US Army Corps of Engineers

**APPROVED JURISDICTIONAL DETERMINATION FORM**
**U.S. Army Corps of Engineers**

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

## SECTION I: BACKGROUND INFORMATION

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): November 20, 2018**

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER: SAJ-2017-00767**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State: FL County/parish/borough: Sumter City: Sumterville
Center coordinates of site (lat/long in degree decimal format): Lat. 28.791108° **N**, Long. -82.083481° **W**.
Universal Transverse Mercator:
Name of nearest waterbody: Lake Panasoffkee

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Lake Panasoffkee
Name of watershed or Hydrologic Unit Code (HUC): Lake Panasoffkee (HUC 0310020807)
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

**D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: November 20, 2018
☒ Field Determination. Date(s): April 5, 2018 and June 5, 2018

## SECTION II: SUMMARY OF FINDINGS

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION.**

There **Are** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☒ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: Throughout the late 1800s and the first half of this century, Lake Panasoffkee played an important role in the regional economy as a shipping port for timber, citrus, and other regional goods (SWFMD 2000).

**B. CWA SECTION 404 DETERMINATION OF JURISDICTION.**

There **are and are not** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☒ TNWs, including territorial seas
   - ☒ Wetlands adjacent to TNWs
   - ☒ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: linear feet: width (ft) and/or 7.45 acres.
   Wetlands: 29.56 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **Wetland 5, 11, 23, and 27 (for a total of 0.1 ac) are not considered to be wetlands for the purposes of Section 404 of the Clean Water Act (CWA). For a wetland to be regulated under the CWA it must meet all three criteria for soils, vegetation, and hydrology (as defined using the 1987 Corps of Engineers Wetlands Delineation Manual and Regional Supllements). Subject wetlands do not meet all three criteria to be considred for jurisdiction**.

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

## SECTION III: CWA ANALYSIS

### A. TNWs AND WETLANDS ADJACENT TO TNWs

**The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below**.

**1. TNW**

Identify TNW: **Lake Panasoffkee**.

Summarize rationale supporting determination: Lake Panasoffkee is the third largest (4,820 acres) of the 1,800 lakes in west central Florida (SWFMD 2000). It is designated as an Outstanding Florida Waterbody and is considered a headwater to the Withlacoochee River. The TNW is nationally recognized as one of Florida's most producted lakes for the redear sunfish fishery and supports both intrastate and interstate commerce. Currently the lake serves as a vital recreational freshwater fishing resource, not only for the county but the entire region. Freshwater fishing contributes more than $1.4 billion to the Florida economy, generating $37.4 million in taxes annually and 18,873 jobs (SWFMD 2000).

**2. Wetland adjacent to TNW**

Summarize rationale supporting conclusion that wetland is "adjacent": Historically the forested wetland system identified as Wetland 1 on Figure 2 was continguous with the forested, flood plain swamp of Lake Panasoffkee, the TNW (FIGURE 6). Fill from construction of I75 and the culvert system created a man-made barrier between Wetland 1 and TNW. Although, the wetland is currently separated by a man-made barrier (I-75 and culvert system), there is an unbroken surface and shallow sub-surface connection (see Section III.B.1.c.) to the TNW. This hydrologic connection may be intermittent but the proximity to the TNW is reasonably close, supporting the science-based inference that such wetlands have an ecological interconnection with jurisdictional waters. Wetland 1 is within 1 mile from the forested, wetland swamp that makes up the southeast end of the TNW (SWFMD 2000).

### B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

**This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.**

**The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.**

**A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.**

**If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.**

**1. Characteristics of non-TNWs that flow directly or indirectly into TNW**

**(i) General Area Conditions:**

Watershed size: 175,287**acres**
Drainage area: As described by Taylor (1977) 268,800 **acres**
Average annual rainfall: 51.55 inches
Average annual snowfall: inches

**(ii) Physical Characteristics:**

(a) Relationship with TNW:
☒ Tributary flows directly into TNW.

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **1 (or less)** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1 (or less)** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: No.

Identify flow route to TNW[5]: Figure 3 shows flow route to TNW. Surface water flows from Wetland 1 through a man-made culvert system that runs under I75 and continues flowing northwest through a forested, flood plain swamp that is contiguous with the eastern shoreline of TNW (Lake Panasoffkee). Figure 4 shows water flowing through a forested, flood plain swamp (Wetland 1/RPW) and culvert system under I75.
Tributary stream order, if known: .

(b) General Tributary Characteristics (check all that apply):
**Tributary** is: ☒ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: Historically the forested, flood plain swamp was continguous with Lake Panasoffkee, the TNW. Fill from construction of I75 and the culvert system created a man-made barrier between RPW and TNW. Historical wetlands on site were manipulated for agricultural land use. A series of wetland ponds and ditches were created, utitilizing the foot print of historical wetlands, to drain water on the site into surface water ponds and the RPW. Figure 5 shows a 1960 aerial image of wetlands on the property prior to construction of I75 as compared to a 2009 aerial image that shows ponds and ditches that were created.

**Tributary** properties with respect to top of bank (estimate):
Average width: 250 feet
Average depth: 2.5 feet
Average side slopes: **4:1 (or greater).**

Primary tributary substrate composition (check all that apply):
☐ Silts ☒ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☒ Muck
☐ Bedrock ☒ Vegetation. Type/% cover: Forested with 90% cover dominated by bald and pond cypress, black gum, and maple.
☒ Other. Explain: Parent material is sandy marine deposits.

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Good.
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Relatively straight**
Tributary gradient (approximate average slope): 5 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: Water flow typically follows rainfall patterns. It rains on average 71 days a year in Sumter County, FL with a pronounced wet (July-Sept) and dry (Oct-June) season (http://www.usa.com/sumter-county-fl-weather.htm). Water flow within the RPW was observed during both field site visits on April 5 and June 5, 2018.
Other information on duration and volume: Area is mapped as Pompano fine sand (35), frequently ponded, 0-1% slopes, with a hydric rating of 95% (Figure 6). The Pompano series consists of very poorly drained soils that formed in thick beds of sandy marine sediments. Pompano soils are on flatwoods, in low broad flats, and to a lesser extent, depressions, drainage ways, and flood plains, on marine terraces. Depth to seasonal high water table is 0 to 12 inches of the surface for about 2 to 6 months during most years, and 10 to 30 inches most of the rest of the year. Depressional phases are ponded 0-24 inches about 3 months each year. (https://soilseries.sc.egov.usda.gov/OSD_Docs/P/POMPANO.html). .

Surface flow is: **Discrete.** Characteristics: A low lying, depressional area.

Subsurface flow: **Yes**. Explain findings: Groundwater well data, soil properties, and hydrogeology within the review area demonstrate a shallow subsurface flow from the RPW and wetlands, within the review area, to the TNW. The Lake Panasoffkee watershed lacks a well-developed surface-water drainage system because rainfall rapidly infiltrates the sandy soils in the uplands and recharges the shallow hydrogeologic units below the surface (McBride et al 2010). The principle hydrogeologic units in the review area are the Surficial Aquifer System (SAS), consisting of undifferentiated sands and clays, ovelrying the Upper Floridan Aquifer (UFA), comprised primarily of the Ocala Limestone. The karst nature of the Ocala Limestone and the lack of an effective confining unit between the SAS and UFA allows for direct hydraulic and geochemical interactions between the surface-water and groundwater systems. McBride et al (2010) found that in the Lake Panasoffkee watershed, the UFA contributes water to, and interacts with, the

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

surface-water system and the SAS. A USGS well (identification #284759082054101, ROMP LP-6 near Colman, FL) located within the review area, just 1 miles northwest of the property (Figure 3) was found to have water levels at 10-20 feet below the ground surface; the SAS was found to be 0-24 feet below land surface and the Floridan aquifer system was found to have a total depth of 34 feet below land surface (McBride et al 2010 and Trommer et al 2009).

The presence of hydric and partially hydric soils in the review area is an indicator of water storage and the high saturated hydraulic conductivity (Ksat) and poor drainage class (https://casoilrsource.awr.ucdavis.edu), for the hydric soils, further demonstrate a hydraulic connection via shallow subsurface flow between the RPW and wetlands, within the review area, to the TNW. Of the 37 soil map units (excluding water) in the review area, 73% (or 27) of the soil map units are either hydric with a 100% hydric rating or partially hydric with a 1-99% rating. (Figure 6). An estimated 78% of the soil map units identified within the review area have a drainage class of "poorly drained" and 18% of the soils within the review area are "well drained." This shows that a majority of the soils in the review area are saturated at shallow depths for significant periods during the growing season. Saturated conditions in poorly drained soils are caused by a slowly pervious layer within the soil profile, a high water table, seepage from continuous rainfall, or a combination of these factors (SAJ-2009-00833 Landstone Communities DRI, 9 Dec 2011). Additionally, the majority of the soils within the review area have a moderately high to very high Ksat value which means that pores in the saturated soil transmits water with ease. Of the 37 soil map units (excluding water) identified within the review area, 2% of the soil map units have a very high (2:100 µmis) Ksat value, 92% of the soil map units have a high (10 to <100 µmis) Ksat value, and one map unit does not have a classification (Figure 7).

Thus, the RPW, the wetlands in the review area, the surficial aquifer, and the Floridan aquifer system are hydraulically connected via shallow subsurface flow. The geology of the review area indicates the water table is at a depth of 10-30 inches of the surface for about 2 to 6 months during most years (https://soilseries.sc.egov.usda.gov/OSD_Docs/P/POMPANO.html and McBride et al 2010) and hydric soil properties show water storage capacity, poor drainage, and the ability to transmit water when subjected to a hydraulic gradient.
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☒ Dye (or other) test performed: Strontium isotope data (McBride et al 2010) confirmed that rainfall is the primary source of groundwater recharge within the Lake Panasoffkee watershed and that the watershed drainage is primarily internal. The three distinct water types that occur within the Lake Panasoffkee watershed (calcium-bicarbonate type waters, mixed calcium-bicarbonate/calcium-sulfate type waters, and ground water samples composed of calcium-sulfate type water) indicate that the UFA contributes inflow to the overlying hydrogeologic units and surface waters within the watershed (McBride et al 2010).

Tributary has (check all that apply):

- ☐ Bed and banks
- ☒ OHWM[6] (check all indicators that apply):
  - ☐ clear, natural line impressed on the bank
  - ☒ changes in the character of soil
  - ☐ shelving
  - ☒ vegetation matted down, bent, or absent
  - ☒ leaf litter disturbed or washed away
  - ☒ sediment deposition
  - ☒ water staining
  - ☐ other (list):
  - ☐ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☐ multiple observed or predicted flow events
  - ☒ abrupt change in plant community
- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

- ☐ High Tide Line indicated by:
  - ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☐ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

**(iii) Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Water color was observed to be a tea color with a yellow-brown hue, most likely caused by natural dissolved organic acids such as tannins and lignins and minerals such as inosluble oxidized iron and manganese which are commonly produced under anerobic conditions. .

Identify specific pollutants, if known: Nutrient pollutants such as nitrogen and phosphorus are common with cattle operations. The property is currently being used for cattle operations.

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

**(iv) Biological Characteristics. Channel supports (check all that apply):**

☐ Riparian corridor. Characteristics (type, average width): .

☐ Wetland fringe. Characteristics: .

☒ Habitat for:

☒ Federally Listed species. Explain findings: Potential to be used by American alligator and the Wood Stork. American alligators have been found in the emergent and wooded wetlands along the shoreline of Lake Panasoffkee (Wood et al 1985). Since the wetland type of W1 is the same as the woodland wetlands along the shoreline of Lake Panasoffkee it can be assumed that W1 has the potential to be used by alligators. W1 is located within 2 miles of the CFA for the Wood stork nesting colony named 611004A (Figure 8). Wood storks typically forage in cypress heads and swamp sloughs and construct their nests in medium to tall trees that occur in stands located in swamps surrounded by relatively broad expanses of open water. W1 fits these characteristics, specifically tall trees located in a swamp surrounded by Lake Panasoffkee, a broad expanse of open water, and a depression in a cypress head and swamp slough. Thus, it can be assumed that W1 has the potential to be used by the Wood stork for nesting and foraging.

☐ Fish/spawn areas. Explain findings: .

