB27343014, Nearby stations 26010519 and G4SD0172, G4SE0149
3049	BN03332911	Bonnet creek/Local canal	No	87	130	68	Same as BN03332911, Nearby station is KISSRV0067FTM, G4SD0107
12791	LV14322813	Livington creek/Primary-downstream of Lake Livingston	Tier 2	47	68	47	Same as LV14322813, Nearby stations are G4CE0210, G4SW0104
G4SD0165	GRASSY CREEK @ CR 621 E	Local Canal	No	24	12	11	Downstream of local lake
910544	DAFFODIL STREET CANAL INFLOW	Local canal	No	10	5	5	
910551	CATFISH CREEK WEIR UPSTREAM	Local canal	No	6	3	3	Nearby station is 716755
G4SD0172	Arbuckle Branch	Arbuckle branch/Secondary	No	11	6	3	Nearby station 26010519, AB27343014 and B27343014, G4SE0149
G4SW0104	Livingston Creek @ Old Avon Park Rd	Livington creek/Primary-downstream of Lake Livingston	No	18	9	4	Nearby stations LV14322813, G4CE0210, 12791
16236	PL01382911	Local canal	No	55	57	3	Nearby stations 716777, PL01382911, G4SD0213, 26010653FTM
10178	JO33352914	Josephine Creek/Primary	Tier 2	84	84	84	Downstream of Lake Josephine
2071	AR21343013	Wildcat Branch/Primary	No	17	17	4	Same as AR21343013

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
12051	JO16362914	Jack Creek/Secondary canal	Tier 2	23	23	23	-
3050	BN08332912	Bonnet creek/Local canal	No	47	46	46	same as BN08332912, Nearby station G4SD0211
G4SD0184	Grassy Creek	Local canal	No	18	9	4	Nearby stations are 26010710FTM, LP19363012
G4CE0211	Livingston Creek 2.6km E of Old Avon Park Rd.	Bonnet creek/Local canal	No	2	1	1	Nearby stations BN08332912 and 3050
G4SD0210	Arbuckle Creek Near Branch	Arbuckle Creek/Primary	No	22	11	6	-
G4SD0209	Placid June Cnl @ Lke Grvs Rd	Local canal	No	15	8	5	-
G4SD0204	Jackson Creek @ Weir	Jackson Creek/Primary	No	8	4	4	Nearby station JC16352911, G4SE0151
G4CE0210	Livingston Creek @ Old Avon Park Rd	Livington creek/Primary-downstream of Lake Livingston	No	14	7	5	Nearby stations LV14322813, G4SW01104, 12791
G4SD0199	Morgan Hole 2	Morgan Hole Creek/Primary	No	0	0	0	Nearby station APAFRTMDL5 (Total of three samples: DO, Temp, TKN)
G4CE0224	Reedy Lake Basin @ Lake Reedy Blvd- Bridge	Reedy Creek/Primary	No	21	11	1	Nearby station are 16556 and RD01322813
G4SD0213	LakePlacidOutletAtSR70W	Local canal	No	20	10	1	Nearby station 716777, PL01382911, 16236, 26010653FTM
HAB-SD-068	Josephine Creek - SR27	Josephine Creek/Primary	No	2	1	1	Nearby station is LI2362913
G4SE0151	Jackson Creek north of SR 66	Jackson Creek/Primary	No	6	3	0	Nearby station JC16352911, G4SE0204
G4SE0150	Arbuckle Creek at US Hwy 98	Arbuckle Creek/Primary	No	12	6	0	Nearby stations 26010511, 30854, 2270500
3503	C-41a @ Lake Istokpoga Weir @S68 structure	Primary canal	Tier 1	8	4	2	Same as S68

Table 42. List of water quality stations in the East Lake Okeechobee subwatershed

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
43479	Z6-CN-7024 L-8 CANAL	L-8 canal/Primary	No	2	1	0	Nearby station CL8-3
C44SC14	C44 Canal, secondary canal 14 at Citrus Blvd	Local canal	No	23	40	0	Nearby station 39857
C44SC4	C44 Canal, secondary canal 4 at Citrus Blvd	Local canal	No	26	44	3	-
C44SC6	C44 Canal, secondary canal 6 at Citrus Blvd	Local canal	No	17	27	0	-
CULV10A	INTERSECTION LEVEE-8 AND U.S.HWY.441 AT SAND CUT P.B.COUNT	L-8 canal/Primary	No	417	213	201	Nearby station 5147
L8.M CNL	L8.M CNL	L-8 canal/Primary	No	74	43	43	Nearby station 32008014
S308C	AT INTERSECTION OF HEBET HOOVER DIKE AND THE ST. LUCIE RI	C-44 canal to lake O	Tier 1	388	197	199	-
S5AE	WESTERN POINT OF C-51 WHERE L-8 INTERSECTS	C-51 canal/Primary	No	243	129	125	-
S5AS	WHERE WCA1 INTERSECTS L-8 NORTH END OF L-40	L-8 canal/Primary	No	146	73	72	-
SW3	At junction of L8 canal and Seminole Pratt-Whitney Road	M canal/Primary	No	118	59	0	Nearby station SEHAB0047
26010492	S-153 Basin Unnamed Creek @710	Local canal	No	10	5	5	Nearby station G4SE0137
32008011	M-CAN @ ROYAL PALM BCH BLV	M canal/Primary	No	8	4	3	Nearby station SEHAB0068
32008012	M CANAL @ AVACADO RD	M canal/Primary	No	8	4	4	Nearby station 59785
32008014	M-Can Mi. North 50th@Station	L-8 canal/Primary	No	8	4	4	L8.M CNL
26010492B	S-153 Basin Unnamed Creek @ 710	Local canal	No	6	3	3	Nearby station G4SE0137
G3SE0017	L-8 @ G-541	L-8 canal/Primary	No	20	10	10	-
C44-1	Mar-C44-1	C-44 canal/Primary	No	26	13	0	-
C44-2	Mar-C44-2	C-44 canal/Primary	No	26	13	0	-
C44-3	Mar-C44-3	C-44 canal/Primary	No	24	12	0	Before CAULKINS Farm
CL8-1	WPB-CL8-1	L-8 canal/Primary	No	24	12	0	
CL8-2	WPB-CL8-2	L-8 canal/Primary	No	24	12	0	Nearby station SEHAB0048
CL8-3	WPB-CL8-3	L-8 canal/Primary	No	24	12	0	Nearby station 43479

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
5147	CULV10A	-	Tier 2	187	164	162	CULV10A- Biweekly sampling only if flowing; otherwise monthly
G1SE0050	L-65 upstream of S-153	L-65 Canal/Primary	No	42	21	18	17331(S153)- Downstream station is S-153
49043	C51W1.8TN9	Local canal	No	16	16	15	-
49022	C44SC19	C-44 canal/Primary	Tier 2	55	55	55	Same as C44SC19
48980	C51W1.8TN4	Local canal	No	25	25	25	-
49021	C44SC5	Local canal	Tier 2	40	40	39	Same as C44SC5
49023	C44SC23	To C-44 canal/Primary	Tier 2	22	22	21	Same as C44SC23
39857	C44SC14	Local canal	Tier 2	37	37	37	Same as C44SC14
49020	C44SC2	Local canal	Tier 2	26	26	26	Same as C44SC2
49024	C44SC24	Local canal	Tier 2	32	32	31	Same as C44SC24
49040	C51W1.8TN6	IIID Main canal south/local canal	No	29	29	29	-
49038	C51W1.8N10	IIID Main canal/local canal	No	13	13	13	-
17331	S153	L-65 canal to C-44 canal	Tier 2	25	25	25	Same as S153
G4SE0137	S-153 Unnamed creek @ 710	Local canal	No	18	9	7	Nearby stations 26010492, 26010492B
SEHAB0048	L-8 tieback canal	L-8 canal/Primary	No	4	2	2	Nearby station CL8-1
SEHAB0047	M-canal - Seminole Pratt Whitney Rd.	M canal/Primary	No	2	1	1	Nearby station SW3
SEHAB0046	C44 canal - Timer Powers Park	C-44 canal/Primary	No	13	6	7	Nearby HAB-SFWMD-0074
HAB-SFWMD-0074	Timer Powers Park - Boat Ramp	C-44 canal/Primary	No	0	0	0	Nearby SEHAB0046
SEHAB0068	M canal - Royal Palm Beach	M canal/Primary	No	2	1	1	Nearby station 32008011
59785	Z6-CN-16010 UNNAMED CANAL	M canal/Primary	No	2	1	0	Nearby station 32008012
S1-2	S1-2	Local canal	No	12	6	6	Nearby station S1
S1	S1	Local canal	No	37	18	18	Nearby station S1-2

Table 43. List of water quality stations in the South Lake Okeechobee subwatershed

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
28020306FTM	S235 AT MOOREHAVEN	LD-3 canal to C-43 canal	No	0	0	0	DO and water temperature only. Nearby station S235, 17545, CR-00.2T
G5SD0048	S-236 Disc.Can @St.Catherine	SFCD Canal/Local canal	No	4	2	2	Nearby station 52010006
G5SD0049	S-3 Canal @ Railroad Bridge	L-25 canal	No	8	4	2	Nearby station L25-1
35013	SF5-LR-2013 L-19	L-19 canal/Primary	No	2	1	0	Nearby station 52010002
41360	Z6-CN-6020 C-51 CANAL	L-12 canal/Primary	No	2	1	0	Nearby station 28011007
45103	Z6-CN-8005 UNNAMED CANAL	L-24 canal/Primary	No	2	1	0	Nearby station L25-3
CR-00.2T	C-43 AT S235P NEAR S-77 IN MOOREHAVEN	LD-3 canal to C-43 canal	No	15	8	8	Nearby station 28020306FTM with only DO and water temperature
CULV10	PRIVATE PUMP STATION ON HERBERT HOOVER DIKE A SOUTH-END OF P	Pelican Island canal to lake O/Primary	Tier 1	68	36	37	S273- Only TP collected when flowing to the lake, 28010970
CULV12	PRIVATE PUMP STATION ON HERBERT HOOVERDIKE S OF GLADES AIRPO	S275 Outflow Canal to Lake O	Tier 2	107	56	55	S275 - Only TP collected when flowing to the lake
CULV12A	PRIVATE PUMP STATION ON HERBERT HOOVERDIKE 2 MILES N. OF GLS	S274 Outflow Canal to Lake O	Tier 1	101	51	49	S274- Only TP collected when flowing to the lake
CULV4A	PRIVATE PUMP STATION ON HERBERT HOOVER DIKE 2 5 MILES W. OF	S276 outflow canal to Lake O	Tier 1	115	60	58	-
EBEACH	PRIMARY DISCHARGE FOR EAST BEACH WATER CONTROL DIST TO WP CA	L-10 canal/Primary	No	0	498	36	Nearby station 5736
EBWCD1	East Beach Canal #1 at bridge near entrance to Pahokee WWTP	Pelican Island canal /Primary	No	0	40	20	Nearby station G5SE0059
EBWCD10	Dbl screw gt clvrt .5mi N of Muck City Rd, on Oasis Tree Farm	Local canal	No	103	142	71	-
EBWCD11	Canal 200ft WSW of intrsctn of N St Market Rd & Larrimore Rd	Local canal	No	0	29	15	-
EBWCD12	Culvert .5mi E of intrsctn of N St Market Rd & Larrimore Rd	EBWCD14 canal	No	95	127	63	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
EBWCD13	Canal 0.5 north of EBWCD12	Local canal	No	50	83	40	North of EBWCD12
EBWCD14	Canal 1 mi E of intrsctn of N St Market Rd and Larrimore Rd	EBWCD14 canal	No	91	126	63	-
EBWCD15	Culvert 2mi E of intrsctn of N St Market Rd and Larrimore Rd	EBWCD14 canal	No	0	40	19	East of EBWCD14
EBWCD2	Canal at wooden bridge on SE side of McClure Road	EBWCD Pelican River canal	No	0	38	20	Nearby station G5SE0078
EBWCD3	Culvert 0.8 miles west of US441 on Section 20 Road	EBWCD LAT 31-S	No	88	126	61	-
EBWCD4	Culvert 1 mile south of State Market Road on US441	EBWCD LAT 3-4S	No	98	131	65	-
EBWCD5	Culvert 0.5 miles south of State Market Road on US441	EBWCD LAT 3-4S	No	0	34	17	Nearby station EBWCD4
EBWCD6	Culvert at intrsctn of Muck City Road and State Market Road	EBWCD LAT 3-4S	No	43	68	34	-
EBWCD7	Culvert on S Barfield Hwy 700 ft north of E 7th Street	EBWCD Pelican River canal	No	0	40	20	-
EBWCD8	Culvert on Lime Av, .35M S of Larrimore Rd, Oasis Tree Farm	Local canal	No	0	40	20	-
EBWCD9	Screw gate culvert on N St Market Rd,.25M S of Larrimore Rd	EBWCD LAT 4-1S	No	108	141	70	-
ESHORE2	DISCHARGE E. SHORE WATER CTRL DIST & CLOSTER FARMS TO HILLSB	ESWCD Diversion canal	No	0	482	0	Nearby station 6031
G136	STRUCTURE WHICH CONSISTS OF RISERS WITH FLASH BOARDS	L-1E canal/Primary	No	0	792	369	-
G341	On L-13 canal, 5.5 mi east of old S5AX structure, 3.7 mi west	L-13 canal/Primary	No	0	483	0	Nearby station 8307
INDUSCAN	INDUSTRIAL CANAL AT COUNTY RD 832, CLEWISTON	Industrial canal/Primary	Tier1	263	133	129	-
S169	WAYSIDE PARK IN CLEWISTON BY BOAT RAMP NEAR S-310 BOAT LOCKS	C-21 canal/primary	Tier 1	234	119	117	Nearby station 17370
S235	S-235 CULVERT ON LEVEE LD-3 AT CANAL C-43	LD-3 canal to C-43 canal	No	599	423	287	17545, Nearby station 28020306FTM