☒ Other environmentally-sensitive species. Explain findings: Wildlife observations during field investigations (BDA 2018) included southeastern American kestral and Florida sandhill crane. In addition, the tributary and wetlands in the area have the potential to be used by the Bald eagle, Gopher tortoise, Florida pine snake, Florida burrowing owl, Little blue heron, Tricolored heron, and Sherman's fox squirrel (BDA 2018). Although, the Southeastern American kestrel, Gopher tortoise, Florida pine snake, Burrowing owl, and Shermans fox squirrel are upland species, W1 provides habitat they need for feeding, breeding, and nesting. For example, aquatic vegetation in wetlands supplies birds and other wildlife with food and foraging grounds, nest-building materials, nursery areas, and shelter from weather and predation. Snakes spend much of their lives in wetlands feeding on aquatic invertebrates and turtles eat aquatic plants and sleep and hide among them as well. Mammals may not be abundant in wetlands but they do live near wetlands where they find abundant prey.

☒ Aquatic/wildlife diversity. Explain findings: Wildlife observations during field investigations (BDA 2018) included. bird species (i.e. mouring dove, easter meadowlark, American crow, turkey vulture, black vulture, nine-banded armadilo, blue-gray gnatctcer, northern cardinal, wild turkey, little blue heron, southern black racer, northern mockingbird, and red-shouldered hawk) and a squirrel treefrog utilizing wetlands and upland habitats in the review area. In addition, nutrient/pollutant filtration functions of the tributary/RPW are important for maintaining water quality for aquatic flora and fauna in Lake Panasoffkee. Lake Panasoffkee is an important recreational freshwater fishing resource and is especially known for redear sunfish, blue gill, and bass fishery resource.

**2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

**(i) Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: 24.13acres

Wetland type. Explain:Palustrine, emergent persistent and aquatic bed rooted vascular.

Wetland quality. Explain: low to moderate.

Project wetlands cross or serve as state boundaries. Explain: N/A.

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: Historical wetlands on site were manipulated for agricultural land use. A series of wetland ponds and ditches were created, utitilizing the foot print of historical wetlands, to drain water on the site into surface water ponds and the RPW (Figure 5). Water flow typically follows rainfall patterns. It rains on average 71 days a year in Sumter County, FL with a pronounced wet (July-Sept) and dry (Oct-June) season (http://www.usa.com/sumter-county-fl-weather.htm) .

Surface flow is**: Discrete**

Characteristics: Field site visits revealed that SW2 directly abuts the RPW (Wetland 1) via a man made ditch. In addition, SW2 was connected to SW6, SW3, W24, SW7, W13, and SW13 via ditching and concrete culverts.

Subsurface flow: **Yes**. Explain findings: The RPW, the wetlands in the review area, the surficial aquifer, and the Floridan aquifer system are hydraulically connected via shallow subsurface flow. See section III.B.1(ii)c. above. The geology of the review area indicates the water table is at a depth of 10-30 inches of the surface for about 2 to 6 months during most years (https://soilseries.sc.egov.usda.gov/OSD_Docs/P/POMPANO.html and McBride et al 2010). Hydric soil properties show water storage capacity, poor drainage, and the ability to transmit water when subjected to a hydraulic gradient. .

☒ Dye (or other) test performed: Strontium isotope data (McBride et al 2010) confirmed that rainfall is the primary source of groundwater recharge within the Lake Panasoffkee watershed and that the watershed drainage is primarily internal. The three distinct water types that occur within the Lake Panasoffkee watershed (calcium-bicarbonate type waters, mixed calcium-bicarbonate/calcium-sulfate type waters, and ground water samples composed of calcium-sulfate type water) indicate that the UFA contributes inflow to the overlying hydrogeologic units and surface waters within the watershed (McBride et al 2010).

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting

☒ Not directly abutting

☒ Discrete wetland hydrologic connection. Explain: Surface flow via ditches and culverts and shallow subsurface flow demonstrated by well data, soil properties, and hydrogeology. See section III.B.1(ii)c. above.

☒ Ecological connection. Explain: Through movements of plant and animals via response to complex habitat requirements and biotic connections (Leibowitz 2003). For example, many animals, including amphibians, require both aquatic and terrestrial habitat at different life history stages. In addition, biological functions of wetlands and surface waters within the review area filter and remove pollutants and nutrients from through-flowing water (Harper et al 1986 and Johengen & LaRock 1993), improving the water quality of fresh water being discharged into RPW and downstream into TNW.

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **1-2** river miles from TNW.

Project waters are **1-2** aerial (straight) miles from TNW.

Flow is from: **Wetland to/from navigable waters.**

Estimate approximate location of wetland as within the **50 - 100-year** floodplain.

**(ii) Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Water color was observed to be a tea color with a yellow-brown hue, most likely caused by natural dissolved organic acids such as tannins and lignins and minerals such as inosluble oxidized iron and manganese which are commonly produced under anerobic conditions.

Identify specific pollutants, if known: Nutrient pollutants such as nitrogen and phosphorus are common with cattle operations. The property is currently being used for cattle operations.

**(iii) Biological Characteristics. Wetland supports (check all that apply):**

☐ Riparian buffer. Characteristics (type, average width): .

☒ Vegetation type/percent cover. Explain:Palustrine, emergent persistent and aquatic bed rooted vascular.

☒ Habitat for:

☒ Federally Listed species. Explain findings:Potential to be used by American alligator and the Wood Stork because American alligators have been found in the emergent and wooded wetlands along the shoreline of Lake Panasoffkee (Wood et al 1985) and there are two woodstork nesting colonies within 17 miles of the property (Figure 8). The FWS recognizes a 18.6 core foraging area (CFA) around all known wood stork colonies and considers small ponds and seasanally flooded wetlands as Suitable Foraging Habitat (SFH).

☒ Fish/spawn areas. Explain findings: .

☒ Other environmentally-sensitive species. Explain findings: Wildlife observations during field investigations (BDA 2018) included southeastern American kestral and Florida sandhill crane, which are Florida state listed species. In addition, the tributary and wetlands in the area have the potential to be used by the Bald eagle, Gopher tortoise, Florida pine snake, Florida burrowing owl, Little blue heron, Tricolored heron, and Sherman's fox squirrel (BDA 2018). Although, the Southeastern American kestrel, Gopher tortoise, Florida pine snake, Burrowing owl, and Shermans fox squirrel are upland species, adjacent wetlands provide habitat they need for feeding, breeding, and nesting. For example, aquatic vegetation in wetlands supplies birds and other wildlife with food and foraging grounds, nest-building materials, nursery areas, and shelter from weather and predation. Snakes spend much of their lives in wetlands feeding on aquatic invertebrates and turtles eat aquatic plants and sleep and hide among them as well. Mammals may not be abundant in wetlands but they do live near wetlands where they find abundant prey.

☒ Aquatic/wildlife diversity. Explain findings:Wildlife observations during field investigations (BDA 2018) included bird species (i.e. mouring dove, easter meadowlark, American crow, turkey vulture, black vulture, nine-banded armadilo, blue-gray gnatctcer, northern cardinal, wild turkey, little blue heron, southern black racer, northern mockingbird, and red-shouldered hawk) and a squirrel treefrog utilizing wetlands and upland habitats in the review area. In addition, nutrient/pollutant filtration functions of the tributary/RPW are important for maintaining water qulaity for aquatic flora and fauna in Lake Panasoffkee. Lake Panasoffkee is an important recreational freshwater fishing resource and is especially known for redear sunfish, blue gill, and bass fishery resource.

**3. Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **30 (or more)**

Approximately ( 16.69 ac of wetlands and surface waters [this includes W2, W3, W4, W6, W12, W10, W7, W9, W8, W16, W21, W20, W18, W19, W17, W31, W30, W28, W25, W26, W32, W29 and SW1, SW30/31, SW5, and SW4] and 7.44 ac of abutting wetlands and surface waters [this includes SW2, SW6, SW3, W24, SW7, W13, and SW13]). Findings from field site visits and a review of the historical imagery showed that "abutting" aquatic resources labeled as ditches and surface waters are better described as a linear wetland that has been altered by construction of ditches and the placement of culverts.

For each wetland, specify the following:

| Directly abuts? (Y/N) | Size (in acres) | Directly abuts? (Y/N) | Size (in acres) |
|---|---|---|---|
| SW2 (Y) | 1.02 ac | | |
| SW6 (Y) | 2.19 ac | | |
| SW3 (Y) | 2.4 ac | | |
| W24 (Y) | 0.4 ac | | |
| SW7 (Y) | 0.28 ac | | |
| W13 (Y) | 0.79 ac | | |
| SW13 (Y) | 0.36 ac | | |
| | | | |
| W2 (N) | 0.5 ac | | |
| W3 (N) | 0.36 ac | | |
| W4 (N) | 0.04 ac | | |
| W6 (N) | 0.07 ac | | |
| W12 (N) | 0.74 ac | | |
| W10 (N) | 5.48 ac | | |
| W7 (N) | 1.74 ac | | |
| W9 (N) | 0.29 ac | | |
| W8 (N) | 0.98 ac | | |
| W16 (N) | 0.11 ac | | |
| W21 (N) | 0.06 ac | | |
| W20 (N) | 0.03 ac | | |
| W18 (N) | 0.02 ac | | |
| W19 (N) | 0.03 ac | | |
| W17 (N) | 0.04 ac | | |
| W31 (N) | 1.40 ac | | |
| W30 (N) | 0.50 ac | | |
| W28 (N) | 0.24 ac | | |
| W25 (N) | 0.04 ac | | |
| W26 (N) | 0.38 ac | | |
| W32 (N) | 0.03 ac | | |
| W29 (N) | 0.34 ac | | |
| | | | |
| SW1 (N) | 0.57 ac | | |
| SW30/31 (N) | 0.95 ac | | |
| SW30 (N) | 0.20 ac | | |
| SW5 (N) | 0.31 ac | | |
| SW4 (N) | 1.24 ac | | |

Summarize overall biological, chemical and physical functions being performed: Contributes freshwater inflow into TNW (McBride et al 2010), filters and removes sediments and nutrients from watershed (Harper et al 1986 and Johengen & LaRock 1993), ultimately reducing nutrient loading into TNW. Maintains water flow within watershed, providing temporary storage of surface water to reduce local flooding (Smith et al 1995). Provides breeding, nesting, and foraging habitat for insects, reptiles, birds, amphibians, mollusks, and mammals (Haag and Lee 2010).

## C. SIGNIFICANT NEXUS DETERMINATION

**A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.**

**Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:**

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

**Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:**

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

   **Significant nexus findings for RPW (W1); wetlands directly abutting RPW (SW2, SW6, SW3, W24, SW7, W13, and SW13); and wetlands adjacent to RPW but that do not directly abut the RPW (W2, W3, W4, W6, W12, W10, W7, W9, W8, W16, W21, W20, W18, W19, W17, W31, W30, W28, W25, W26, W32, W29, SW1, SW30/31, SW30, SW5, and SW4), that flows directly into TNW**: Subject RPW (Wetland 1) and abutting Wetlands/Surface Waters, in combination with Subject Wetlands (adjacent wetlands and surface waters), have more than an insubstantial or speculative effect on the physical, chemical, and biological integrity of the downstream TNW (Lake Panasoffkee).

   **PHYSICAL**-RPW contributes fresh water in-flow into Lake Panasoffkee (TNW), via surface water and shallow subsurface flow as shown in Figures 3, 4, and 5 and discussed in Section III.B.1(ii)c above. Wetland functions of Subject Wetlands contribute to maintaining water flow (Smith et al 1995) in the watershed (storing flood waters and recharging ground water), directly influencing fresh water flow rates into RPW and downstream to TNW. The review area falls within both the surface water and groundwater contribution area of the TNW. Due to the karst topography and well developed internal drainage system the actual surface-water drainage basin for the Lake Panasoffkee watershed is 62.2 square miles, with Little Jones Creek and Shady Brook being the primary tributaries (Figure 9). However, McBride et al (2010) found that during the year 2007-2008, groundwater from the UFA contributed 68% of the water in flow to the TNW; identifying a groundwater contribution area for the TNW that is 192 square miles and extends 15 miles southeast and 5 miles northeast of Lake Panaasoffkee (Figure 10).