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
S236	PUMP STATION ON HERBERT HOVER DIKE NORTH WEST OF S3 AND HGS3	S236 Inflow canal to Lake O	Tier 1	161	83	82	Nearby station 28010049
S3	MIAMI CANAL AT HGS-3 AND S-3 AT LAKE HARBOR, FLA	L-25 canal to lake O	Tier 1	268	134	110	Nearby station 17608
S5A	S-5A PUMPS (ONLY) ON W.P.B. CANAL AT CONS. AREA 1	L-12 canal to L-40 canal/Primary	No	489	582	206	-
S5AW	WATER QUALITY MONITORING STATION	C-51 canal to L-8/Primary	No	88	47	46	Nearby station G5SE0011
SFCD5E	SOUTH FLORIDA CONSERVANCY DISTRICT PUMP STATION 5E	SFCD Canal 2/Secondary	No	0	480	0	-
SSDDMC	SOUTH SHORE DRAINAGE DISTRICT, MIAMI CANAL PUMP STATION	SSDD Canal NO.1/Local canal	No	0	476	0	-
WP15.3TS	PRIVATE PUMP STATION ON SOUTH SIDE OF WPB CANAL,15.3 MILES	PWCD Main Canal No.1/Local canal	No	0	2	0	Nearby station G5SE0091
WPB-26.1	IN C-51 Canal, 3.7 miles upstream of S5A	L-12 canal/Primary	No	0	222	111	Nearby station G5SE0058
WPB-28.2	IN C-51 Canal, 5.9 miles upstream of S5A	L-12 canal/Primary	No	0	222	111	-
WPB-31.2	IN C-51 Canal, 8.8 miles upstream of S5A	L-12 canal/Primary	No	0	222	111	-
WPB-33.5	IN L-10 AT HATTEN BROTHERS DISCHARGE	L-12 canal/Primary	No	0	222	110	-
WPB-35.4	IN C-51 Canal, 7.7 miles downstream of S352	L-10 canal/Primary	No	0	222	111	-
WPB-37.2	IN C-51 Canal, 5.9 miles downstream of S352	L-10 canal/Primary	No	0	221	111	-
WPB-38.0	IN C-51 Canal, 5.1 miles downstream of S352	L-10 canal/Primary	No	0	221	111	-
28010049	Drainage Canal @ S236 DISCH.PT. to L.O.	S236 Inflow canal to Lake O	No	10	5	5	Nearby station S236
28010754	Hillsboro Canal @ SR-715	L-14 canal/Primary	No	10	4	4	Nearby station G5SE0025
28010757	WEST PALM BCH CL AT US441 BRIDGE	L-10 canal/Primary	No	8	4	4	Nearby station WMDBLOOM238, Downstream station S352
28010906	OCEAN CANAL 3.3 MILES W OF US98/US441	L-13 canal/Primary	No	5	3	2	Nearby station G5SE0010
28010912	N NEW RIVER CANAL @ SR80	L-20 canal/Primary	No	10	5	0	Nearby stations G5SE0024, 43
28010913	N.NEW RIV CAN @ CR-827	L-21 canal/Primary	No	10	5	0	-
28010970	EB7 Pelican River @ SR-715, just east Lake O pump	Pelican Island canal/Primary	No	10	5	5	Nearby station CULV10

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
28010971	EB8. Pelican Riv @ Road Closed Rd and McClure Rd.	EBWCD Pelican River canal	No	20	10	9	-
28010980	Miami Canal (C6) @ SR80/Hwy27	L-25 canal/primary	No	20	10	10	Upstream of S3
28010981	SFWMD Canal C2444 at South Shore Blvd.	SSDD Canal NO.2/Local canal	No	4	2	2	Nearby station G5SE0029
28010984	715 Farms Canal Culvert 12A at Hwy 27	S274 Outflow Canal to Lake O	No	22	11	11	Upstream of CULV12A
28011007	West Palm Beach Canal at the ENR Supply Canal	L-12 canal/Primary	No	12	5	6	G5SE0012, Nearby station 41360
52010002	N.NewRivCan @ King Ranch	L-19 canal/Primary	No	20	10	5	Nearby station 35013
52010005	S-236 Disc.Can @St.Catherine	SFCD Canal/Local canal	No	10	5	5	G5SD0048
52010006	S-236 DIsc.Cn 0.5M So.of Catherine	SFCD Canal/Local canal	No	9	5	5	Nearby station G5SD0048
52010007	S-236 Can @ Disch. to Lateral Can	SFCD Canal 1/Local Canal	No	10	5	5	-
52010047	Pelican River-SF @ 441	EBWCD LAT S-1N-1E	No	10	5	5	Nearby station EBWCD6
G5SE0010	Ocean Canal 3.3 Miles W of US98/US441	L-13 canal/Primary	No	10	5	4	Nearby station 28010906
G5SE0011	West Palm Beach Canal at Southern Blvd. East	C-51 canal/Primary	No	4	2	2	Upstream of S-5AW
G5SE0012	West Palm Beach Canal at the ENR Supply Canal	L-12 canal/Primary	No	10	5	5	Nearby station 28011007
G5SE0024	N.New River Canal @ SR80	L-20 canal/Primary	No	10	4	5	Nearby station 28010912, 43
G5SE0025	Hillsboro Canal @ SR715	L-14 canal/Primary	No	12	6	6	Nearby station 28010754
G5SE0029	SFWMD C2444 Canal at Bridge to House off Corkscrew Rd.	SSDD Canal NO.2/Local canal	No	25	13	2	Nearby station 28010981
G5SE0049	Ocean Canal @ SR 700	L-13 canal/Primary	No	10	5	5	-
G5SE0058	West Palm Beach Canal @ Twenty-mile Bend	L-12 canal/Primary	No	10	5	5	Nearby station WPB-26.1
G5SE0059	East Beach Canal near Pahokee WWTP	Pelican Island canal/Primary	No	14	7	7	Nearby station EBWCD1
L1E-1	WPB-L1E-1	L-1E canal/Primary	No	24	12	0	-
L25-1	WPB-L25-1	L-25 canal	No	28	14	0	Nearby station G5SD0049
L25-2	WPB-L25-2	L-25 canal/primary	No	26	13	0	

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
L25-3	WPB-L25-3	L-24 canal/Primary	No	24	12	0	Nearby station 45103
9690	INDUSCAN	Industrial canal/Primary	No	202	181	179	-
17948	S4	RIM canal to Lake o	Tier 1	163	205	132	Same as S4
17370	S169	C-21 canal/primary	Tier 1	179	164	163	Same as S169
17483	S2	L-20 canal/Primary	Tier 1	131	141	117	Same as S2 - TP and TN collected when flowing to lake
17608	S3	L-25 canal to lake O	Tier 1	130	133	115	Same as S3
6031	ESHORE2	ESWCD Diversion canal	No	0	281	0	Same as ESHORE2
8307	G341	L-13 canal/Primary	No	0	573	0	Same as G341
5736	EBEACH	L-10 canal/Primary	No	0	270	61	Same as EBEACH
39	39	L-14 canal/Primary	No	71	34	34	Nearby station SEHAB0091
43	43	L-20 canal/Primary	No	70	33	34	G5SE0024, 28010912
BLOOM105	L-10 @ Canal Point	L-10 canal/Primary	No	2	1	1	Nearby stations 28010757, SEHAB0075, WMDBLOOM238
G5SE0078	Pelican River across from Palm Blvd.	EBWCD Pelican River canal	No	0	0	0	EBWCD2
G4SE0046	Culvert 12 Canal @ Harris Rd.	S275 Outflow Canal to Lake O	No	4	2	2	CULV12, S-275
17545	S235	LD-3 canal to C-43 canal	No	356	773	358	Same as S235, Nearby 28020306FTM
G5SE0091	Farm Canal @ Hwy 98 and SR 717	PWCD Main Canal No.1/Local canal	No	14	7	0	Nearby station WP15.3TS
WMDBLOOM238	Lake Okeechobee - S352 (canal side)	L-10 canal/Primary	No	2	1	0	Nearby stations 28010757, SEHAB0075, BLOOM105
SEHAB0075	L-10 Canal-S352 Canal Side		No	2	1	1	Nearby stations 28010757, WMDBLOOM238, BLOOM105
SEHAB0091	L-14 Canal - NW 5th Street Bridge	L-14 canal/Primary	No	2	1	1	Nearby station 39

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
61617	Z6-CN-17012 NORTH NEW RIVER CANAL	L-20 canal/Primary	No	2	1	0	Better stations upstream
S2	INTERSECTION OF NO.NEW RIVER CANAL AND HILLSBORO CANAL	L-20 canal to Lake O	Tier 1	317	159	111	Nearby station 17483
S351	SPILLWAY STRUCTURE LOCATED AT S2 PUMP. DISCHARGE WATER FROM	L-20 canal to Lake O	Tier 1	991	501	30	-
S354	SPILLWAY STRUCTURE LOCATED AT S3 PUMP. DISCHARGE WATER FROM	L-25 canal to lake O	Tier 1	959	487	32	-
S4	AT PUMP STATION 4 ON THE HERBERT HOVER DIKE N AR CLEWISTON	RIM canal to Lake O	Tier 1	552	277	191	Same as 17948
S3	MIAMI CANAL AT HGS-3 AND S-3 AT LAKE HARBOR, FLA	L-25 canal to Lake O	Tier 1	268	134	110	Same as 17608
17766	S352	L-10 canal to Lake O	Tier 1	280	675	179	Same as S352
S352	AT INTERSECTION OF HEBERT HOOVER DIKE AND WPB CANAL IN CANAL	L-10 canal to Lake O	Tier 1	1355	804	256	Same as 17766