   **CHEMICAL**-Pollutant and nutrient loading into TNW is directly affected by the quality of discharge from RPW and Subject Wetlands. The RPW and Subject Wetlands receive rainfall and stormwater runoff from adjacent areas and transports water and sediments via surface and shallow subsurface flow, downstream into the TNW. Water quality data from a water sampling point in the Shady Brook tributary (USGS #02312667 Shady Brook, Near Sumterville) shows seasonal variations in nutrient (nitrogen and phosphorous) levels, exhibiting excess levels of nutrients during the wet season (http://www.lake.wateratlas.usf.edu and https://waterdata.usgs.gov/nwis/inventory). Since the RPW functions as a tributary collecting and conveying water directly into the TNW, it can be assumed that water quality in the RPW is similar to that of the Shady Brook tributary. Thus, higher than normal flows within the RPW have the potential to be associated with pollutant and excess nutrient discharge into TNW. In addition, studies have shown that surface inflow contributes about 51% of total nitrogen and 56% of the total phosphorus input into TNW, while groundwater appears to contribute about 34% of the annual total phosphorus input and 40% of total nitrogen input to the TNW (SWFMD 2000). Since rainfall is the primary source of groundwater recharge and Subject Wetlands provide water storage and ground water recharge, wetland functions of Subject Wetlands filter and remove pollutants (bacteria, pesticides, metals, petroleum by-products) and nutrients from through-flowing water (Harper et al 1986 and Johengen & LaRock 1993), improving the water quality of fresh water being discharged into RPW (via surface and subsurface flow) and downstream into TNW.

   **BIOLOGICAL-**Water quality within the RPW and Subject Wetlands directly affects the biological integrity of the downstream TNW. The functions of the RPW and the Subject Wetlands provide nutrient and pollutant filtration necessary for maintenance of water quality in the TNW. The TNW is nationally recognized as one of Florida's most productive lakes for the redear sunfish fishery (SWFMD 2000) and is located within the core foraging area of the federally endangered Wood Stork (Figure 8). Good water quality in the TNW is essential for the health of the freshwater sport fishery and survival of environmentally sensitive flora and fauna. The TNW is an Outstanding Florida Water body. Water quality is good and is attributed to the substantial groundwater flows into the lake from the Floridan aquifer (SWFWM 2000). However, groundwater inflow is a major contributor to sediment which fills the lake. The groundwater carries large amounts of dissolved calcium carbonate that mixes with the lake water and

solidifies, producing sediments which settle on the lake bottom covering fish-spawning areas and promoting increased shoreline vegetation and tussock formations, ultimately impacting the lakes fishery, recreation, and navigation (SWFWM 2000).

The RPW and Subject Wetlands provide water storage which is essential in supporting a diverse assemblage of flora and fauna that serve as food for fish, birds, and mammals in the review area and TNW (Haag & Lee 2010). Two Bald Eagle nests (SU011 and SU036) are located within 1.5 miles of the project site and are likely to forage within the review area. In addition the northern half of the TNW falls within the Core Foraging Area (CFA) for the Wood stork nesting colony named 611004 (Figure 8). The flood water storage and nutrient/pollutant filtration functions of the RPW and Subject Wetlands are important to maintaining the biological integrity of the freshwater and estuarine habitat of the TNW to be utilized by the Wood stork for nesting, roosting, and foraging (https://www.fws.gov/northflorida/WoodStorks/wood-storks.htm).

**D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):**

**1. TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
☒ TNWs: linear feet width (ft), Or, 4,820 acres.
☒ Wetlands adjacent to TNWs: 13.42 acres of wetlands and 3.27 ac of surface waters.

**2. RPWs that flow directly or indirectly into TNWs.**
☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
☒ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: Although, W1 is not an official tributary of the TNW, it exhibits the appropriate hydraulic connection to the TNW, as well as sufficient volume, duration, and frequency of flow to be characterized as an RPW that is a non-navigable tributary of the TNW. See Enclosed MFR for additional information. Based on field site visit observations and technical information available for the site, it is reasonable to consider that 1) W1 supports water flow year-round or has a continous flow at least seasonally typically following local rainfall patterns and 2) W1 currently functions as a tributary collecting and conveying water directly into the TNW.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

**3. Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

**4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☒ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☒ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: Field site visits revealed that SW2 directly abuts the RPW (Wetland 1) via a man made ditch. In addition, SW2 was connected to SW6, SW3, W24, SW7, W13, and SW13 via ditching and concrete culverts (Figure 2).

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

**5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

[8]See Footnote # 3.

☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

**6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

**7. Impoundments of jurisdictional waters.[9]**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

**E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]**

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

**Identify water body and summarize rationale supporting determination:** .

Provide estimates for jurisdictional waters in the review area (check all that apply):

☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

**F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**

☒ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).

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[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

**[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD (check all that apply -** checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☐ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report.
☒ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: .
  ☒ USGS NHD data.
  ☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: .
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☒ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☐ Aerial (Name & Date): .
  or ☐ Other (Name & Date): .
☒ Previous determination(s). File no. and date of response letter: SAJ-2009-00833 Landstone Communities DRI, 9 Dec 2011..
☐ Applicable/supporting case law: .
☒ Applicable/supporting scientific literature: See below.
☒ Other information (please specify):

Applicable/supporting scientific literature:


BDA. 2018. U.S. Army Corps of Engineers, Individual Permit Application for Wade Property, SAJ-2017-00767. Application submitted to Tampa Permits Section on 23 April 2018.

Haag, K. and Lee, T. 2010. Hydrology and Ecology of Freshwater Wetlands in Central Florida-A Primer. Prepared in cooperation with the St. Johns River Water Management District, the Southwest Florida Water Management District and Tampa Bay Water. U.S. Department of the Interior, U.S. Geological Survey.

Harper, H., Wanielista, M., Baker, D., Fries, B., and Livingston, E. 1986. Treatment Efficiencies for Residential Stormwater Runoff in a Hardwood Wetland. Lake and Reservoir Management. 2:1, 351-356.

http://www.usa.com/sumter-county-fl-weather.htm. Website accessed on August 13, 2018.

https://www.fws.gov/northflorida/WoodStorks/wood-storks.htm. Website access on August 24, 2018.

https://casoilresource.lawr.ucdavis.edu. USDA NRCS Soil Web. Website accessed on August 13, 2018.

http://www.lake.wateratlas.usf.edu. Website accessed on July 13, 2018.

https://waterdata.usgs.gov/nwis/inventory. Website accessed on July 13, 2018.

https://soilseries.sc.egov.usda.gov/OSD_Docs/P/POMPANO.html website access on November 20, 2018

Johengen, T. and LaRock, P. 1993. Quantifying Nutrient Removal Processes Within a Constructed Wetland Designed to Treat Urban. Stormwater Runoff. Ecological Engineering, 2(1993) 347-366.

Leibowitz, S. 2003. Isolated Wetlands and Their Functions: An Ecological Perspective. WETLANDS, Vol. 23, No. 3, pp. 517-531.

McBride W.S., Bellino, C, J., Swancar, A. Hydrology, Water Budget, and Water Chemistry of Lake Panasoffkee, West-Central Florida. Scientific Investigations Report 2010-5237. US Deparmtne of the Interior and US Geological Survey.

Smith. RD., Ammann, A., Bartoldus, C., and Brinson, M.M. 1995. An Approach for Assessing Wetland Functions Using Hydrogeomorphic Classification, Reference Wetlands, and Functional Incies, Wetland Research Program Technical Report, USACE.

SWFMD. 2000. Lake Panasoffkee Surface Water Improvement and Management Plan.

Trommer, J.T, Yobbi, D.K, and McBride W.S. 2009. Surface-Water and Groundwater Interactions Along the Withlacoochee River, West-Central Florida. Scientific Investigations Report 2009-5124.

Wood, J.M., Woodward A.r., Hmphrey, S.R., and Hines, T.C. 1985. Night Counts as an Index of American Alligator Population Trends. Wildlife Society Bulletin Vol. 13, No.3, pp. 262-273.

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

**List of Figures**

Figure 1: Review Area
Figure 2: Wetland and Surface Waters
Figure 3: Tributary Flow Route and Relevant Reach to TNW and Location of USGS LP-6 Well Nr Coleman FL.
Figure 4: Water Flowing Through Forested, Flood Plain Swamp and Culvert System under I75
Figure 5: A 1960 and 2009 Aerial Image of the Property Showing Wetlands on Property Prior to Construction of I75 and Wetland Ponds and Ditches Created to Drain Wetlands into RPW
Figure 6: NRCS Web Soil Survey Hydric Rating by map Unit
Figure 7: Saturated Hydraulic Conductvity (Ksat) by Map Unit
Figure 8: Location of Surrounding Wood Stork Colonies in Relation to Wetland 1 and Wade Property
Figure 9: Lake Panasoffkee Watershed and Surface-Water Drainage Basin
Figure 10: Lake Panasoffkee Groundwater Contribution Area

**Enclosures**

Enclosure 1: Wetland Data Sheets for Aquatic Resources Not Considered to be Jurisdictional (12 pages)
Enclosure 2: Memorandum for Record: Description of Jurisdictional Waters (5 pages).

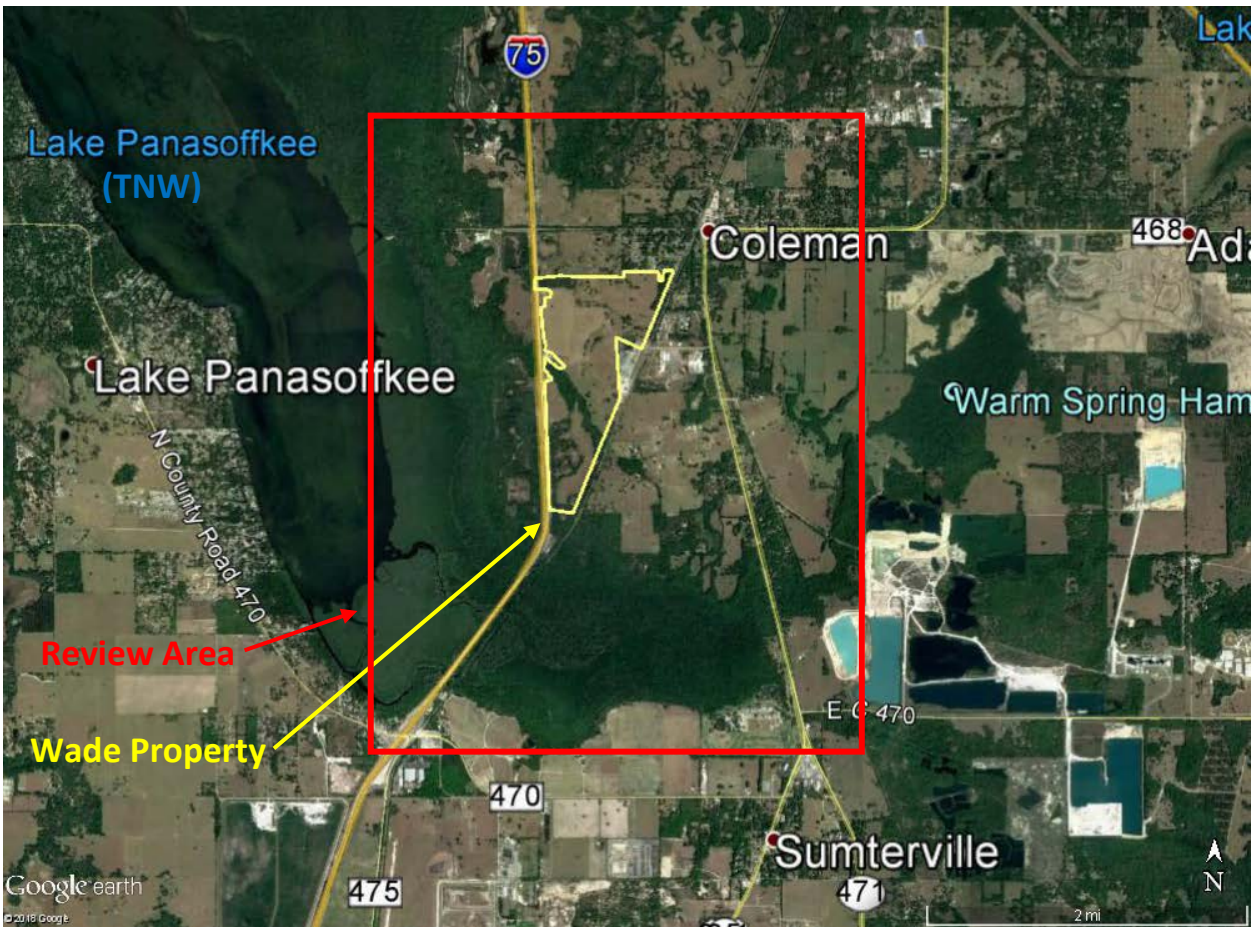



**Figure 1:** Review Area for SAJ-2017-00767 Wade Property JD, Sumter County, FL

# EXHIBIT 1 DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS DATA COLLECTION LOCATIONS ON THE WADE PROPERTY, SUMTER COUNTY, FLORIDA