Table 44. List of water quality stations in the West Lake Okeechobee subwatershed

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
29410	Caloosahatchee River 1 mile west of 27 Bridge	C-43 canal/Primary	No	12	6	5	Nearby station G3SD0162
28020199	LONG HAMMOCK CREEK AT STATE ROAD 80	Canal 3- Secondary	No	2	1	1	Nearby station 32271
28020253FTM	Whidden Corner canal	Flaghole Canal/Secondary	No	0	0	0	Nearby station CRFW01
28020257FTM	C-4 canal	42 FOOT Canal/Local canal	No	10	6	6	-
28020271FTM	Radio Tower canal at SR80	Hillard Canal/Secondary	No	12	6	6	Nearby station CRFW03
CALUSA0004FTM	C-19 CANAL @ SFWMD WEIR	C-19 canal/Primary	No	10	5	5	Nearby stations S47D, 17971
CALUSA0018FTM	Caloosahatchee R. @ Caloosa Boat Storage - WB 3237A	C-43 canal/Primary	No	12	6	6	Nearby stations 49572, CALUSA0027FTM

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
CALUSA0026FTM	Caloosahatchee River, Just Upstream of Ortona Lock	C-43 canal/Primary	No	16	8	7	Nearby stations S78, G3SD0150
CALUSA0027FTM	Caloosahatchee River (3237 A) @ Middle	C-43 canal/Primary	No	18	9	9	Nearby stations 49572, CALUSA0018FTM
CALUSA0028FTM	C19 Canal @ US 27	C-19 canal/Primary	No	9	5	5	Nearby stations G3SD0087, CALUSA062FTM
CALUSA0062FTM	C19 Canal North of US 27	C-19 canal/Primary	No	2	1	1	Nearby station G3SD0087,CALUSA028FTM
45291	Z5-LR-8020 CALOOSAHATCHEE CANAL	C-43 canal/Primary	No	2	1	0	Nearby station S78, G3SD0150
46807	Z5-CN-9007 CALOOSAHATCHEE CANAL	C-43 canal/Primary	No	2	1	0	Nearby station 46807
49572	Z5-LR-10021 CALOOSAHATCHEE CANAL	C-43 canal/Primary	No	2	1	0	Nearby stations CALUSA0018FTM, CALUSA0027FTM
CR-04.8T	C-19 AT S-47D	C-19 canal/Primary	No	12	8	8	Nearby stations S-47, 17971
CRFW01	Flaghole Canal at SR 80	Flaghole Canal/Secondary	No	25	43	0	Nearby station G3SD0088
CRFW02	HENDRYdry-Hilliard Canal at SR 80	Right HH Canal/ Local canal	Tier 2	23	39	0	Nearby station 32268
CRFW03	Hilliard Canal at SR 80	Hillard Canal/Secondary	Tier 2	25	44	0	32269, Nearby station 28020271FTM
CRFW29	Citrus Center Canal at SR 78	Citrus Center Canal/Local canal	No	19	10	0	Nearby station G3SD0222
CRFW30	Peeples Ditch at SR 78	Peeples Ditch canal/Local canal	Tier 2	20	38	0	Nearby station 32296
S342N	C19 CANAL @ N FARM FIELDS ON PERIMETER OF NICODEMUS SLOUGH	C-19 canal/Primary	No	29	64	0	Perimeter of Nicodemus Slough
S47D	STRUCTURE ON C19 W. OF MOORE HAVEN	C-19 canal/Primary	Tier 2	84	83	27	Nearby station 17971
S77	S-77 SPILL. & LOCK ON CALOOSAHATCHEE R. L OKEE.	C-43 canal to Lake O	Tier 1	921	525	410	Nearby station CLEW01

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
S78	S-78 SPILLWAY & LOCK ON CALOOSAHATCHEE RIVER ORTA	C-43 Canal	No	670	462	319	Nearby Station G3SD0150
5158	CULV5A	Nicodemus Slough S to Lake O	Tier 2	127	114	114	-
5157	CULV5	Nicodemus Slough N to Lake O	No	79	71	70	-
G3SD0102	LAKE HICPOCHEE IN CANAL @ RIVERSIDE DR	C-43 canal/Primary	No	30	15	16	Nearby station 46807
G3SD0087	C-19 @ US 27	C-19 canal/Primary	Tier 2	44	20	22	Nearby station CALUSA0028FTM
G3SD0088	NINE MILE CANAL @ SR 80	Flaghole Canal/Secondary	No	107	50	52	Nearby station CRFW01
G3SD0150	Caloosahatchee River Above S-78	C-43 canal/Primary	No	16	8	2	Nearby station S78
G3SD0162	C-19 CANAL	C-43 canal/Primary	No	27	14	10	Nearby station CLEW01
32271	CRFW05	Canal 3- Secondary	Tier 2	41	41	41	CRFW05, Nearby station 28020199
32268	CRFW02	Right HH Canal/ Local canal	Tier 2	35	35	35	Same as CRFW02
32269	CRFW03	Hillard Canal/Secondary	Tier 2	32	32	32	Same as CRFW03, Nearby station 28020271FTM
32267	CRFW01	Flaghole Canal/Secondary	Tier 2	26	26	26	CRFW01, Nearby station 28020253FTM
32296	CRFW30	Peeples Ditch canal/Local canal	No	43	43	43	CRFW30
17971	S47D	C-19 canal/Primary	No	33	33	33	S47D
EPA_L03	Caloosahatchee Estuary	C-43 canal to Lake O	No	2	1	1	Nearby station CLEW01
G3SD0222	PadgettRanchCanalAtSR78	Citrus Center Canal/Local canal	No	10	3	0	Nearby station CRFW29
CLEW01	Caloosahatchee River Canal Moore Haven	C-43 canal to Lake O	Tier 2	42	19	20	Nearby station G3SD0162

Table 45. List of water quality stations in the Lower Kissimmee subwatershed

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
APAFRTMDL10	Eight-Mile Culvert	Local canal	No	98	47	0	-
APAFRTMDL7	Tick Island Slough	Local canal	No	91	46	0	-
APAFRTMDL9	Hicks Slough	Local canal	No	99	50	0	-
26010921	Blanket Bay Slough @ SR 60	Blanket Bay Slough/Secondary	No	8	5	5	Near stations BB16313214, 24145, G4CE0180
26011187	EIGHT MILE SLOUGH @ 250M UPSTREAM OF KISSIMMEE RIVER	Eightmile Slough/Secondary canal	No	24	12	7	Nearby station 26011188
26011188	EIGHT MILE SLOUGH @ 500M UPSTREAM OF KISSIMMEE RIVER	Eightmile Slough/Secondary canal	No	16	8	6	Nearby station 26011187
26011189	EIGHT MILE SLOUGH @ 750 M UPSTREAM OF KISSIMMEE RIVER	Eightmile Slough/Secondary canal	No	6	3	2	Nearby station G4CE0189
26011349	Blanket Bay Slough @ 0.7mi. Upstream of Kissimmee River	Blanket Bay Slough/Secondary	No	6	3	3	Nearby stations 26011350, G4CE0179
26011350	Blanket Bay Slough @ 0.9mi. Upstream of Kissimmee River	Blanket Bay Slough/Secondary	No	10	5	5	Nearby stations 26011349, G4CE0179
26010539	ISTOKPOGAC CONFL O KISS R	Istokpoga Canal/Primary	No	4	2	1	Nearby station G4SD0181
KISSRV0011FTM	Istokpoga @ Locks Access Rd. Northside	Kissimmee River/Primary canal	No	11	6	6	Nearby station G4SD0202
KISSRV0020FTM	Kissimmee River @ USGS Station	Kissimmee River/Primary canal	No	4	2	2	Nearby stations G4SD0220, G4SE0088
KR02363211	Istokpoga @ US 98 and Stream	Local canal	No	12	6	6	Nearby stations G4SD207, G4SE0154
KR30353214	Istokpoga Canal @ US 98	Istokpoga Canal/Primary	Tier 2	12	67	6	-
KR34353214	Istokpoga @ US 98 and Stream 300m E of Buckthorn Rd.	Local canal	No	10	5	5	Nearby stations G4SD0208, G4SE0155
40012	Z5-LR-5012 KISSIMMEE RIVER	Kissimmee River/Primary canal	No	2	1	0	Downstream station is KISSRV0020FTM
40152	Z5-SS-5026 UNNAMED SMALL STREAM	Kissimmee River/Secondary canal	No	2	1	0	Nearby station 45797
40779	Z5-LR-5012R KISSIMMEE RIVER	Kissimmee River/Primary canal	No	2	1	0	Downstream station is KISSRV0020FTM

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
41041	Z5-SS-5026R UNNAMED SMALL STREAM	Kissimmee River/Secondary canal	No	2	1	0	Nearby station 45797
43384	Z5-CN-7006 KISSIMMEE RIVER	C-38 canal/Primary canal	No	2	1	0	Nearby station 58147
45152	Z5-CN-8021 KISSIMMEE RIVER	C-38 canal/Primary canal	No	2	1	0	Nearby station 43384
45797	Z5-SS-8045 UNNAMED SMALL STREAM	Kissimmee river/Secondary canal	No	2	1	0	Nearby stations 40152,41041
HIG-KISRIVLOR-1	HIG-KISRIVLOR-1	Kissimmee River/Primary canal	No	38	38	0	-
HIG-KISRIVLOR-2	HIG-KISRIVLOR-2	Kissimmee River/Primary canal	No	7	7	0	Downstream station is HIG-KISRIVLOR-3
HIG-KISRIVLOR-3	HIG-KISRIVLOR-3	Kissimmee River/Primary canal	No	35	35	0	-
HIG-KISRIVLOR-4	HIG-KISRIVLOR-4	Kissimmee River/Primary canal	No	29	29	0	-
2272650	USGS Hydro/WQ Station on Fish Slough	Fish Slough/ Secondary canal		129	72	0	Nearby stations KREA 01, 10486, G4SE0145
2272676	USGS Hydro/WQ Station on Cypress Slough	Cypress Slough/Secondary	Tier 2	212	135	0	Same as 30848, Nearby station 42009006
AM22323213	Armstrong Slough-Lock Access Rd-6.4 miles - Downstream of cu	Wetland	Tier 2	0	1	0	Same as 24094
AM27323211	Armstrong Slough-Lock Access Rd-7.3 miles - Upstream of culv	Wetland	Tier 2	0	51	0	Same as 24095
AM28323233	Armstrong Slough at S-65A (KREA 81) -At platform	C-38 Side canal/S65ABCX/ Secondary canal	No	0	73	0	-
BB16313214	Blanket Bay Slough at Hwy 60 - Downstream of bridge	Blanket Bay Slough/Secondary	Tier 2	0	46	0	Same as 24145, Nearby stations 26010921, G4CE0180
BM14313124	Buttermilk Slough discharge into Kissimmee River	Buttermilk Slough/Local canal	No	0	53	0	-
BM15313111	Buttermilk Slough-River Ranch Rd-1.5 mi. at white bridge -Up	Buttermilk Slough/ Local canal	Tier 2	0	81	0	Same as 24099
CS14353314	CR 700A to CR 700A off NW 192nd Street	Local canal	No	0	36	0	-
CS24353313	CR 68 off Lamb Island Road Smith 47-417-A1	Local canal	No	0	13	0	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
CY05353444	CR 724 Raulerson Ranch 47-411-A5	Local canal	Tier 2	0	180	0	Same as 5197
CY06363411	CR 68 east of US 98 guardrail 47-40-A1	Local canal	Tier 2	0	67	0	Same as 5198
CY17353413	C&M Rucks Dairy outfall KREA 43A	Local canal	Tier 2	0	49	0	Same as 5199
FS20343414	CR 724 Prime Rate Ranch access road	Fish Slough/Secondary canal	No	0	76	0	-
IC35313112	Ice Cream Slough-Kicco Park Rd-1.6 miles south of gate -Upst	Eightmile Slough/Secondary canal	Tier 2	0	104	0	Same as 24101
KR05373311	CR 721 to Boat Ramp Road Butler Dairy 1 KREA 10D	Local canal	Tier 2	0	97	0	Same as 10369
KR11353113	MacArthur 1 Road	Local canal	No	0	28	0	-
KR13353213	Micco Bluff at Fulford property 2	Local canal	No	0	14	0	-
KR13353224	Micco Bluff at Fulford property 3	Local canal	No	0	15	0	-
KR14353213	Micco Bluff at Fulford property 1	Local canal	No	0	14	0	Downstream station 51901
KR14363313	US 98 on Lofton Rd to NW 96th Street	Local canal	No	0	47	0	-
KR15363312	KR153633.1NE Lofton site	Local canal	No	0	14	0	-
KR15363322	KR153633.2NE Lofton site	Local canal	No	0	38	0	-
KR16373314	SR 70 Queen Bee Farms	Local canal	No	0	15	0	-
KR19353213	Old Sebring Grade at Hickory Hammock #1	Local canal	No	0	20	0	-
KR20373413	SR 70 on S65E access road	Local canal	No	0	51	0	-
KR21353314	Ditch on Christina Hooker's Property	Local canal	No	0	17	0	-
KR23313113	Ditch at south gate of River Ranch Resort - Downstream of cu	Local canal	Tier 2	0	59	0	Same as 24100
KR24353114	Old Sebring Grade at Hickory Hammock #2	Local canal	Tier 2	0	105	0	Same as 10385, Nearby station G4SD0205
KR27343112	Bluff Hammock Road	Local canal	No	0	82	0	-
KR29353334	US 98 on Micco Bluff Rd KREA 08	Local canal	Tier 2	0	58	0	Same as 10387- Nearby stations 42009004, G4SE0143
KR30353312	US 98 on Micco Bluff Rd KREA 07	Local canal	Tier 2	0	48	0	Same as 10389