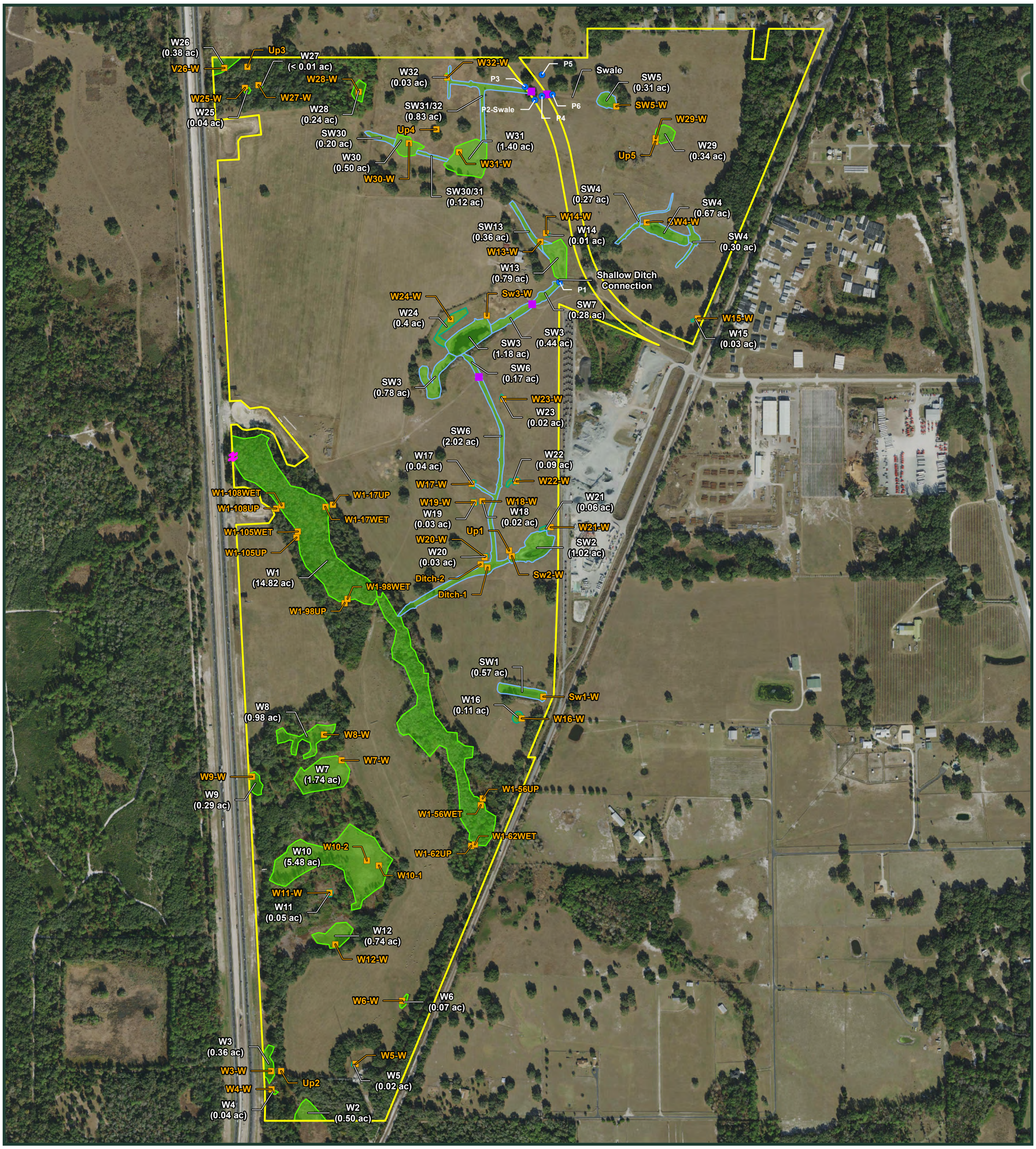



**Figure 2:** Wetlands and Surface Waters (SAJ-2017-00767 Wade Property JD, Sumter County, FL).

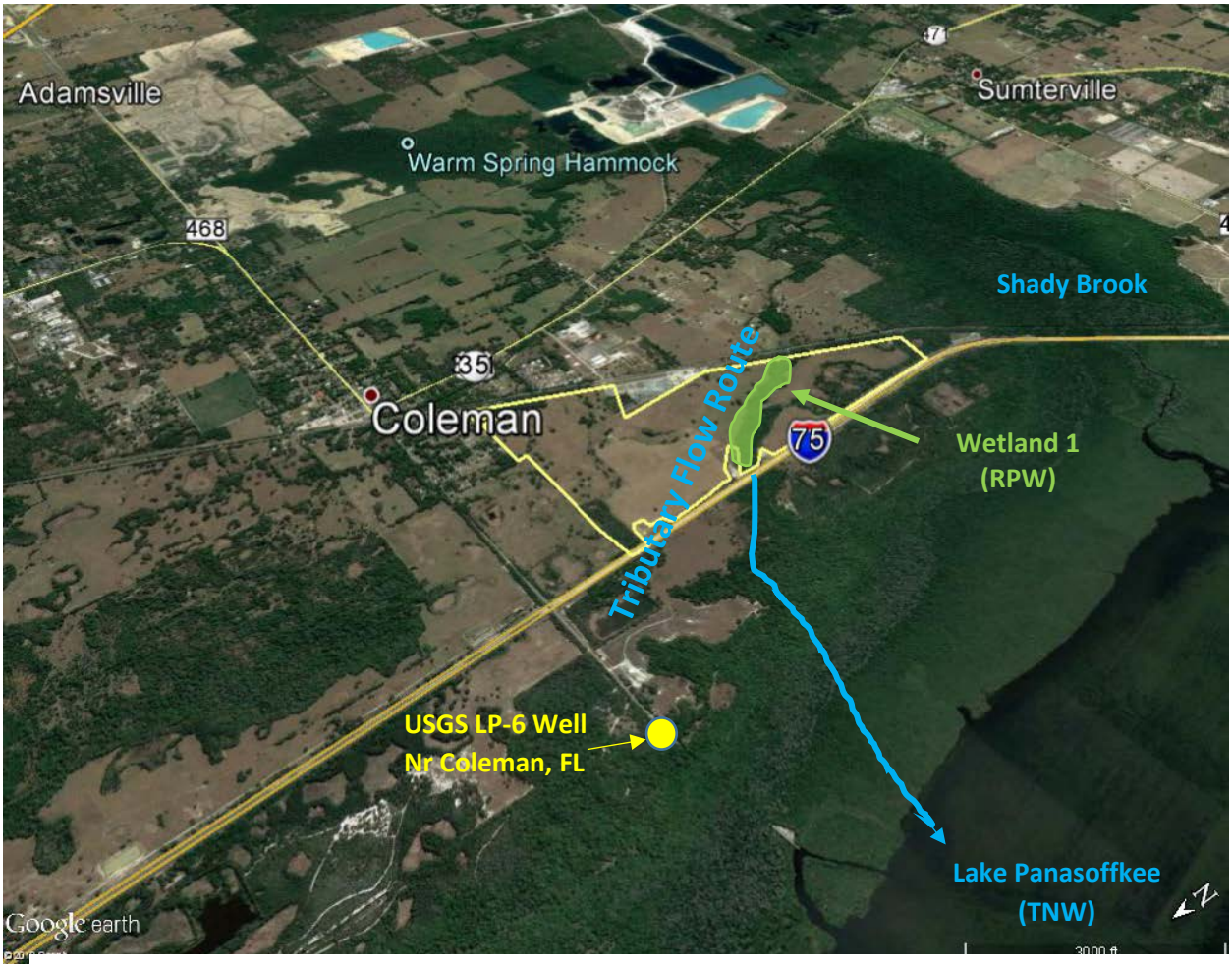



**Figure 3:** Tributary (Wetland 1) Flow Route and Relevant Reach to TNW and Location of USGS LP-6 Well Nr Coleman, FL located 1 mile from tributary (for SAJ-2017-00767 Wade Property JD, Sumter County, FL).

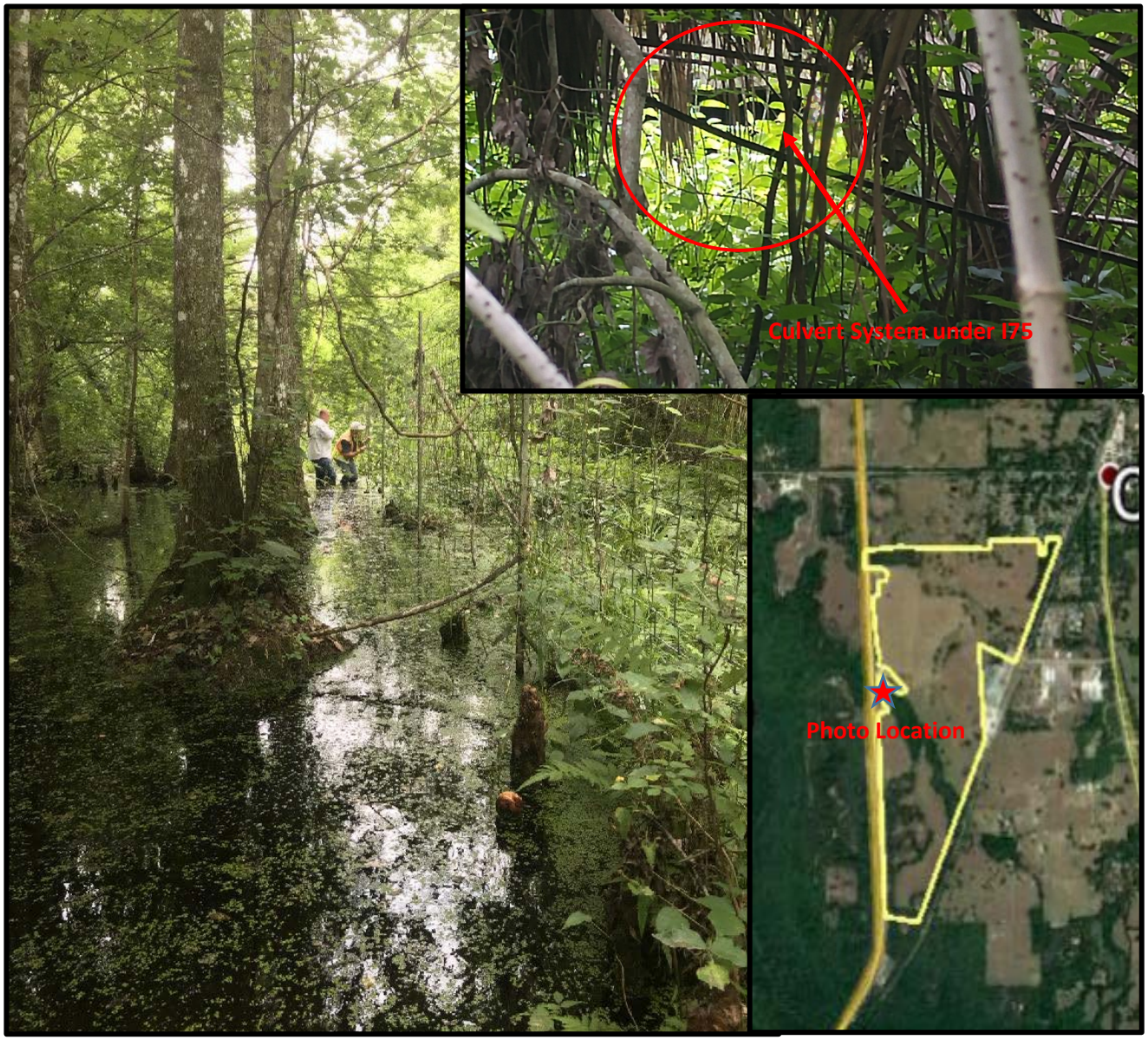



**Figure 4:** Water Flowing Through Forested, Flood Plain Swamp and Culvert System under I75 (SAJ-2017-00767 Wade Property JD, Sumter County, FL).

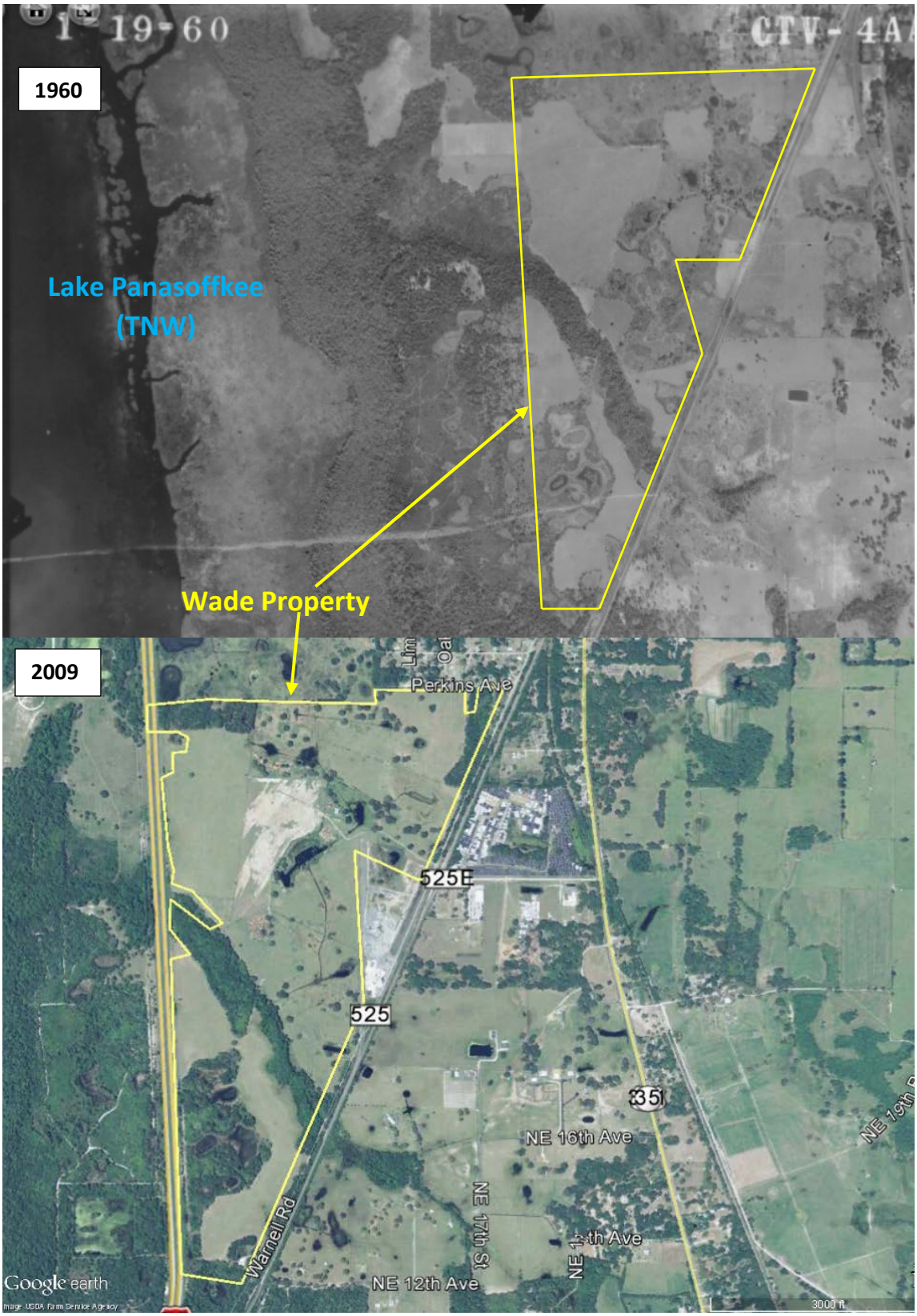



**Figure 5:** A 1960 and 2009 Aerial Image of the Property Showing Wetlands on Property Prior to Construction of I75 and Wetland Ponds and Ditches Created to Drain Wetlands into RPW (SAJ-2017-00767 Wade Property JD, Sumter County, FL)