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
KR32343214	Kissimmee River Public Use Area	Local canal	Tier 2	0	51	0	Same as 10390, Nearby stations 42009010, G4SE0144
KR36363311	SR 70 Platts Bluff Rd	Local canal	No	0	16	0	-
KR36363312	SR 70 Platts Bluff Rd residential & former dairy	Local canal	Tier 2	0	64	0	Same as 10393
KREA 01	FISH SLOUGH NW 240 ST.	Fish Slough/Secondary canal	Tier 2	132	93	35	Nearby stations 02272650, 10486, G4SE0145
KREA 04	CHANDLER SLOUGH N. BRIDGE US98	Chandler Slough/Secondary canal	Tier 2	126	91	26	Same as 10489, Nearby stations 42009005, G4SE0141
KREA 06A	CYPRESS SLOUGH AT WATFORD BEEF	Cypress Slough/Secondary	No	94	51	46	-
KREA 101	Located at Kissimmee River Channel off Riverwoods Field Lab	Kissimmee River/Primary canal	No	81	61	38	Same as 33047
KREA 102	Kissimmee R Chnl (Caracara Run) @ existing stage monitor PD	Kissimmee River/Primary canal	No	73	77	70	Same as 33048
KREA 14	OSCAR CLEMONS OUTFALL CULVERT AT PUMP OFF LARSON DAIRY RD.	Facility outfall/Local canal	Tier 2	100	73	18	Same as 10508
KREA 17A	YATES MARSH AT BAPTIST CHILDREN'S HOME	Local canal	Tier 2	162	124	41	Same as 10515
KREA 19	MAPLE RIVER OFF HWY. 70 WEST AT QUEEN BEE FARMS	Local canal	No	26	14	6	-
KREA 22	GORE SLOUGH AT CORNER OF NW 240TH ST AND C700A	Local canal	Tier 2	185	137	36	Same as 10521, Nearby station 42009002
KREA 23	ASH SLOUGH AT VIKING PROPERTY WEIR	Local canal	Tier 2	148	125	24	Same as 10522, Nearby station 42009001
KREA 41A	BUTLER/LARSON AT PROPERTY LINE	Local canal	Tier 2	73	57	15	Same as 10551
KREA 79	POOL A BAY HAMMOCK SLOUGH	Local canal	No	81	65	55	-
KREA 91	RATTLESNAKE OXBOW	Local canal	Tier 2	100	100	84	Same as 10614
KREA 92	CAMP HAMMOCK OXBOW	Kissimmee River/Secondary canal	Tier 2	100	97	71	Same as 10615

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
KREA 93	HICKORY HAMMOCK OXBOW	Kissimmee River/Primary canal	Tier 2	138	100	86	Same as 10616, Nearby G4SD0222
KREA 94	MICCO BLUFF RUN	Kissimmee River/Primary canal	Tier 2	132	98	77	Same as 10617
KREA 95	ISTOKPOGA OXBOW	Kissimmee River/Primary canal	No	96	66	53	-
KREA 97	KISSIMMEE RIVER STATION AT RIVER RANCH OXBOW	Kissimmee River/Local canal	Tier 2	90	98	58	Same as 10620
KREA 98	MONTSDEOCA OXBOW KISSIMMEE RIVER	Kissimmee River/Primary canal	Tier 2	138	98	85	Same as 10621
OK09353212	Oak Creek at Oak Creek Road	Oak creek/Local canal	Tier 2	0	111	0	Same as 14712, Nearby station 42009009
PA10313111	Packingham Slough-River Ranch Rd-0.3 miles - Upstream of cul	Packingham Slough/Primary wetland	No	0	23	0	-
PA10313112	Packingham Slough-Lake Kissimmee discharge west of S-65	Local canal	No	0	113	0	Same as 28256
PC21	KISSIMMEE RIVER POOL C TRANSECT 2 SITE 1	Local canal	No	13	13	11	Same as 16141
PC34	PC34 KISSIMMEE RIVER POOL C TRANSECT 3 SITE 4	Local canal	No	21	18	18	Same as 16146
PC44	PC44 KISSIMMEE RIVER POOL C TRANSECT 4 SITE 4	Local canal	No	22	21	20	Same as 16150
PC45	PC45 KISSIMMEE RIVER POOL C TRANSECT 4 SITE 5	Local canal	No	27	28	26	Same as 16151
PI01333223	PI01333223	Pine Island Slough/Wetland	No	0	21	0	-
S65A	S-65A SPILLWAY ON CANAL C-38	C-38 Kissimmee River/Primary canal	Tier 2	222	299	104	Same as 18085
S65C	S-65C SPILLWAY ON CANAL C-38	C-38 Kissimmee River/Primary canal	No	280	305	162	-
S65D	S-65D SPILLWAY ON CANAL C-38	C-38 Kissimmee River/Primary canal	Tier 2	273	303	170	Same as 18121
S65DX1	S65D AUXILIARY SPILLWAY 1 ON CANAL C-38	Kissimmee River/Secondary canal	No	164	141	128	Same as 33067

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
SM20333314	Sevenmile Slough (Kissimmee Prairie Preserve State Park)	Sevenmile Slough canal/Wetland	No	0	30	0	-
SM21333314	Kissimmee Prairie Preserve State Park	sevenmile Slough/Secondary canal	Tier2	0	25	0	Same as 18998, Nearby station G4SE0153
YM26363312	SR 70 Platts Bluff Rd Yates Marsh at railroad trestle	Local canal	No	0	54	0	-
42009001	Ash Slough @ Viking Weir	Local canal	No	6	3	3	Nearby stations KREA 23 and 10522
42009002	GoreSlu @ CR700A	Local canal	No	12	6	6	Nearby station KREA 22, 10521
42009003	AshSlu @ CR700A/NW176	Gore Branch/Secondary	No	26	12	10	Nearby station G4SE0130
42009004	AshSluTert @ CR 68/NW 168	Local canal	No	18	9	9	Nearby stations G4SE0143, KR29353334,10387
42009005	ChandlerSlu@NBridgeUS98	Chandler Slough/Secondary canal	No	18	9	8	Nearby stations G4SE0141, KREA 04,10489
42009006	ChandlerSlu@NW144th	Cypress Slough/Secondary	No	20	10	10	Nearby stations 02272676, 30848
42009007	ChandlerSlu@SBridgeUS98	Cypress Slough/Secondary	No	12	6	6	Nearby station G4SE0142
42009009	Oak Creek @ Oak Creek Road	Oak creek/Local canal	No	26	13	14	Nearby stations OK09353212, 14712
42009010	OakCrk@Stave-SluPUA	Local canal	No	16	8	8	Nearby station KR32343214, 10390, G4SE0144
G4SE0078	Kissimmee Upstream of S-65C	C-38 Kissimmee River/Primary canal	No	4	2	1	Upstream of S65C
G4SE0080	Oak Creek @SR68	Oak creek/Local canal	No	44	21	18	Nearby stations 42009009, 14712, OK09353212
G4SE0088	Restored Kissimmee @ PC-33	Kissimmee River/Primary canal	No	2	1	1	Nearby stations G4SD0220, KISSRV0020FTM

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
KISSR2	KISSR2-DEP/UF Wetland & Rivers 2014	C-38 Kissimmee River/Local canal	No	4	2	0	Nearby station KISSIR3
KISSR3	KISSR3-DEP/UF Wetland & Rivers 2014	C-38 Kissimmee River/Local canal	No	4	2	0	Nearby station KISSR2
KISSW1	KISSW1-DEP/UF Wetland & Rivers 2014	Sevenmile Slough/Wetland	No	4	2	0	Nearby stations KISSW3, KISSW4
KISSW3	KISSW3-DEP/UF Wetland & Rivers 2014	Sevenmile Slough/Wetland	No	4	2	0	Nearby stations KISSW1, KISSW4
KISSW4	KISSW4-DEP/UF Wetland & Rivers 2014	Sevenmile Slough/Wetland	No	4	2	0	Nearby stations KISSW3, KISSW1
KR03373333	KR03373333	Local canal	No	0	78	0	-
10621	KREA 98	Kissimmee River/Primary canal	No	89	89	71	Same as KREA 98
18085	S65A	C-38 Kissimmee River/Primary canal	Tier 2	185	262	126	Same as S65A
18130	S65E	C-38 Kissimmee River/Primary canal	Tier 1	215	263	182	Same as S65E
10486	KREA 01	Fish Slough/Secondary canal	Tier 2	71	70	58	Same as KREA 01, Nearby station G4SE0145, 2272650
30848	2272676	Cypress Slough/Secondary	Tier 2	79	79	48	Same as 02272676, Nearby station 42009006
10614	KREA 91	Local canal	No	87	89	80	Same as KREA 91
16141	PC21	Local canal	No	12	12	11	Same as PC21
10615	KREA 92	Kissimmee River/Secondary canal	No	90	90	68	Same as KREA 92
10617	KREA 94	Kissimmee River/Primary canal	No	90	90	72	Same as KREA 94
14712	OK09353212	Oak creek/Local canal	No	39	63	37	Same as OK09353212, Nearby station 42009009
10620	KREA 97	Kissimmee River/Local canal	No	89	89	55	Same as KREA 97
33047	KREA 101	Kissimmee River/Primary canal	No	80	80	67	Same as KREA 101