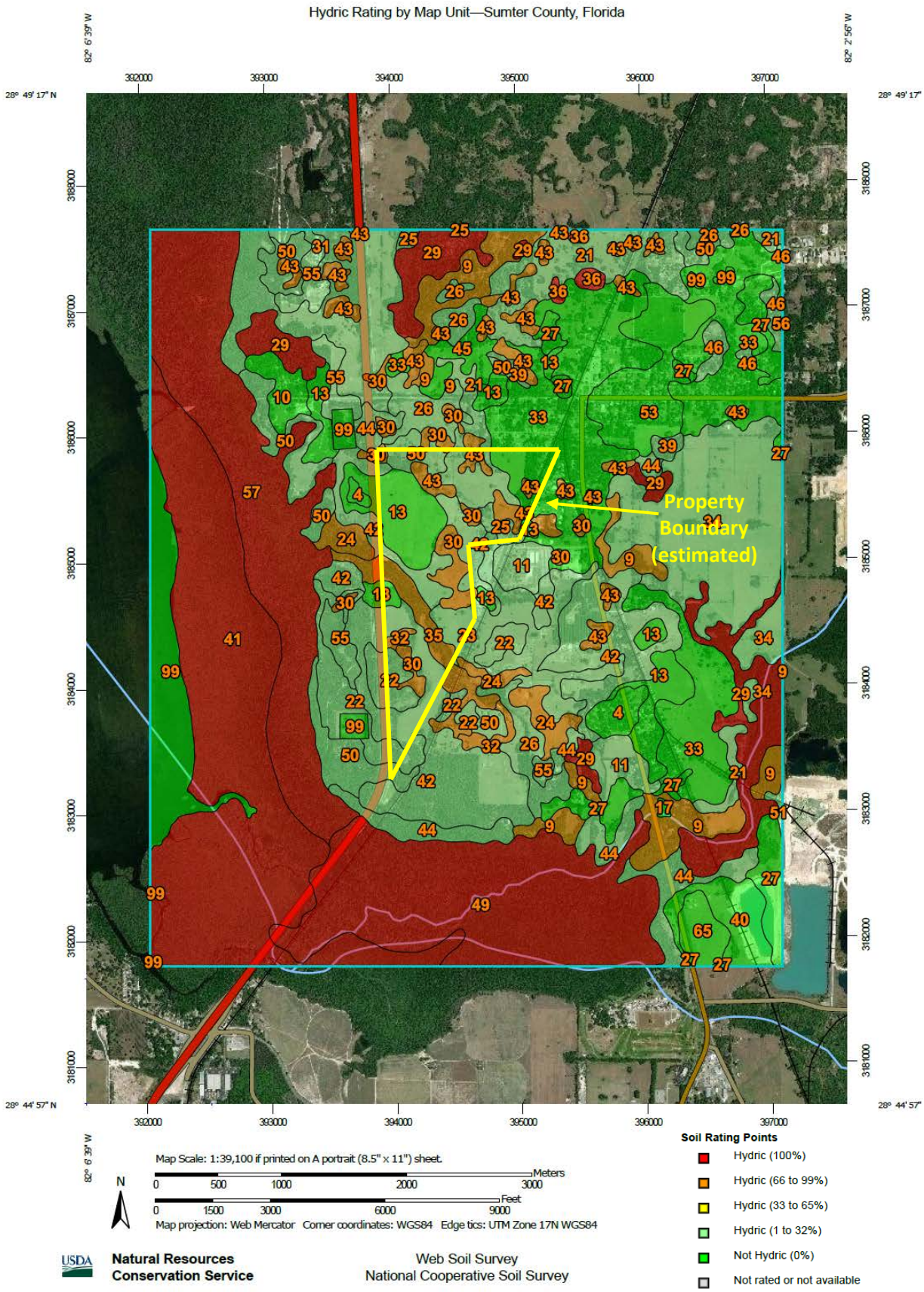



**Figure 6:** NRCS Web Soil Survey Hydric Rating by Map Unit (SAJ-2017- 00767 Wade Property JD, Sumter County, FL)

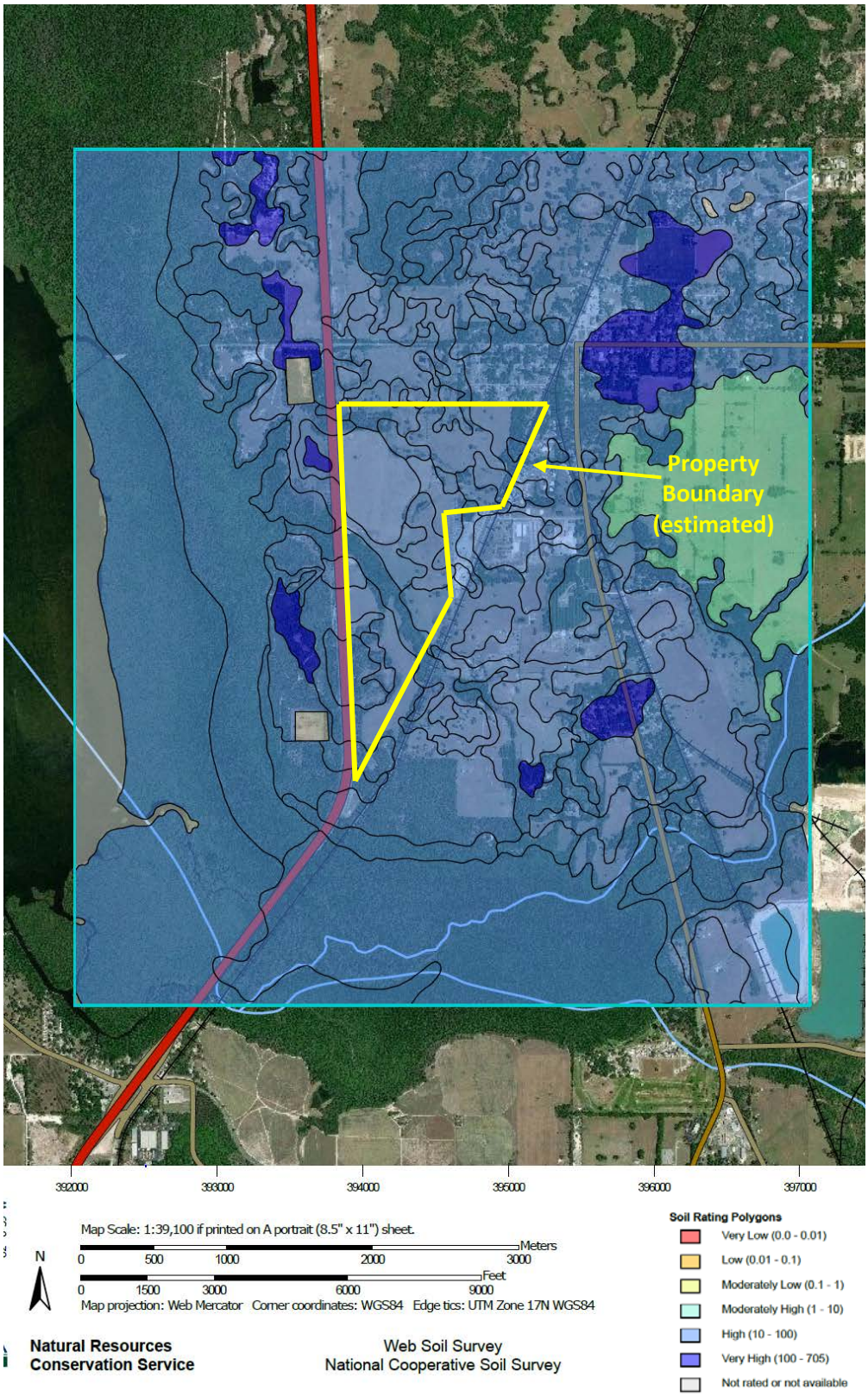



**Figure 7:** Saturated Hydraulic Conductivity (Ksat) by Map Unit (SAJ-2017-00767 Wade Property JD, Sumter County, FL)

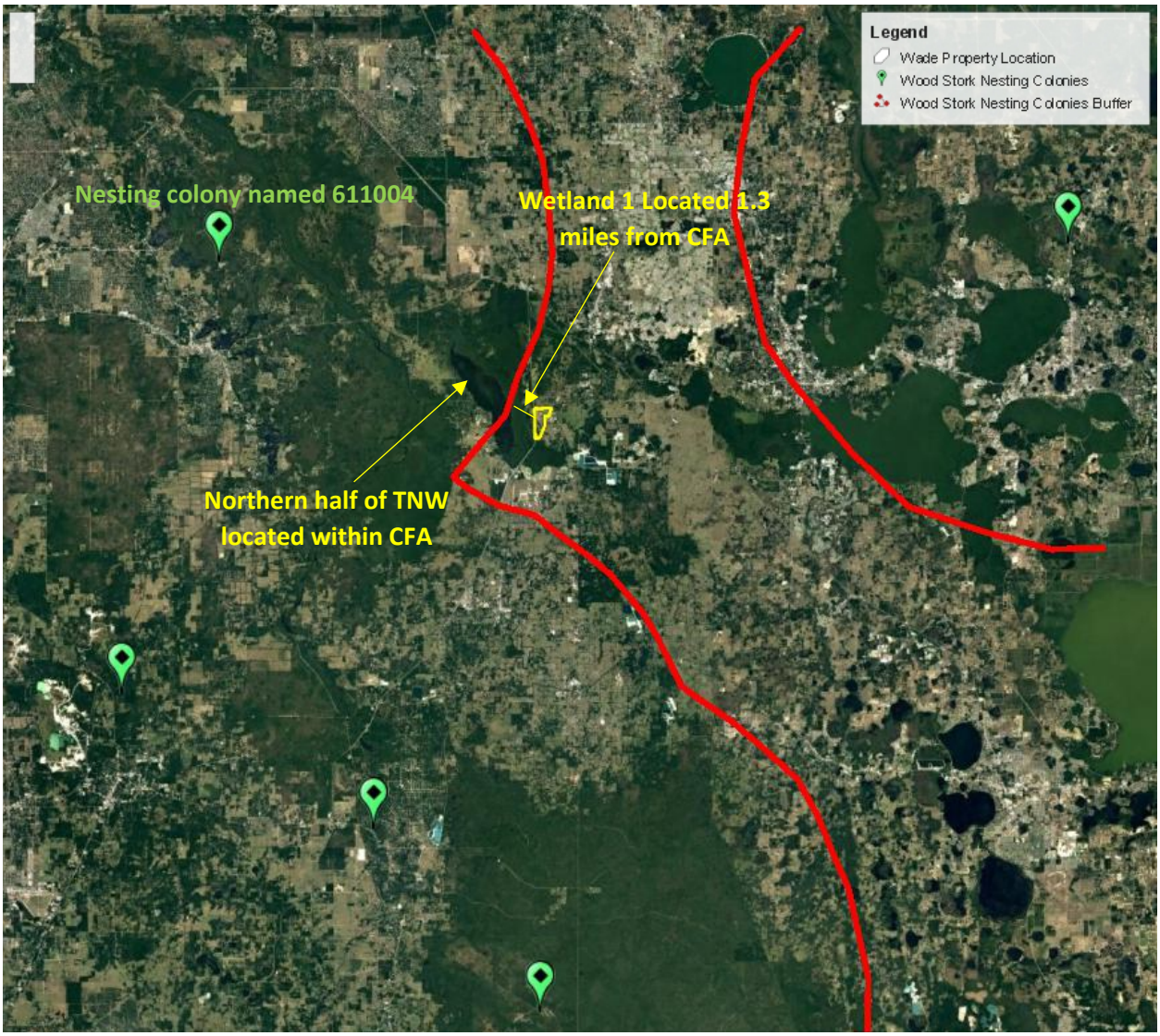



**Figure 8:** Location of Surrounding Wood Stork Colonies and Wood Stork Colony Buffers in Relation to Wetland 1 and Wade Property (for SAJ-2017-00767 Wade Property JD, Sumter County, FL).

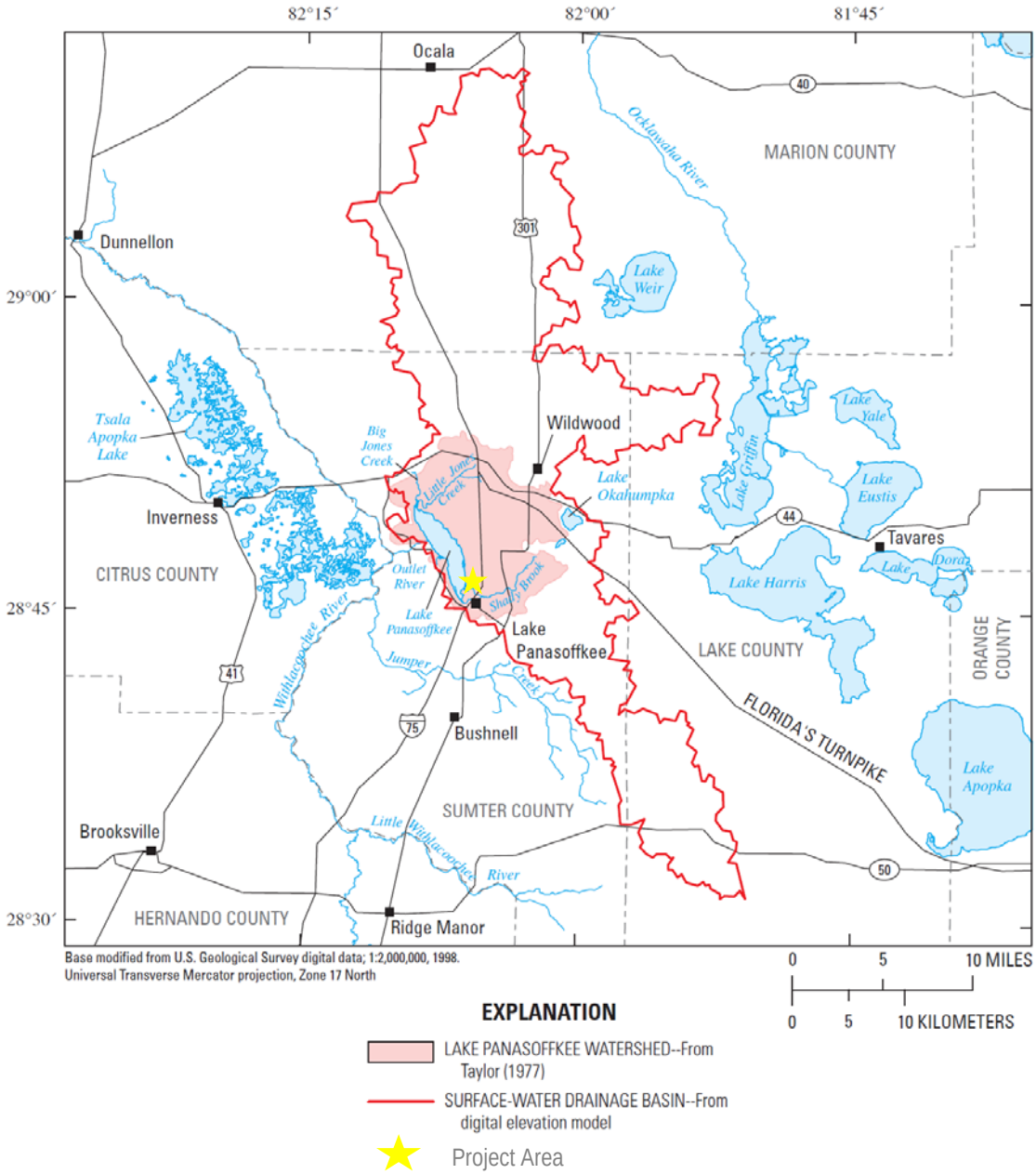



**Figure 9:** Lake Panasoffkee Surface-Water Drainage Basin and Watershed Boundary (McBride et al 2010) (SAJ-2017-00767 Wade Property JD, Sumter County, FL)

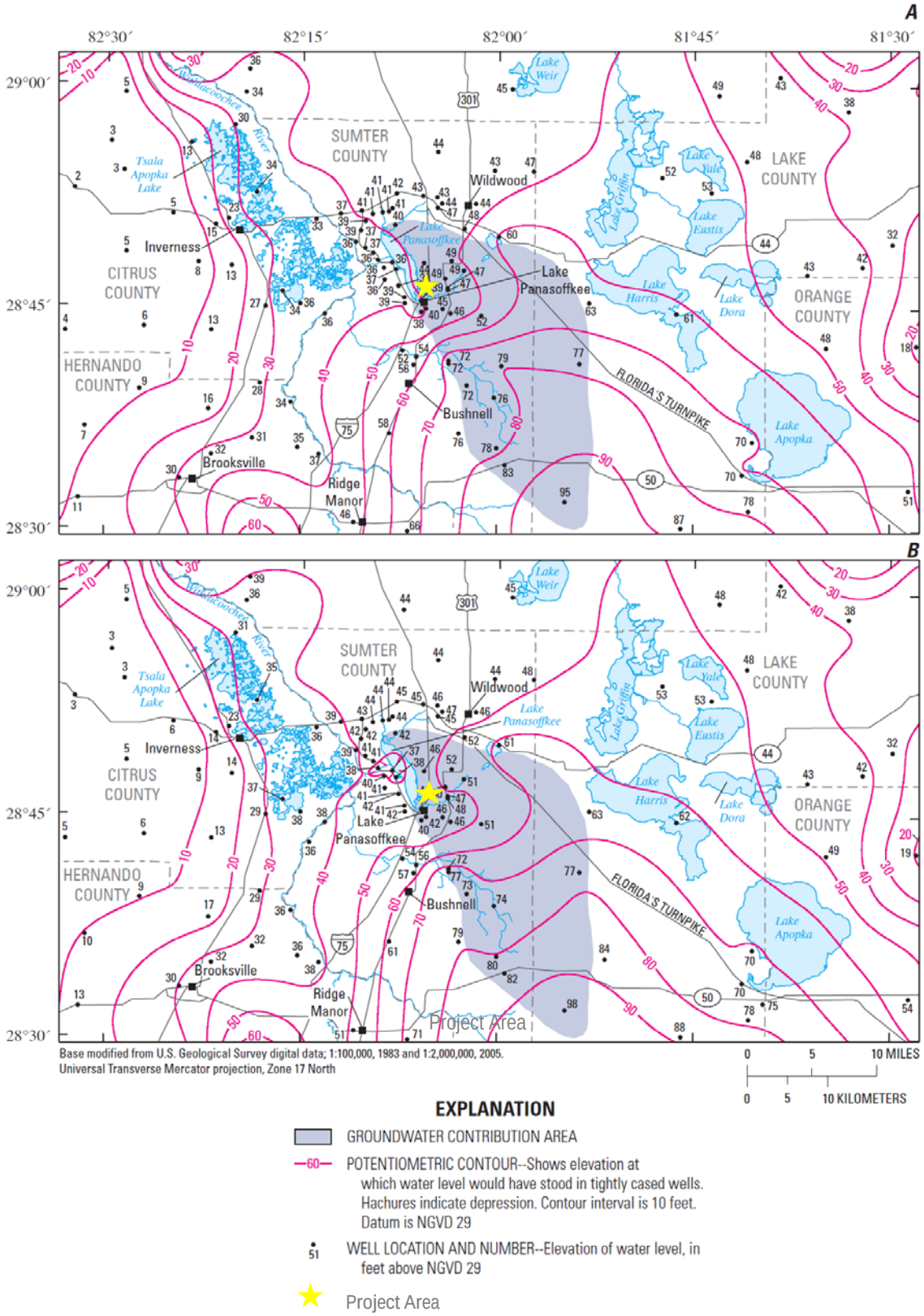



**Figure 10:** Generalized Potentiometric-Surface Map and Lake Panasoffkee Groundwater Contribution Area (McBride et al 2010) (SAJ-2017-00767 Wade Property JD, Sumter County, FL)

**Enclosure 1:** Wetland Data Sheets for Aquatic Resources Not Considered to Be Jurisdictional Wetlands

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Wade City/County: Sumter Sampling Date: 1-10-18

Applicant/Owner: The Villages State: FL Sampling Point: WS-wet

Investigator(s): JRM/TLL Section, Township, Range: 35/19/22 and 2/29/22

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): LRR U Lat: 28°47'10.28" Long: 82°5'0.01" Datum: _____

Soil Map Unit Name: 42-Adamsville fine sand NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No X | Is the Sampled Area within a Wetland? Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks: Hurricane Irma - site conditions varied from normal. Rainfall above average for the region.

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

**Field Observations:**

| | | | | |
|---|---|---|---|---|
| Surface Water Present? | Yes ____ | No X | Depth (inches): — | |
| Water Table Present? | Yes X | No ____ | Depth (inches): 6 in | |
| Saturation Present? (includes capillary fringe) | Yes X | No ____ | Depth (inches): surface | Wetland Hydrology Present? Yes ✓ No ____ |

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata)** – Use scientific names of plants. Altered system

Sampling Point: WS-wet

| Tree Stratum (Plot size: _____ ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. N/A | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | _____ = Total Cover | | |
| 50% of total cover: _____ | 20% of total cover: _____ | | |

| Sapling/Shrub Stratum (Plot size: _____ ) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. N/A | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | _____ = Total Cover | | |
| 50% of total cover: _____ | 20% of total cover: _____ | | |

| Herb Stratum (Plot size: 30 ) | | | |
|---|---|---|---|
| 1. Commelina sp | 35 | ✓ | FACW |
| 2. phyla nod | 2 | | FAC |
| 3. Maidencane O. hum | 10 | | OBL |
| 4. Juncus effusus | 5 | | OBL |
| 5. Bermudagrass C. dact | 25 | ✓ | FACU |
| 6. Cyperus sp | 1 | | – |
| 7. hydro umb. | 1 | | OBL |
| 8. pol. hydro | 1 | | OBL |
| 9. Bahia grass P. bad. | 5 | | FACU |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 85 = Total Cover | | |
| 50% of total cover: 42.5 | 20% of total cover: 17 | | |

| Woody Vine Stratum (Plot size: _____ ) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. N/A | | | |
| 4. | | | |
| 5. | | | |
| | _____ = Total Cover | | |
| 50% of total cover: _____ | 20% of total cover: _____ | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | 17 | x 1 = 17 |
| FACW species | 0 | x 2 = 0 |
| FAC species | 2 | x 3 = 6 |
| FACU species | 65 | x 4 = 260 |
| UPL species | 0 | x 5 = 0 |
| Column Totals: | 84 (A) | 283 (B) |

Prevalence Index = B/A = 3.37

**Hydrophytic Vegetation Indicators:**

ND 1 - Rapid Test for Hydrophytic Vegetation

ND 2 - Dominance Test is >50%

ND 3 - Prevalence Index is ≤3.0[1]

ND Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

ND Indicators

**Hydrophytic Vegetation Present?** Yes _____ No X

Remarks: (If observed, list morphological adaptations below).

**SOIL**

Sampling Point: WS-Wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2.4 | 10YR 2-1 | 100 | | | | | FS | Not D.S. Not 70% or 4in |
| 2.4-5.4 | ~~10YR 5-2~~ | ~~10~~ | 10YR 5/2 | 10 | D | M | | |
| | 10YR 4-1 | 98 | 10YR 6/2 | 2 | D | M | | |
| | ~~10YR 6-2~~ | ~~2~~ | | | | | | |
| 5.4-10.8 | 10YR 7-1 | 98 | 10YR 7/2 | 2 | D | M | | |
| | ~~10YR 7-2~~ | ~~2~~ | | | | | | |
| 10.8-12.0+ | 10YR 3-2 | 100 | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes _____ No X

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Wade City/County: Sumter Sampling Date: 1-10-18

Applicant/Owner: The Villages State: FL Sampling Point: W6-wet

Investigator(s): TLL / JKM Section, Township, Range: 35/19/22 and 2/20/22

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): LRR U Lat: 28° 47' 11.28" Long: 82° 5' 0.01" Datum: _____

Soil Map Unit Name: 42 - Adamsville fine sand NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** Yes X No ____ |
| Hydric Soil Present? | Yes X | No ____ | |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks: Hurricane Irma – site conditions were from normal. Rainfall is above average for the region.

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes X | No ____ | Depth (inches): 12+ |
| Water Table Present? | Yes X | No ____ | Depth (inches): 4 in |
| Saturation Present? (includes capillary fringe) | Yes X | No ____ | Depth (inches): surface |

**Wetland Hydrology Present?** Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Wade City/County: Sumter Sampling Date: 1-10-18

Applicant/Owner: The Villages State: FL Sampling Point: W11-wet

Investigator(s): VRM / TL Section, Township, Range: 35/19/22 and 2/20/22

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): LRR K Lat: 28° 47' 10.28" Long: 82° 5' 0.01" Datum: _____

Soil Map Unit Name: 22 Smyrna fine sand NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | Is the Sampled Area within a Wetland? Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks: Hurricane Irma - site conditions not typical normal
Rainfall above average for the region.

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required, check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No X | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No X | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No X | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata)** – Use scientific names of plants. Wlk system Sampling Point: Wlk-wet

| Tree Stratum (Plot size: _____ ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. N/A | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | _____ = Total Cover | | |
| 50% of total cover: _____ | 20% of total cover: _____ | | |

| Sapling/Shrub Stratum (Plot size: _____ ) | | | |
|---|---|---|---|
| 1. Slash pine P. elliottii | 2 | ✓ | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 2 = Total Cover | | |
| 50% of total cover: 1 | 20% of total cover: 0.4 | | |

| Herb Stratum (Plot size: _____ ) | | | |
|---|---|---|---|
| 1. Blue maidencane A. muticus | 60 | ✓ | FACW |
| 2. maidencane P. hemitomon | 15 | | OBL |
| 3. Eleocharis sp | 10 | | OBL |
| 4. Dichanthelium sp | 1 | | – |
| 5. Andro virg | 2 | | FACW |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 88 = Total Cover | | |
| 50% of total cover: 44 | 20% of total cover: 17.6 | | |

| Woody Vine Stratum (Plot size: _____ ) | | | |
|---|---|---|---|
| 1. | | | |
| 2. N/A | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | _____ = Total Cover | | |
| 50% of total cover: _____ | 20% of total cover: _____ | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| OBL species | _____ | x 1 = _____ |
| FACW species | _____ | x 2 = _____ |
| FAC species | _____ | x 3 = _____ |
| FACU species | _____ | x 4 = _____ |
| UPL species | _____ | x 5 = _____ |
| Column Totals: | _____ (A) | _____ (B) |

Prevalence Index = B/A = _____

**Hydrophytic Vegetation Indicators:**

✓ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

Indicator 1

**Hydrophytic Vegetation Present?** Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

**SOIL**

Sampling Point: D11-wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4/2 | 10YR 2/1 | 100 | | | | | FS | Not D.S. Not 70% |
| 4/2-12 | ~~10YR 4/1~~ | ~~70~~ | 10YR 4/1 | 20 | D | M | FS | |
| | 10YR 2/1 | 80 | | | | | FS | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes _____ No X

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Wade City/County: Sumter Sampling Date: 1-16-18

Applicant/Owner: The Villages State: FL Sampling Point: W23-Wet

Investigator(s): Sam ITU Section, Township, Range: 35/19/22 and 2/20/22

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): LRR U Lat: 28° 47' 10.28" Long: 82° 5' 0.01" Datum: _____

Soil Map Unit Name: 30 - Placid fine sand, depressional NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks:
Site conditions wetter than normal due to Hurricane Irma
Rainfall above average for the region.

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No X | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No X | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes X | No ____ | Depth (inches): Surface |

**Wetland Hydrology Present?** Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata)** – Use scientific names of plants. Ditch system

Sampling Point: U23-Wet

| Tree Stratum (Plot size: _____ ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | _____ = Total Cover | | |
| 50% of total cover: _____ | 20% of total cover: _____ | | |

N/A

| Sapling/Shrub Stratum (Plot size: _____ ) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | _____ = Total Cover | | |
| 50% of total cover: _____ | 20% of total cover: _____ | | |

N/A

| Herb Stratum (Plot size: 30 ft) | | | |
|---|---|---|---|
| 1. Axonopus sp | 10 | | FAC |
| 2. Juncus effusus | 5 | | OBL |
| 3. Calap alluteschens | 2 | | FACW |
| 4. Bermuda grass C. dactylon | 40 | ✓ | FACU |
| 5. Spade leaf Cissus rhombifolia | 25 | ✓ | FACU |
| 6. Polu hirsuta | 5 | | OBL |
| 7. Mandarin P. hen | 10 | | OBL |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 97 = Total Cover | | |
| 50% of total cover: 48.5 | 20% of total cover: 19.4 | | |

| Woody Vine Stratum (Plot size: _____ ) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | _____ = Total Cover | | |
| 50% of total cover: _____ | 20% of total cover: _____ | | |

N/A

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 20 | x 1 = | 20 |
| FACW species | 27 | x 2 = | 54 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 40 | x 4 = | 160 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 97 (A) | | 264 (B) |

Prevalence Index = B/A = 2.72

**Hydrophytic Vegetation Indicators:**

NO 1 - Rapid Test for Hydrophytic Vegetation

NO 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: (If observed, list morphological adaptations below).

## SOIL

Sampling Point: W23-wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12+0 | 10yr 2-1 | 100 | | | | | FS | Not D.S. Not 75% |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes _____ No ✓

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Wanda City/County: Sumter Sampling Date: 1-16-18

Applicant/Owner: The Villages State: FL Sampling Point: W22-wet

Investigator(s): TLL / TKM Section, Township, Range: 35/19/22 and 2/20/22

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): LRR U Lat: 28° 47' 10.28" Long: 82° 5' 0.01" Datum:

Soil Map Unit Name: 50 - Immokalee sand NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks: Site conditions wetter than normal due to Hurricane Irma. Rainfall above average for the region.

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- Y Surface Water (A1)
- X High Water Table (A2)
- Y Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes X | No ____ | Depth (inches): 2in |
| Water Table Present? | Yes ✓ | No ____ | Depth (inches): 8in |
| Saturation Present? (includes capillary fringe) | Yes X | No ____ | Depth (inches): surface |

**Wetland Hydrology Present?** Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata)** – Use scientific names of plants. whole system

Sampling Point: W-27 wet

| Tree Stratum (Plot size: _____ ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. N/A | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | _____ = Total Cover | | |
| 50% of total cover: _____ | 20% of total cover: _____ | | |

| Sapling/Shrub Stratum (Plot size: _____ ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. ~~Ilex sp~~ Wateroak | 30 | ✓ | FAC |
| 2. Q. nigra | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 30 = Total Cover | | |
| 50% of total cover: _____ | 20% of total cover: _____ | | |

| Herb Stratum (Plot size: 30 ft ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. Lemna sp | 30 | D | OBL |
| 2. Ludw parv. | 10 | | OBL |
| 3. Lizard's Tail S. cernuus | T | | OBL |
| 4. Tsa f. varian | 10 | | UPL |
| 5. pokeweed P. americana | 2 | | FACU |
| 6. Cesar weed U. latifolia | 5 | | FAC |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 57 = Total Cover | | |
| 50% of total cover: 28.5 | 20% of total cover: 11.4 | | |

| Woody Vine Stratum (Plot size: _____ ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | _____ = Total Cover | | |
| 50% of total cover: _____ | 20% of total cover: _____ | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | _____ | x 1 = | _____ |
| FACW species | _____ | x 2 = | _____ |
| FAC species | _____ | x 3 = | _____ |
| FACU species | _____ | x 4 = | _____ |
| UPL species | _____ | x 5 = | _____ |
| Column Totals: | _____ (A) | | _____ (B) |

Prevalence Index = B/A = _____

**Hydrophytic Vegetation Indicators:**

NO 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

**Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes X No _____

Remarks: (If observed, list morphological adaptations below).

## SOIL

Sampling Point: WS27-WCV

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3.6 | 10YR 6-1 | 60 | ~~10~~ | | | | FS | |
| | 10YR 2-1 | 40 | | | | | FS | |
| 3.6-12 | 10YR 2-1 | 100 | | | | | FS | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes _____ No X

Remarks:

**Enclosure 2:**

**Memorandum for Record: Description of Jurisdictional Waters for Approved Jurisdictional Determination (AJD) Form CESAJ-RD-WT, SAJ-2017-00767 Wade Property, Sumter County**

November 20, 2018

The Corps utilized the June 5, 2007 memorandum that provides guidance for Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States (referred to as "Rapanos Guidance") and 33 CFR 328.3(a) to identify which waters in the review area were subject to jurisdiction under the Clean Water Act. The Corps found the following jurisdictional waters within the review area.

Traditional Navigable Water (TNW):

*Lake Panasoffkee:*

Determined to be a TNW because it was used in the past, or may be susceptible to use in interstate or foreign commerce (33 CFR 328.3 (a)(1)) and is currently being used for commercial navigation including commercial water-borne recreation (Rapanos Guidance).

Wetland Adjacent to TNW

*Wetland #1:*

Determined to be adjacent to the TNW because historically the forested wetland slough was contiguous with the forested, flood plain swamp of Lake Panasoffkee, the TNW. Fill from construction of I75 and the culvert system created a man-made barrier between Wetland 1 and TNW. Although, the wetland is currently separated by a man-made barrier (I-75 and culvert system), there is an unbroken surface and shallow sub-surface connection to the TNW. This hydrologic connection may be intermittent but the proximity to the TNW is reasonably close, supporting the science-based inference that such wetlands have an ecological interconnection with jurisdictional waters. Wetland #1 is within 1 mile from the forested, wetland swamp that makes up the southeast end of the TNW.