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
10508	KREA 14	Facility outfall/Local canal	No	73	73	37	Same as KREA 14
33048	KREA 102	Kissimmee River/Primary canal	No	61	61	55	Same as KREA 102
10551	KREA 41A	Local canal	No	64	64	19	Same as KREA 41A
5197	CY05353444	Local canal	No	21	41	0	Same as 5197
10515	KREA 17A	Local canal	No	90	90	51	Same as KREA 17A
10390	KR32343214	Local canal	No	24	30	20	Same as KR32343214, Nearby stations 42009010, G4SE0144
10616	KREA 93	Kissimmee River/Secondary canal	No	90	88	73	Same as KREA 93
24145	BB16313214	Blanket Bay Slough/Secondary	No	16	28	16	Same as BB16313214, Nearby stations 26010921, G4CE0180
10385	KR24353114	Local canal	No	20	32	3	Same as KR24353114
10489	KREA 04	Chandler Slough/Secondary canal	Tier 2	43	43	27	Same as KREA 04, Nearby stations 42009005, G4SE0141
16151	PC45	Local canal	No	11	11	11	Same as PC45
10522	KREA 23	Local canal	No	85	84	48	Same as KREA 23, Nearby station 42009001
16146	PC34	Local canal	No	4	4	4	Same as PC34
10521	KREA 22	Local canal	No	105	105	72	Same as KREA 22, Nearby station 42009002
24100	KR23313113	Local canal	No	7	9	7	Same as KR23313113
16150	PC44	Local canal	No	14	14	14	Same as PC44
10389	KR30353312	Local canal	No	9	14	7	Same as KR30353312
51901	Z5-SS-11007 UNNAMED SMALL STREAM	Local canal	No	2	1	0	Upstream station is KR14353213
G4CE0180	Blanket Bay Slough @ SR 60	Blanket Bay Slough/Secondary	No	17	9	8	Near stations BB16313214, 24145, 26010921

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
G4SE0130	Gore Branch @ 724	Gore Branch/Secondary	No	18	9	9	Nearby station G4SE0130
G4CE0179	Blanket Bay Slough @ 0.9 mi. Upstream of Kissimmee River	Blanket Bay Slough/Secondary	No	18	9	9	Nearby station 26011350
G4SD0181	Istokpoga Canal	Istokpoga Canal/Primary	No	2	0	1	Nearby station 26010539
24101	IC35313112	Eightmile Slough/Secondary canal	No	37	35	37	Same as IC35313112
33067	S65DX1	Kissimmee River/Secondary canal	No	109	108	99	Same as S65DX1
18121	S65D	C-38 Kissimmee River/Primary canal	Tier 2	113	113	101	Same as S65D
10499	KREA 100	Local canal	Tier 2	93	93	49	-
24099	BM15313111	Buttermilk Slough/Local canal	No	21	21	7	Same as BM15313111
28256	PA10313112	Local canal	No	56	60	38	Same as PA10313112
5198	CY06363411	Local canal	No	30	32	18	Same as CY06363411
10369	KR05373311	Local canal	No	29	30	21	Same as KR05373311
24095	AM27323211	Wetland	Tier 2	6	6	6	Same as AM27323211
5199	CY17353413	Local canal	No	25	27	7	Same as CY17353413
10393	KR36363312	Local canal	No	15	15	13	Same as KR36363312
24094	AM22323213	Wetland	Tier 2	29	29	7	Same as AM22323213
10388	KR30353214	Istokpoga Canal/Primary	No	11	12	9	Nearby station HAB-SD-073
18998	SM21333314	Sevenmile Slough/Secondary canal	No	38	38	37	Same as SM21333314, Nearby station G4SE0153
G4CE0189	Eightmile Slough @ 700m W of Kissimmee River	Eightmile Slough/Secondary canal	No	2	1	1	Nearby station 26011189
G4CE0186	Packingham Slough @ 3 km S of SR 60	C-38 Kissimmee River/Primary canal	No	16	9	3	-
10387	KR29353334	Local canal	No	2	2	2	Same as KR29353334-Nearby stations 42009004, G4SE0143

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
G4SD0208	Istokpoga@US98Buckthorn	Local canal	No	0	0	0	DO and water temperature only. Nearby stations KR34353214, G4SE0155
G4SD0202	Kissimmee Riv @Locks Access	Kissimmee River/Primary canal	No	0	0	0	Nearby station KISSRV0011FTM
G4SE0136	Chandler Slough @ NW 190th	Chandler Slough/Secondary canal	No	0	0	0	Only DO and water temperature
G4SD0207	Istokpoga@US98andStream	Local canal	No	0	0	0	DO and water temperature only. Nearby station KR02363211
58147	Z5-CN-15010 KISSIMMEE RIVER	C-38 canal/Primary canal	No	2	1	0	Nearby station 43384
G4SE0145	GORE BRANCH / CHANDLER SLOUGH @ NW 240th ST	Fish Slough/Secondary canal	No	8	4	1	Nearby stations KREA 01, 10486, 2272650
G4SE0143	Chandler Slough @ NW 160th Dr.	Local canal	No	8	4	1	Nearby stations 42009004, KR29353334,10387
G4SE0141	Chandler Slough @ Northern US98 Culvert	Chandler Slough/Secondary canal	No	8	4	1	Nearby stations 42009005, KREA 04,10489
G4SE0142	Chandler Slough @ Southern US98 Culvert	Cypress Slough/Secondary	No	20	10	1	Nearby station 42009007
59629	KISSIMMEE RIVER		No	56	29	0	Nearby station S65
HAB-SD-073	Istokpoga Canal Boat Ramp	Istokpoga Canal/Primary	No	2	1	1	Nearby station 10388
G4SD0205	Hickory Hammock	Local canal	No	4	2	0	Nearby station KR24353114, 10385
G4SE0144	Starvation Slough @ Public Use Trail	Local canal	No	18	9	0	Nearby stations KR32343214, 10390, 42009010
G4SD0222	KissimmeeRiverMidSite	Kissimmee River/Primary canal	No	2	1	1	Nearby stations 10616, KREA 93
G4SE0153	Sevenmile Slough at Peavine Trail	sevenmile Slough/Secondary canal	No	12	6	0	Nearby stations SM21333314, 18998

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
G4SE0154	Kissimmee Tributary at US 98 - West of Cornwell	Local canal	No	0	0	0	Only DO and water temperature. Nearby stations KR02363211, G4SD207
G4SD0220	KissimmeeRiverSouthSite	Kissimmee River/Primary canal	No	2	1	1	Nearby stations G4SE0088, KISSRV0020FTM
G4SE0155	Kissimmee Tributary at US 98 - East of Buckhorn	Local canal	No	0	0	0	DO and water temperature only. Nearby stations KR34353214, G4SD0208
62273	Z5-LR-17020 KISSIMMEE RIVER	Kissimmee River/Primary canal	No	2	1	0	Downstream station is KISSRV0020FTM
3501	KISSIMMEE RIVER AT S-65E NEAR OKEECHOBEE, FLA	C-38 Kissimmee River/Primary canal	No	350	174	8	-
S65E	S-65E SPILLWAY/LOCK ON C-38 AT LAKE OKEECHOBEE	C-38 Kissimmee River/Primary canal	Tier 1	431	379	216	Same as 18130
S65	S-65 SPILLWAY ON LAKE KISSIMMEE AT CANAL C-38	C-38 Kissimmee River/Primary canal	No	220	306	93	Nearby station 59629
18083	S65	C-38 Kissimmee River/Primary canal	No	168	214	102	Same as S65

Table 46. List of water quality stations in the Upper Kissimmee subwatershed

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
26010018	Horse(shoe) Creek @ Horseshoe Creek Rd.	Horse Creek/Primary	No	14	7	6	Nearby station G4CE0208 (only DO and water temperature)
26010030	Horseshoe Creek @ Lee Jackson Hwy (CR547)	Horse Creek/Primary	No	4	2	2	Nearby stations HORSE CRK2, G4CE0207
26010078	Hatchinea Canal 50 yards south of Cypress Lake	Downstream of Cypress Lake	No	26	13	2	Nearby stations HL08283014, 35798, G4CE0140, G4CE0064

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
26010164	Reedy Creek at SR 192; Secondary Permanent Network Station	Reedy Creek/Primary	No	20	10	10	Nearby stations RC-21C, 26010164, 03090101-RC-01
26010169	Cypress Creek at Reedy Cr Improvement Dist. Structure S-103A	Tributary	No	8	3	3	Upstream station is C-5
26010171	Canal C-1 at Reedy Creek Improvement Dist. Structure S-14	Local canal	No	17	9	7	-
26010174	Bonnet Creek at US Hwy 192 Bridge	Local canal	No	8	4	3	Nearby stations C-12B, C-12D, C-12C
26010185	Shingle Creek at Taft-Vineland Rd. Bridge	Shingle Creek/Primary	No	8	4	4	Nearby station SCC
26010871	Cypress Creek at SR 535	Tributary	No	8	4	3	Nearby station G4CE0008
26010928	Shingle Creek @ Town Center Blvd	Shingle Creek/Primary	Tier 2	14	7	7	Nearby station MS 15
26010970	Reedy Creek at US Hwy I-4 bridge	Reedy Creek/Primary	No	2	1	1	G4CE0137, Nearby station RC-13C
26010972	Davenport Creek at Highway 545	Tributary	No	20	10	9	Nearby stations RC-16, G4CE0023
26010974	Reedy Creek 0.2 miles upstream of mouth at Lake Russell	Reedy Creek to Lake Russell/Primary	No	4	2	2	Nearby stations 26011463, 03090101-RC-05
26010979	Reedy Creek @ 200m upstream of confluence w/Dead River	Reedy Creek/Primary	No	15	9	9	Nearby station 26011056
26011050	Bonnet Creek @ golf cart crossing	Local canal	No	12	6	5	-
26011052	Bonnet Creek @ 1.05 miles downstream of US 192	Local canal	No	10	5	4	Nearby station C-12E
26011056	Reedy Creek @ 415m upstream of confluence with Dead River	Reedy Creek/Primary	No	14	7	7	Nearby station 26011057
26011057	Reedy Creek @ 630m upstream of confluence with Dead River	Reedy Creek/Primary	No	10	5	5	Nearby station 26011058
26011058	Reedy Creek @ 845m upstrm of confluence w/Dead River	Reedy Creek/Primary	No	10	5	5	Nearby station 26011057
26011060	Dead River @ 0.52 mi downstream of confluence w/Reedy Cre	DEAD River/Primary	No	20	10	8	Nearby station 26011061
26011061	Dead River @ 475m downstream of confluence w/Reedy Creek	DEAD River/Primary	No	8	4	4	Nearby station 26011060

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
26011062	Dead River @ 175m downstream of confluence with Reedy Creek	DEAD River/Primary	No	8	4	4	Nearby station 26011061
26011067	Kissimmee River @ 1.15 mi upstrm of mouth of Lake Kissimmee	C-37 canal/Primary	No	22	11	7	Nearby station 26011152
26011093	Reedy Creek @ Pleasant Hill Bridge	Reedy Creek/Primary	No	16	8	7	Nearby station CREEDYBR
26011152	Kissimmee Riv. @ 1.3 miles upstream of mouth of L. Kissimmee	C-37 canal/Primary	No	11	6	4	Nearby station 26011067
26011153	Kissimmee Riv. @ 1.7 miles upstream of mouth of L. Kissimmee	C-37 canal/Primary	No	6	3	1	Nearby station 26011152
26011176	ALO @ US 192 CONNNECTING ALLIGATOR LAKE & LAKE LIZZIE	C-32G canal/Primary	No	22	11	9	Nearby stations AL11263113,28088
26011177	ALO @ US 192 CONNECTING ALLIGATOR LAKE @ BUCK LAKE	Local canal/downstream of Buck Lake	No	2	1	0	Nearby AL24263113, 28087
26011195	ALLIGATOR LAKE OUTLET @ CANAL, 350M SOUTH OF ALLIGATOR LAKE	Downstream of Alligator Lake/Primary	No	10	6	5	Nearby station 43380,57257
26011201	Lake Toho South @ Fanny Bass Rd.	Local canal	No	4	2	2	FANNY_BASS
26011369	Shingle Creek Below Pleasant Hill Rd	Shingle Creek/Primary	No	4	2	2	Upstream station is BNSHINGLE
26011370	Lake Marion Creek at Lake Marion Creek Rd.	Lake Marion Creek/Primary	No	5	3	1	Upstream stations 26011394,57509
26011394	Lake Marion Creek 650 meters downstream of Lake Marion Creek	Lake Marion Creek/Primary	No	3	2	1	Nearby stations 57509, 26011370
26011395	Hart Branch @ RR bridge, N of Moss Park Rd	Hart Branch/Primary	No	6	3	3	Upstream stations G4CE0095, G4CE0201
26011396	Hart Branch @ Moss Park Rd	Hart Branch/Primary	No	2	1	1	Upstream stations 26011395, G4CE0095, G4CE0201
26011453	Catfish Creek @ 450m DS of Lake Pierce	Catfish creek/Primary	No	4	2	2	G4CE0175, downstream of CATFISH
26011455	Clear Lake Outlet @ 100m S of JYP	Local canal	No	10	5	4	Nearby station G4CE0080
26011459	Jackson Canal @ 1100 meters downstream of control structure	Jackson Canal/Primary	No	20	10	5	G4CE0060, downstream stations 26011460, G4CE0246

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
26011460	Jackson Canal @ 1400 meters downstream of control structure	Jackson Canal/Primary	No	7	4	4	G4CE0246, upstream stations 26011459, G4CE0060
26011463	Reedy Creek 0.35 miles US of Lake Russell	Reedy Creek to Lake Russell/Primary	No	8	4	4	Nearby stations 26010974, 03090101-RC-05
G4CE0001	WPA Canal/Gator Bay Canal @ 200 meters upstream of bridge	Local canal/To Lake Tohopekaligo	No	16	7	8	Nearby stations G4CE0065, LT32263013
G4CE0023	Davenport Creek @ East of SR 545	Tributary	No	6	3	1	Upstream station RC-16,26010972
G4CE0050	Reedy Creek @ 375m DS of Lake Russell	Lake Russell/Primary	No	28	13	14	Downstream of Lake Russell
G4CE0060	Jackson Canal @ 1100 meters downstream of control structure	Jackson Canal/Primary	No	8	4	4	26011459, downstream stations 26011460, G4CE0246
G4CE0064	Hatchinaha Canal 2100 ft south of Lake Cypress	C-36 canal/Primary	No	12	6	1	Downstream of Cypress Lake, downstream station HL08283014
G4CE0065	WPA Canal/Gator Bay Canal @ 400 meters upstream of bridge	Local canal/To Lake Tohopekaligo	No	2	1	1	Upstream of G4CE0001, LT32263103, 28084
G4CE0067	Tiger Creek 660m downstream of Lake Kissimmee	Tiger Creek/Primary	No	10	5	5	Downstream of Lake Kissimmee, Nearby stations G4CE0068, G4CE0069
G4CE0068	Tiger Creek 915m downstream of Lake Kissimmee	Tiger Creek/Primary	No	10	5	5	Downstream of Lake Kissimmee, Nearby stations G4CE0067, G4CE0069
G4CE0069	Tiger Creek 1.2km downstream of Lake Kissimmee	Tiger Creek/Primary	No	10	5	5	Downstream of Lake Kissimmee, Nearby stations G4CE0067, G4CE0068
G4CE0070	Tiger Creek 1.45km downstream of Lake Kissimmee	Tiger Creek/Primary	Tier 2	38	19	18	Downstream of Lake Kissimmee, G4CE0067, G4CE0068, G4CE0069

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
G4CE0071	Lake Marion Creek South of Poinciana Parkway	Lake Marion Creek/Primary	No	2	1	1	Nearby stations 53187, MARION CRK1, 43746
G4CE0080	Clear Lake Outlet @ Chandler Street	Local Canal	No	2	1	1	26011455
G4CE0087	Rosalie Canal 671m upstream of bridge	Zipper Canal/Primary	No	10	5	5	Nearby stations G4CE0089, G4CE0090, G4CE0119, G4CE0088, KUB009, 28426
G4CE0088	Rosalie Canal 92m upstream of bridge	Zipper Canal/Primary	No	12	6	6	Nearby stations G4CE0089, G4CE0090, G4CE0119, G4CE0087, KUB009, 28426
G4CE0089	Rosalie Canal 346m upstream of bridge	Zipper Canal/Primary	No	10	5	5	Nearby stations G4CE0090, G4CE0119, G4CE0087, KUB009, 28426
G4CE0090	Rosalie Canal 915m upstream of bridge	Zipper Canal/Primary	No	6	3	3	Nearby stations G4CE0089, G4CE0087, G4CE0119, G4CE0088, KUB009, 28426
G4CE0094	Boggy Creek 100m S of Boggy Creek Road	Boggy Creek/Primary	No	4	2	1	Upstream station is ABOGG
G4CE0095	Hart Branch @ 800m DS of Dowden Rd	Hart Branch/Primary	No	4	2	2	Downstream stations G4CE0201, 26011395, 26011396
G4CE0107	Clear Lake Outlet @ Arnold Palmer Drive	Local canal	No	6	3	3	SCH
G4CE0119	ROSALIE CANAL 875 M UPSTREAM OF BRIDGE	Zipper Canal/Primary	No	4	2	2	Nearby stations G4CE0089, G4CE0087, G4CE0090, G4CE0088, KUB009, 28426
G4CE0127	Boggy Creek @ 1100m South of Boggy Creek Rd	Boggy Creek/Primary	No	26	15	13	-
G4CE0137	Reedy Creek @ 15m upstream of I-4 bridge	Reedy Creek/Primary	No	6	3	3	26010970, Downstream station RC-13C
G4CE0140	Hatchineha Canal 50 yds S of Cypress Lake	C-36 canal/Primary	No	2	1	0	Nearby stations 26010078, HL08283014, 35798

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
03090101-RC-01	Reedy Creek Station R-1	Reedy Creek/Primary	No	0	2	0	Nearby stations RC-21C, 26010164
03090101-RC-05	Reedy Creek Station R-5	Reedy Creek to Lake Russell/Primary	No	0	2	0	Nearby stations 26011463, 26010974
03090101-SC-05	Shingle Creek Station 5	Shingle Creek/Primary	No	0	2	0	Nearby stations SCD, OSC-SHGLECR-5-1
03090101-SC-08	Shingle Creek Station 8	Shingle Creek/Primary	No	0	2	0	Nearby stations MS 14
3506	LOWER END OF LAKE KISSIMMEE ON S65	Lower end of Lake/Primary	No	297	150	4	S65/18083
39488	Z5-LR-4020R BOGGY CREEK	Boggy Creek/Primary	No	2	1	0	Upstream station BCC, ABOGG
42167	Z5-LR-6012 BOGGY CREEK	Boggy Creek/Primary	No	2	1	0	Downstream station ABOGGN
42170	Z5-LR-6016 WEOHYAKAPKA CREEK	Weohyakapka Creek/Primary	No	2	1	0	Upstream station CRK1
43746	Z5-LR-7017 LAKE MARION CREEK	Lake Marion Creek/Primary	No	2	1	0	Downstream station is MARION CRK1
43747	Z5-LR-7018 SHINGLE CREEK	Shingle Creek/Primary	No	2	1	0	Downstream station MS 14
44285	Z5-SS-7055 UNNAMED SMALL STREAM	Parker Slough/Primary	No	2	1	0	Nearby station 49871,45785
45289	Z5-LR-8018 CATFISH CREEK	Catfish creek/Primary	No	2	1	0	Nearby stations 26011453, G4CE0175, CATFISH
45292	Z5-LR-8022 SHINGLE CREEK	Shingle Creek/Primary	No	2	1	0	Upstream station is 45292
45785	Z5-SS-8007 UNNAMED SMALL STREAM	Parker Slough/Primary	No	2	1	0	Nearby station 44285, 49871
49871	Z5-SS-10067 UNNAMED SMALL STREAM	Parker Slough/Primary	No	2	1	0	Nearby station 44285, 45785
50699	Z5-CN-11001 UNNAMED CANAL	C-34 canal/Primary	No	0	1	0	Downstream stations CL19273113, CL19273123
MS 02	East City Ditch Outfall	Local canal	Tier 2	118	58	57	-
MS 03	Mill Slough Outfall	Mill Slough/Primary	Tier 2	118	60	60	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
MS 04	Bass Slough at Boggy Creek	Bass Slough/Primary	Tier 2	105	55	52	-
MS 05	Bass Slough at Timothy Lane	Bass Slough/Primary	Tier 2	113	57	53	-
MS 06	Mill Slough at Mill Run Boulevard	Mill Slough/Primary	Tier 2	110	54	56	-
MS 13	West City Ditch at Hacienda Circle	Local Canal	Tier 2	113	59	59	-
MS 14	Shingle Creek at John Young Parkway	Shingle Creek/Primary	Tier 2	89	45	43	Nearby station 03090101-SC-08
MS 15	Shingle Creek at Town Center Boulevard	Shingle Creek/Primary	No	97	50	49	26010928
MS 17	Shingle Creek at Yates Road	Shingle Creek/Primary	Tier 2	97	50	48	Nearby stations OSC-SHGLECR-4-1, 62268
OSC-SHGLECR-2-1	OSC-SHGLECR-2-1	Shingle Creek/Primary	No	71	73	0	Nearby station G4CE0173
OSC-SHGLECR-3-1	OSC-SHGLECR-3-1	Shingle Creek/Primary	No	72	73	0	Upstream station is MS 14
BCA	Boggy Creek A (Tradeport)	Local canal to Boggy creek	Tier 2	74	94	29	-
BCB	Boggy Creek B (S.R. 527A)	Boggy Creek/Primary	Tier 2	13	21	4	Nearby station BC_CONSERV I
BCC	Boggy Creek C (at S.R. 530)	Boggy Creek/Primary	No	17	24	7	Nearby station ABOGG
BCE	Boggy Creek E (S.R. 527)	Local canal/Boggy creek	No	113	117	56	-
CCA	Cypress Creek A (Hwy. 535)	Tributary	No	79	84	40	Downstream stations G4CE0008, 26010871
SCC	Shingle Creek (Central FL Pkwy.)	Shingle Creek/Primary	Tier 2	96	131	59	26010185, 54729
SCD	Shingle Creek (Osceola Co.Hwy192)	Shingle Creek/Primary	Tier 2	92	112	49	Nearby stations OSC-SHGLECR-5-1,03090101-SC-05
SCH	Shingle Creek (N of L.B. Mcleod)	Local canal	No	59	67	31	Nearby station G4CE0107
SCN	Shingle Creek at Conroy Rd (formerly SC33)	Shingle Creek/Primary	No	31	42	17	-
SCO	Shingle Creek City of Orlando	Shingle Creek/Primary	No	22	21	8	Nearby station SCG, SC_MILLENIA
BC_CONSERV I	Toho NRP - Conserv I	Boggy Creek/Primary	No	6	15	13	Nearby station BCB, BC_CONSERV I
BC_EAGLE CREEK	Toho NRP - Eagle Creek	Local canal	No	26	21	16	