The Corps has determined that W1 is "adjacent" to the TNW by definition. Wetland #1 is contiguous with the forested, flood plain swamp of TNW and although W1 is separated by a man made barrier, under Rapanos Guidance it's considered "adjacent" to TNW, because all three criteria are satisfied (first there is an unbroken surface or shallow sub-surface connection to the TNW, second W1 is physically separated from the TNW by a man-made barrier, and third, the proximity to the TNW is within 1 mile from the forested, wetland swamp that makes up the southeast end of the TNW).

Rapanos Guidance states that the Corps will assert jurisdiction over wetlands adjacent to TNW, including over adjacent wetlands that do not have a continuous surface connection to TNW. Per Rapanos Guidance the term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the US by man-made dikes or barriers, natural river

berms, beach dunes, and the like are “adjacent wetlands.” Under this definition, the agencies consider wetlands adjacent if one of the following three criteria is satisfied. First, there is an unbroken surface or shallow sub-surface connection to jurisdictional waters. This hydrologic connection may be intermittent. Second, they are physically separated from jurisdictional waters by man-made dikes or barriers, natural river berms, beach dunes, and the like. Or third, their proximity to a jurisdictional water is reasonable close, supporting the science-based inference that such wetlands have an ecological interconnection with jurisdictional waters.

<u>Non-navigable Tributary of TNW that is Relatively Permanent where the Tributary Typically has a Continuous Flow at Least Seasonally (e.g., typically three months)</u>

*Wetland #1:*

Rapanos Guidance states that the Corps should exert jurisdiction over non-navigable tributaries of TNWs that are RPWs where the tributaries typically flow year-round or has a continuous flow at least seasonally (3 months a year). The Corps determined that W1 satisfies this standard and is a jurisdictional RPW.

Although, W1 is not an official tributary of the TNW, the Corps has determined that it exhibits the appropriate hydraulic connection to the TNW, as well as sufficient volume, duration, and frequency of flow to be characterized as an RPW that is a non-navigable tributary of the TNW.

This determination was made by taking into consideration the technical information available for the property and the region (i.e. scientific literature, previous JDs, soil surveys, topography maps, aerial photography, watershed data, and hydrogeological studies) and the observations made at site visits.

Two site visits were conducted by the Corps on April 5 and June 5, 2018. The following was observed:

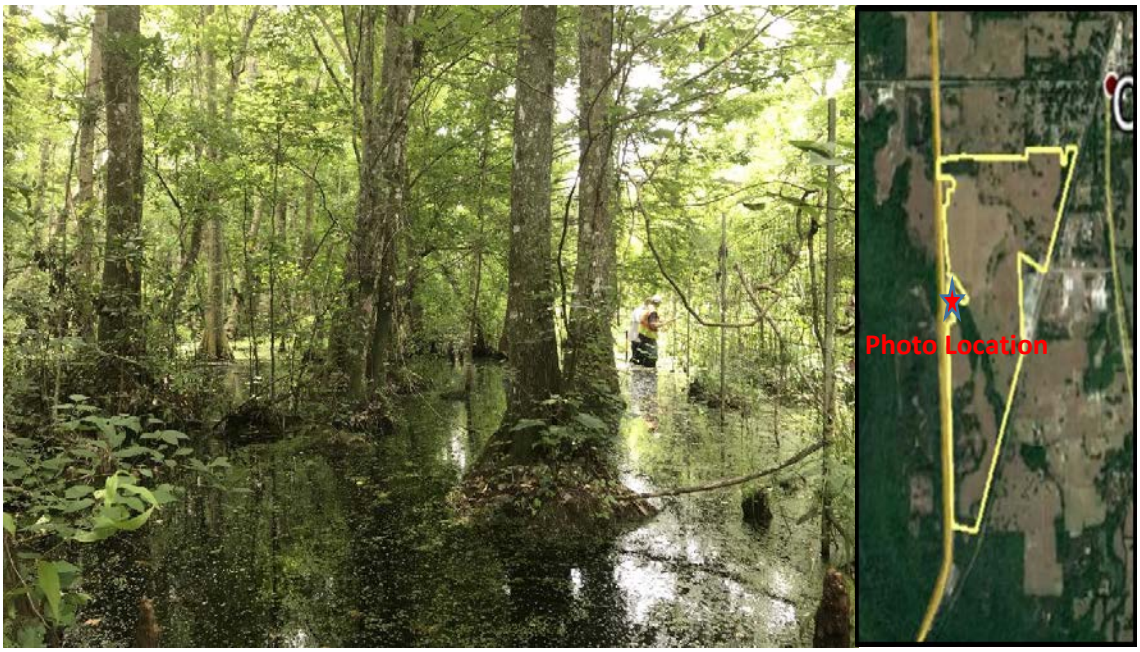
1) Wetlands located in the north section of the site were connected to W1 via ditches and concrete culverts, which were set up to divert water flow into W1 so that it can be conveyed off site.

2) At least 90% of the 14.82 acre W1 had standing water in it.

3) The low lying, center area of W1 was comprised of primarily obligate vegetation (Cypress spp., Nyssa spp., Lizards tail) with water marks and staining on large trees.

4) A 2.5 foot water depth along the margins of W1.

5) Water flowing in W1 that crossed over a road traversing the center of wetland, through a depressional area, directly into a culvert that runs under I75.

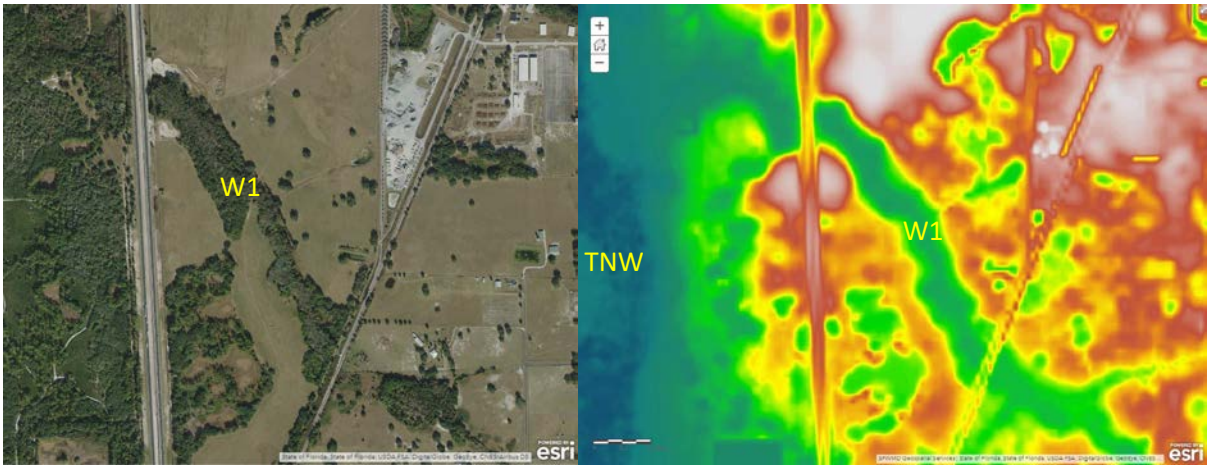



**Water flowing in W1 that crossed over a road traversing the center of wetland, through a depressional area, directly into a culvert that runs under I75.**

Based on field observations and technical information available for the site, it is reasonable to consider the following:

1) W1 supports water flow year-round or has a continuous flow at least seasonally, typically following local rainfall patterns. Sumter County receives 51.5 inches of rain annually and it rains on average 71 days a year with a pronounced wet (July-Sept) and dry (Oct-June) season. A DAREM Analysis showed that rainfall conditions were "normal" during the April 5 site visit and "wetter than normal" during the June 5 site visit. Observed water flow within W1 during the dry season (April 5), demonstrates that W1 is capable of supporting water flow, not only seasonally during the wet season, but also during the dry season under "normal conditions."

2) W1 currently functions as a tributary collecting and conveying water directly into the TNW. Human manipulation of the site for land use has influenced the volume and timing of water entering W1. A series of historic aerial photos ranging from 1941 to present day confirm that the foot print of historical wetlands were used to create a water conveyance system (comprised of ditches and concrete culverts) to divert water from the north end of the site into W1. For more than 23 years (prior to 1995), W1 has been collecting water from the site and conveying it off site through a culvert that runs under I75. Soil and wetland mapping data shows that the forested wetland system (located off site, on the westside of I75) is ecologically similar to that of W1. Lidar and topography mapping shows that there is a down sloping, channelized section that hydraulically connects W1 with the TNW. This connection may be intermittent or continuous and includes surface and subsurface shallow flow. Soil data of W1 shows that the depth to seasonal high water table is 0 to 12 inches of the surface for about 2 to 6 months during most years, and 10 to 30 inches most of the rest of the year and that depressional phases are ponded 0 to 24 inches about 3 months each year. Given that a) W1 is a large (14.82 ac) depressional area capable of capturing and retaining water; b) land manipulation on the site has increased the rate and quantity of surface and subsurface water entering and leaving W1; and c) W1 is hydraulically connected to the TNW, it is reasonable to consider that W1 currently acts as a tributary collecting water from wetlands on the property and conveying it directly into the forested, flood plain swamp of the TNW.




**Aerial and Lidar Image showing down sloping, channelized section that hydraulically connects W1 with the TNW**

Wetlands Directly Abutting a Non-navigable Tributary of TNW

*SW2, SW6, SW3, W24, SW7, W13, SW13:*

Field site visits revealed that SW2 directly abuts the RPW (Wetland 1) via a man made ditch. In addition, SW2 (1.02 ac) was connected to SW6 (2.02 ac + 0.17 ac), SW3 (0.78 ac + 1.18 ac + 0.44 ac), W24 (0.4 ac), SW7 (0.28 ac), W13 (0.79 ac), and SW13 (0.36 ac) (For a total of 7.44 ac) via ditching and concrete culverts. Findings from field site visits and a review of the historical imagery show that the aquatic resources labeled as ditches and surface waters are better described as a linear wetland that has been historically altered by construction of ditches and the placement of culverts.

Wetlands and Surface Waters Adjacent to but that do not Directly Abut a Relatively Permanent Non-navigable Tributary with a Significant Nexus to TNW

*W2, W3, W4, W6, W12, W10, W7, W9, W8, W16, W21, W20, W18, W19, W17, W31, W30, W28, W25, W26, W32, W29, SW1, SW30/31, SW30, SW5, and SW4:*

W2 (0.5 ac), W3 (0.36 ac), W4 (0.04 ac), W6 (0.07 ac), W12 (0.74 ac), W10 (5.48 ac), W7 (1.74 ac), W9 (0.29 ac), W8 (0.98 ac), W16 (0.11 ac), W21 (0.06 ac), W20 (0.03), W18 (0.02 ac), W19 (0.03 ac), W17 (0.04 ac), W31 (1.40 ac), W30 (0.50 ac), W28 (0.24 ac), W25 (0.04 ac), W26 (0.38 ac), W32 (0.03 ac), W29 (0.34 ac) (For a total of 13.42 ac of wetlands) and SW1 (0.57 ac), SW30/31 (0.12 ac +0.83 ac), SW30 (0.20 ac), SW5 (0.31 ac), SW4 (0.67 ac + 0.30 ac + 0.27 ac) (For a total of 3.27 ac of surface waters) were determined to be adjacent wetlands that do not have a continuous surface connection to the TNW. Per the Rapanos Guidance, the Corps will assert jurisdiction over wetlands adjacent to TNW (Wetland #1), including over adjacent wetlands that do not have a continuous surface connection to TNW. The Rapanos Guidance also states that the Corps will assert jurisdiction over non-navigable tributaries and their adjacent wetlands where such tributaries and wetlands have a significant nexus to a TNW. See Significant Nexus analysis in Section III.B.C.4 Significant nexus findings for RPW; wetlands directly abutting RPW: and wetlands adjacent to an RPW, but that do not directly abut the RPW, but flows directly into TNW. As per the Rapanos Guidance, aquatic resources were determined to be “similarly situated” wetlands and the significant nexus analysis assesses the flow characteristics and functions of the tributary itself and the functions performed by wetlands adjacent to the tributary. Significant nexus analysis determined that “similarly situated” wetlands in combination with the Wetland #1 affects the chemical, physical, and biological integrity of the downstream TNW (Lake Panasoffkee).