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
BC_HIGHPLAINS	Toho NRP - Highplains	Jim Branch/Primary	No	9	13	13	Downstream stations G4CE0244, JIM_BRANCH
BC_MOSSPARK RD	Toho NRP - Moss Park Rd	Local canal	No	20	19	18	-
BC_MUD LAKE	Toho NRP - Mud Lake	Boggy creek DS of Mud Lake/Primary	No	1	17	10	-
LFM_EAGLE OUT	Lake Fran Monitoring - Eagle's Nest Outfall	Local canal	No	27	24	22	Eagle Nest Wetland Outfall
LFM_SHINGLE 1	Lake Fran Monitoring - Shingle Creek 1	Local canal	No	29	20	17	-
LFM_SHINGLE 2	Lake Fran Monitoring - Shingle Creek 2	Local Canal	No	28	21	21	-
LFM_SHINGLE 3	Lake Fran Monitoring - Shingle Creek 3	Local canal	No	24	17	18	-
SC_BEHRS	Toho NRP - Behr's	Local canal	No	37	20	18	-
SC_MILLENIA	Toho NRP - Millenia	Shingle Creek/Primary	No	106	61	57	Nearby stations SCO, SCG
SC_N TURNPIKE	Toho NRP - Turnpike/Nbound	Shingle Creek/Primary	No	15	12	13	-
SC_W GLENBARR	Toho NRP - Glenn Barr	Shingle Creek/Primary	No	14	13	13	Nearby station SCL
HORSE CRK2	HORSE CR AT SR 547 AT RR TRESTLE Old ID: Horseshoe Cr2	Horse Creek/Primary	Tier 2	130	64	55	Nearby station G4CE0207
MARION CRK1	MARION CR N OF 542-BR ON POINCIANA PKW	Lake Marion Creek/Primary	No	93	46	42	Nearby stations 53187, G4CE0071, 43746
TIGER CRK3	TIGER CR ON WALK IN WATER RD	Tiger Creek/Primary	No	121	68	59	-
C-12B	Bonnet Creek/C1 Canal	Local canal	No	14	0	0	Nearby stations C-12C, C-12D, 26010174
C-12C	Bonnet Creek/C1 Canal	Local canal	No	13	0	0	Nearby stations C-12B, C-12D, 26010174
C-12D	Bonnet Creek/C1 Canal	Local canal	No	14	0	0	Nearby stations C-12B, C-12C, 26010174
C-5	Cypress Creek	Local canal	No	8	0	0	Downstream station is 26010169
RC-12	Reedy Creek	Reedy Creek	No	24	0	0	Nearby stations RC-13, RC-14, RC-15, RC-19A, STW-4M

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
RC-13	Reedy Creek	Reedy Creek	No	12	0	0	Nearby stations RC-12, RC-14, RC-15, RC-19A, STW-4M
RC-14	Reedy Creek	Reedy Creek	No	49	0	0	Nearby stations RC-13, RC-12, RC-15, RC-19A, STW-4M
RC-15	Reedy Creek	Reedy Creek	No	9	0	0	Nearby stations RC-13, RC-14, RC-12, RC-19A, STW-4M
RC-16	Davenport Creek	Davenport Creek/Local canal	No	14	0	0	Nearby stations G4CE0023,26010972
RC-19A	Reedy Creek	Reedy Creek	No	64	24	24	Nearby stations RC-13, RC-14, RC-15, RC-12, STW-4M
STW-4M	Reedy Creek	Reedy Creek	No	66	31	10	Nearby stations RC-13, RC-14, RC-12, RC-19A, RC-15, STW-4M
ABOGG	BOGGY CREEK TRIBUTARY TO E. LAKE TOHO AT SR5 ON BRIDGE	Boggy Creek	No	38	24	22	Nearby station BCC
ABOGGN	Bridge over Boggy Creek	Boggy Creek/Primary	Tier 2	80	72	58	32907, Upstream station 42167
AJ28243124	AJ28243124	C-29A canal/Primary	No	0	14	0	Nearby stations AJ33243122, 39077
AJ33243122	Upstream of S-62 on C-29A Canal at Lake Hart Outfall	C-29A canal/Primary	Tier 2	0	25	0	Nearby stations AJ28243124, 39077
AL11263113	AL11263113	C-32G canal/Primary	Tier 2	0	91	0	Nearby stations 28088, 26011176
AL24263113	AL24263113	BRICK Canal/Primary	Tier 2	0	139	0	Nearby stations 28087, 26011177
AL34263113	AL34263113	BRICK Canal/Primary	Tier 2	0	147	0	28086
BNSHINGLE	BNSHINGLE		Tier 2	140	95	90	24591, Nearby station 26011369
BS-59	SFWMD STRUCTURE S-59 ON S.SIDE OF E.LAKE TOHO AT LAKESHORE B	Downstream of East Lake downstream of East lake Tohopekaliga/Primary	Tier 2	91	88	18	Nearby station 3268

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
CATFISH	CATFISH CREEK NR LAKE WALES, FLA.	Catfish creek/Primary	No	28	13	14	Downstream stations 26011453, G4CE0175, 45289
CIRCLE_K	Downstream of culvert under Boggy Crk Rd behind Circle K	Local canal	No	26	13	0	-
CL06283111	Upstream of S-63A on C34 Canal@ Canoe Creek Rd (TUK: CS-63A)	C-34 canal/Primary	Tier 2	0	74	0	Nearby stations 34297, CL06283121
CL06283112	Ditch on E side of C34 discharge thru PC 12 0.3 mi up of S63A	C-34 canal/Primary	Tier 2	4	7	4	39075, Upstream station 45151
CL06283121	CL06283121	C-34 canal/Primary	No	0	46	0	Nearby stations 34297, CL06283111
CL19273113	S-63 on C-34 Canal at Lake Gentry Outfall	C-34 canal/Primary	No	0	26	0	Nearby stations 34447, CL19273123
CL19273123	Upstream side of S-63 on C-34 Canal at Lake Gentry Outfall	C-34 canal/Primary	Tier 2	0	62	0	Nearby stations 34447, CL19273113
CL31273111	Wooden bridge on C-34 canal between S63 and S63A	C-34 canal/Primary	No	0	27	0	Nearby station 59814
CO35253112	CO35253112	Center/Coon Canal	Tier 2	0	100	0	Same as 28089
CREEDYBR	REEDY CREEK BRIDGE AT RT. 531	Reedy Creek/Primary	No	118	95	90	Nearby stations 5068, 26011093
DLMARNCR	ON BRIDGE CROSSING LAKE MARION CREEK ON PONCI NA PROP.N.OFL.	Lake Marion Creek/Primary	Tier 2	93	87	32	Same as 5598
DLONDNCR	ON BRIDGE CROSSING LONDON CR ON PONCIANA PRO N.OF L.HATCHIN	London Creek/Primary	Tier 2	58	59	26	Same as 5599
E_LK_BLVD	Downstream of culvert under East Lake Shore Blvd.	Local canal	No	27	12	0	-
EC-37	CANAL C-37 CONNECTING LAKES HATCHINEHA AND KISSIMMEE AT BEND	C-37 canal/Primary	Tier 2	89	85	30	Same as 5740
ET05253114	ET05253114	Downstream of AjayLake/ Primary	Tier 2	57	81	0	Same as 28092
ET06253113	ET06253113	Jim Branch/Primary	Tier 2	0	167	0	Same as 28094
FANNY_BASS	Downstream of culvert crossing under road	LandRunoff/Local canal	No	47	23	0	26011201
FISH_LAKE	Outfall Fish Lk, SW of Neptune Rd cxs on dwnstrm of Ped Brdg	Partin Canal/Primary	No	43	21	0	Outfall of Fish Lake

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
GATOR_BAY	Ditch front of 4129 Cypress Dr dwnstrm near curve	Local Canal	No	33	16	0	
GENTRYDTCH	Ditch located along the eastern shore line of Lake Gentry.	Local canal	Tier 2	46	56	20	Same as 35821
HL08283014	C-36 on Gardner Cobb btw Lake Cypress and Lake Hatchineha	Outfall of Cypress Lake,C-36 canal/Primary	No	0	57	0	Same as 35798, Downstream stations G4CE0140, 26010078
HL17283022	HL17283022	C-36 canal/Primary	No	0	66	0	G4CE0064, Downstream of Cypress Lake
JIM_BRANCH	Downstream box culvert under Boggy Creek Rd near 4375.	Jim Branch/Primary	No	43	21	0	G4CE0244, Nearby station BC_HIGHPLAINS
JUDGES_DCH	S pmp stat Neptune Rd @ ped brdg Judges Ditch outfall Lk To	Local Canal	Tier 2	41	27	0	-
KISS_VIEW	Kissim Vw ditch E Poinciana culvert cxs, across Camelot Ctry	Local	No	31	15	0	-
KNGHWY_DCH	Ditch at end of King James Road	Local Canal	No	14	6	0	-
KUB009	KISSIMMEE UPPER BASIN, SURFACE WATER 009	Zipper Canal/Primary	Tier 2	54	54	25	Nearby stations G4CE0090, G4CE0119, G4CE0088, G4CE0087, 28426
LG32263114	S-60 on C-33 Canal at Alligator Lake Outfall	C-33 Canal/Primary	No	0	22	0	Nearby stations 34299, LG32263124
LG32263124	Upstream side of S-60 on C33 Canal at Alligator Lake Outfall	C-33 Canal/Primary	Tier 2	0	49	0	Nearby stations 34299, LG32263114
LJACKDSCH	G-111 Manages flows from Lake Jackson to Lake Kissimmee.	Jackson Canal/Primary	Tier 2	67	66	28	Nearby stations 35822, 52959
LT32263013	LT32263013	Local Canal	Tier 2	0	71	0	28084, Nearby stations 26011193, G4CE0001, G4CE0065
MJ01253113	MJ01253113	C-30 canal/Primary	No	0	23	0	Nearby station34300, MJ01253123
MJ01253123	Upstream side of S-57 on C30 Canal 5.2 miles N of Hwy 532	C-30 canal/Primary	Tier 2	0	45	0	Nearby station34300, MJ01253113

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
ML22303313	Ditch discharging to Lake Marian	Lake Marion Marsh canal/Primary	Tier 2	0	18	0	Nearby station 39076
N_GRANADA	At end Granada Blvd, at N outfall to Lake Toho	Land runoff/Local canal to Lake Tohopekaliga/Local canal	No	49	24	0	-
N_STEWART	Pleas Hill Hghts SD, N end Toho Blvd, near 2874 N Stewar	Land runoff/Local canal to Lake Tohopekaliga/Local canal	No	33	17	0	-
NARCOOSEE	Downstream culvert under Narcoosee Rd. South of 1240	Land runoff/Local canal	No	36	19	0	-
ORNGWOOD	Lakeward of Tohopekaliga Dr. between 1	Local canal	No	21	11	0	-
PARTIN_CNL	Off Kings Hwy W (dwnstrm)@ Pedestrian Bridge over Partin Cnl	Partin Canal/Primary	Tier 2	87	61	0	-
PEBBLE_PT	Dwnstrm box culvert under Boggy Creek Rd btw Pebble Pt Eagle	Local Canal	No	43	21	0	-
PH_MHPK	E box culvrt on Pleasant Hill Rd/MHP outfall ditch S of pond	Land runoff/Local canal	No	23	12	0	-
POIN_FIRE	Wside Poinciana Blvd culvert N of fire stat, S Camelot Ctry	Land runoff/Local canal	No	29	14	0	-
QUAIL_RDG	Dwnstrm (s) Osceola Pkwy, W Q Rdg Ph 3, E Brdgwtr Det Pnd	Land runoff/Local canal	No	15	8	0	-
REMINGTON	Upstrm culvert under East Lake Shore Blvd E of Remington GC	Local canal	No	30	14	0	-
ROMCUT	Berm Cut Through	Local canal	No	9	5	5	Same as 34008
ROMOUT	Outflow to Lake Hatchineha	Outflow to Lake Hatchineha/Local Canal	No	9	5	5	Same as 34009
RUNNYMEDE	Dwnstrm box culvert under Rummel Rd @ Lke Runnymede outfall	Lake Runnymede outfall/Local canal	Tier 2	58	42	0	-
S_GRANADA	S on Ridgeway to curve in rd @ PVC into ditch	Land runoff/Local canal	No	39	19	0	-
S65	S-65 SPILLWAY ON LAKE KISSIMMEE AT CANAL C-38	Outlet of lake Kissimmee	Tier 1	220	306	93	Same as 18083

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
TURNBERRY	Downstream culvert under Boggy Crk Rd @ Austin Tindall Park	Local canal	No	40	20	0	-
WPA_CNL	Dwnstrm WPA canal N of CJ Lndng at CMP pipe dwnstrm OCC Rd	Local canal	No	50	25	0	-
28092	ET05253114	Downstream of AjayLake/ Primary	No	73	88	47	Same as ET05253114
24591	BNSHINGLE	Shingle Creek/Primary	No	129	131	129	BNSHINGLE, Nearby station 26011369
28084	LT32263013	Local canal	No	44	73	43	LT32263013, Nearby station G4CE0001, G4CE0065
28094	ET06253113	Jim Branch/Primary	No	62	98	19	Same as ET06253113
28087	AL24263113	Local canal	Tier 2	46	46	25	Same as AL24263113, Nearby station 26011177
G4CE0175	Catfish Creek @ 450m DS of Lake Pierce	Catfish creek/Primary	No	2	1	1	26011453, Downstream of CATFISH
28086	AL34263113	BRICK Canal/Primary	No	56	54	56	Same as AL34263113
28088	AL11263113	C-32G canal/Primary	No	32	31	31	AL11263113, Nearby station 26011176
28089	CO35253112	Center/Coon Canal/Primary	No	40	40	40	CO35253112-Downstream of Lake Center
G4CE0220	Canoe Creek at SR 523 bridge	C-34 canal/Primary	No	2	1	1	Upstream stations CL06283121, 34297
G4CE0244	Jim Branch @ Boggy Creek Rd	Jim Branch/Primary	No	0	0	0	Only DO and water temperature. Nearby station Jim Branch
WEOHYAKAPK CRK1	Weohyakapka Crk; SR60 E of Lake Wales ~3M E of Walk in Wtr R	Weohyakapka Creek/Primary	No	103	52	49	Same as 49001
18083	S65	Outlet of lake Kissimmee	Tier 1	168	214	102	Same as S65
5068	CREEDYBR	Reedy Creek/Primary	Tier 2	112	111	110	CREEDYBR, Nearby station 26011093
3268	BS-59	Downstream of East Lake Tohopekaliga/Primary	Tier 2	111	109	65	Same as BS-59

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
32907	ABOGGN	Boggy Creek/Primary	No	128	129	121	Same as ABOGGN
34297	CL06283111	C-34 canal/Primary	No	47	65	46	Same as CL06283111
35821	GENTRYDTCH	Tributary	No	125	124	62	Same as GENTRYDTCH
5740	EC-37	C-37 canal/Primary	No	135	135	64	Same as EC-37
5599	DLONDNCR	London Creek/Primary	No	84	84	44	Same as DLONDNCR
35822	LJACKDSCH	Jackson Canal/Primary	No	44	44	17	Same as LJACKDSCH
5598	DLMARNCR	Lake Marion Creek/Primary	No	166	165	93	Same as DLMARNCR
34299	LG32263124	C-33 Canal/Primary	No	39	53	38	Same as LG32263124
34300	MJ01253123	C-30 canal/Primary	No	15	30	14	Same as MJ01253123
34009	ROMOUT	Local canal	No	142	142	140	Outflow to drainage field
28426	KUB009	Zipper Canal/Primary	No	30	30	7	Same as KUB009
34008	ROMCUT	Local canal	Tier 2	149	148	148	Same as ROMCUT
G4CE0049	Reedy Creek @ SR 192	Reedy Creek	No	4	2	2	Nearby stations RC-12, RC-13, RC-14, RC-15
C-12E	C-1 Canal approx. 1 mile south of US Hwy. 192	Tributary	Tier 2	143	73	24	Nearby station 26011052
C-14C	C-1 Canal approx. 2.5 miles south on levee from US Hwy. 192	Tributary	No	145	73	24	-
RC-13B	Reedy Creek approx. 1600 feet north of I-4 crossing	Reedy Creek	No	52	26	26	-
RC-24B	L-405 Canal Ext. approx. 500 feet south of C-4 canal 0.75 miles south of Bear Island Road crossing	Reedy Creek	No	142	69	25	-
RC-21C	Reedy Creek northwest side of bridge at US Hwy. 192	Reedy Creek/Primary	No	139	69	26	Nearby stations 26010164, 03090101-RC-01
RC-19C	L-405 Canal Ext. approx. 900 feet north of Western Way crossing	Reedy Creek	No	139	70	25	Upstream stations 26011072,42172
RC-13H	Reedy Creek approx. 2500 ft upstream of RC-14	Reedy Creek	Tier 2	46	23	23	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
52959	Z5-CN-12007 JACKSON CANAL	Jackson Canal/Primary	No	2	1	0	Upstream station is LJACKDSCH
G4CE0120	London Creek/Hatchineha Drain	London Creek/Primary	No	2	1	1	Upstream station is DLONDNCR
XDC	Lake Conway Daetwyler Weir	Local Canal	No	30	16	5	Lake Conway Outfall
XMYJNCNLNE	Lake Mary Jane ?ó?é¼?Ç£ Canal Northeast site	Disston Canal/Primary	No	11	11	5	-
RC-13C	Approximately 540 feet southeast of I-4 on Reedy Creek	Reedy Creek/Primary	No	41	21	21	Nearby station 26010970, G4CE0137
SCS	Shingle Creek Sand Lake Road north side wetland area	Shingle Creek/Primary	No	38	39	20	Nearby station 26010001
53187	Z5-LR-12024 LAKE MARION CREEK	Lake Marion Creek/Primary	No	2	1	0	Nearby station MARION CRK1
G4CE0008	Cypress Creek @ SR 535	Tributary	No	9	5	4	26010871
G4CE0157	Upper Cypress Creek @ Jacaranda	Local canal	No	16	8	7	Nearby station is C-5
SCP	Shingle Creek Headwaters end of S McKinley Ave.	Tributary	No	8	8	2	-
G4CE0168	Lake Hatchineha Drain downstream of drainage field	Local canal	No	28	15	10	To the Lake Hatchineha
G4CE0173	Shingle Creek @ 775m US of Lake Toho	Shingle Creek/Primary	No	2	1	1	Upstream station is OSC-SHGLECR-2-1
G4CE0167	Dead River @ 1250 m north of Lake Hatchineha	DEAD River/Primary	No	27	14	12	-
56584	Z4-SS-13018 HORSE CREEK	Horse Creek/Primary	No	2	1	0	Nearby 26010018
35798	HL08283014	C-36 canal/Primary	No	72	70	70	Same as HL08283014
OSC-SHGLECR-5-1	Osceola-Shingle Creek-5-1	Shingle Creek/Primary	No	18	18	0	SCD
OSC-SHGLECR-6-1	Osceola-Shingle Creek-6-1	Shingle Creek/Primary	No	19	19	0	Upstream station is SCD
OSC-SHGLECR-4-1	Osceola-Shingle Creek-4-1	Shingle Creek/Primary	No	19	19	0	Downstream station MS 17, 62268
XCNLNWCON	Canal Northwest of Lake Conway	Tributary	No	111	60	0	-
XCNLNEJESS	Canal Northeast of Lake Jessamine	Tributary	No	108	60	0	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
34447	CL19273123	C-34 canal/Primary	No	42	42	42	Same as CL19273123
48821	ML22303311	Lake Marion Marsh canal/Primary	Tier 2	13	13	13	Same as ML22303311
49001	LR14302912	Weohyakapka Creek/Primary	Tier 2	86	84	85	Nearby station CRK1
39077	AJ33243122	Downstream of Lake HART	No	54	52	54	Same as AJ33243122
39076	ML22303313	Local canal	Tier 2	48	51	48	Same as ML22303313
BC_ CONSERV I	Boggy Creek - Conserv I	Boggy Creek/Primary	No	34	17	16	Nearby station BCB, BC_CONSERV I
48562	LK04313114	Local canal	Tier 2	22	22	5	Same as LK04313114
SCG	Shingle Creek Oakridge Rd. Tropical Drive	Shingle Creek/Primary	No	23	24	12	Nearby station SCO
G4CE0198	Shingle Creek Headwaters @ 370m from McLeod Rd	Local canal	No	2	1	1	Upstream station SCH
RC-13L	Approximately 840 ft. upstream of S-40 along Reedy Creek south of the C-1 confluence	Reedy Creek canal/Secondary	Tier 2	72	36	10	-
G4CE0201	Hart Branch @ 100m DS of Boardwalk	Hart Branch/Primary	No	2	1	1	Downstream stations G4CE0095, 26011395,26011396
57982	Z5-SL-14006 UNNAMED SMALL LAKE		No	2	1	0	
G4CE0207	Horse Creek @ 547	Horse Creek/Primary	No	2	1	1	Horse CRK2, Nearby station 26010030
G4CE0208	Horse Creek 85m S of Horseshoe Creek Rd	Horse Creek/Primary	No	0	0	0	Nearby station 26010018
G4CE0219	Bass Slough 10m N of Neptune Rd.	Bass Slough/Primary	No	4	2	2	Nearby station 26010015
HABOC0006	Lake Speer - SE boat ramp	To lake Speer	No	4	2	2	Nearby station HABCE0098
HABCE0098	Lake Speer - SE boat ramp	To lake Speer	No	12	6	6	Nearby station HABOC0006
59814	Z5-CN-16007 CANOE CREEK	C-34 canal/Primary	No	2	1	0	Nearby station CL31273111
BC_TCS	Boggy Creek - TerminalCServiceRd	Local canal	No	31	19	16	-

Station ID	Station Name	Type	BMAP Station	TN Samples	TP Samples	PO_4 Samples	Notes
SCL	SCL	Shingle Creek/Primary	No	15	15	8	Nearby station SC_W GLENBARR
60221	Z5-LR-16003 TIGER CREEK	Tiger Creek East/Primary	No	2	1	0	Downstream station G4CE0070
WEOHYAKAPKA CRK1	Weohyakapka Crk1	Weohyakapka Creek/Primary	No	4	2	2	Same as Weohyakapka Crk1
HAB-SW-0024	Kiss River - Near Camp Mack Ramp	EC-37 canal/Primary	No	2	1	1	Nearby station EC-37
62268	Z5-LR-17014 SHINGLE CREEK	Shingle Creek/Primary	No	2	1	0	Upstream stations MS 17,OSC-SHGLECR-4-1
PA10313112	Packingham Slough-Lake Kissimmee discharge west of S-65	C-38 canal/ Lake Kissimmee outlet	Tier 2	0	113	0	Nearby station 28256
28256	PA10313112	C-38 canal/ Lake Kissimmee outlet	Tier 2	56	60	38	Same as PA10313112
CL18273011	Upstream of S-61 on C35 @ Lk Tohopekaliga Outfall	Canal	Tier 2	66	174	66	-

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