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 04, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Jacksonville District, SAJ-2017-00688-Siena Cove

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: FL County/parish/borough: Pasco City: Wesley Chapel
Approximate center coordinates of site (in degree decimal format): Latitude: 28.249102°, Longitude: -82.358783°
Universal Transverse Mercator Zone:
Name of nearest waterbody: Unnamed tributary
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Hillsborough River
Name of watershed or Hydrologic Unit Code (HUC): 0310020504—Cypress Creek-Hillsborough River
☒ 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: October 03, 2019
☒ Field Determination – Date(s): September 11, 2018; October 02, 2019

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **are no** "*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: .

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: 2,050 lf & 1,300 lf; width (ft) and/or acres
   Wetlands: 33.81 acres

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual and Regional Supplement**
   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: The Corps determined the following waters are non-jurisdictional:
   1. Permitted stormwater ponds: SW F, SW H1, SW H2, SW S
   2. Ponds excavated in dry land for ornamental or irrigation purposes: SW C, SW K, SW M, SW N, SW T, SW U

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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.

3. Shallow swales that do not have tributary characteristics or carry relatively permanent flow: SW I4, SW O, SW P, SW Q, SW R.

See Appendix 3 for detail.

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:

Summarize rationale supporting determination:

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent":

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) if there is a significant nexus. A wetland that directly abuts an RPW is also jurisdictional if there is a significant nexus. A wetland that is adjacent to but that does not directly abut an RPW also 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 (and its adjacent wetlands if any) and a traditional navigable water.

If a significant nexus is required, 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 a significant nexus is required, 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: 107,965 Acres (HUC 10)
Drainage area: 34,630 acres (HUC 12)
Average annual rainfall: 53 inches
Average annual snowfall: inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through 2 tributaries before entering TNW.

Project waters are 20-25 river miles from TNW.
Project waters are 1 (or less) river miles from RPW.
Project waters are 11 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: NA.

Identify flow route to TNW[4]: SW L1/L2 flows north into the northern unnamed east-west tributary. This tributary flows west to Big Cypress Swamp, then south to Cypress Creek, then into the Hillsborough River (TNW).
Tributary stream order, if known: .

[4] 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.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☒ Artificial (man-made). Explain: SW L1/L2 was excavated prior to 1974.
☒ Manipulated (man-altered). Explain: Historically, Wetland J was a significant, flowing wetland strand that was channelized after 1957. A ditch was excavated on the north side of Wetland J that is approximately 8' to 10' below the natural grade of the historic wetland.

Tributary properties with respect to top of bank (estimate):
Average width: Tributary through Wetland J: 15 feet; Tributary SW L1/L2: 10 feet
Average depth: Tributary through Wetland J: 8-10 feet; Tributary SW L1/L2: 3 feet
Average side slopes: Tributary through Wetland J: 2:1; Tributary SW L1/L2: 3:1.

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☒ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Relatively stable.
Presence of run/riffle/pool complexes. Explain: None observed.
Tributary geometry: Relatively straight.
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: Seasonal flow
Estimate average number of flow events in review area/year: 20 (or greater)
Describe flow regime: The tributary through Wetland J is categorized as perennial and likely flows year-round. Tributary L1/L2 has at least seasonal flow. A water is "seasonal" when it has predictable flow during wet seasons in most years. The tributaries have relatively permanent flowing or standing water at least seasonally, characterized by steady flow in the rainy season and lighter flow in the dry season. See Appendix 3 for additional detail.
Other information on duration and volume: See Appendix 3.

Surface flow is: Discrete and confined. Characteristics: Water flows within the channels and is confined to culverts under crossings. Surface water enters the tributaries via overland flow, flow from ditches and swales, and sheet flow.

Subsurface flow: Yes. Explain findings: Most intermittent streams are fed by both groundwater and precipitation. In riverine systems, hyporheic flow is exchanged back and forth across the streambed interface. Hyporheic exchange is influenced by watershed topography. The Corps did not perform any site-specific tests for measuring subsurface flow in the review area for this JD; however, the tributary through Wetland J, which is a perennial water, was excavated in a wetland system to 8-10 feet below the natural grade of the wetland. Groundwater is exchanged between the tributary and these wetlands.
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[5] (check all indicators that apply):

☒ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☒ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☒ sediment deposition	☒ multiple observed or predicted flow events
☒ water staining	☒ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[6] 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:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.

[5]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.
[6]Ibid.

☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:

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

Explain: Water enters the tributaries from adjacent land uses including the golf course, roadways and residential areas. The two most dominant land uses in the watershed are urban/built-up and agriculture.

Identify specific pollutants, if known: The review area is a former golf course which was in operation for several decades. The site contains arsenic and dieldrin (organochloride) contamination in the soil, and arsenic contamination in the groundwater. In addition, the tributaries are adjacent to roadways and residential development. The arsenic groundwater contamination is manifested in the shallow aquifer near the water table. Arsenic solubility and mobility increases with reducing conditions in the soil and is thereby dependent on water levels, seasonal fluctuations in the water table, and rainfall. Groundwater across the site travels toward the north/northeast toward the subject tributaries. The tributaries were excavated to depths near or below the water table. The tributaries are therefore susceptible to receiving and transporting heavy metals, fertilizers, pesticides and petroleum wastes downstream. See Appendix 3.

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

☒ Riparian corridor. Characteristics (type, average width): Riparian wetlands (Wetland J) 160-220 feet in width in review area.

☐ Wetland fringe. Characteristics: .

☒ Habitat for:

☒ Federally Listed species. Explain findings: Potential for utilization by wood stork.

☒ Fish/spawn areas. Explain findings: Capable of supporting fish.

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: Habitat for small fish, reptiles, amphibians, macroinvertebrates, insects.

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: 33.81 acres

Wetland type. Explain: Natural cypress systems and their contiguous shallow open water/littoral portions.

Wetland quality. Explain: Moderate to good quality. Hydrology affected in some wetlands due to ditching. Some encroachment of inappropriate vegetation.

Project wetlands cross or serve as state boundaries. Explain: NA.

(b) General Flow Relationship with Non-TNW:

Flow is: Perennial or intermittent flow. Explain: The wetlands exhibit a continuous surface connection with the tributary and are either directly contiguous with the tributary (Wetlands I and J), or are connected to the tributary through ditches and swales. At a minimum, the wetlands share an intermittent flow relationship with the tributary. Wetland J, through which the tributary flows, shares a perennial flow relationship with the tributary. See Appendix 3.

Surface flow is: Discrete/confined and overland sheetflow.

Characteristics: The wetlands exhibit a continuous surface connection with the tributary and either are directly contiguous with the tributary (Wetlands I and J), or are connected to the tributary through ditches and swales. Riparian/floodplain wetlands capture water from overbank flow and store excess water from streams. As streamflow decreases after hydrologic events, the water temporarily stored in the adjacent wetlands can flow back into the channel, supporting stream baseflow.

Subsurface flow: Yes. Explain findings: Most intermittent streams are fed by both groundwater and precipitation. In riverine systems, hyporheic flow is exchanged back and forth across the streambed interface. Hyporheic exchange is influenced by watershed topography. The Corps did not perform any site-specific tests for measuring subsurface flow in the review area for this JD; however, the subject tributary, which is a perennial water, was excavated in a wetland system to 8-10 feet below the natural grade of the wetland. Groundwater is exchanged between the tributary and these wetlands.

☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting

☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain: .

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are 20-25 river miles from TNW.

Project waters are 11 aerial (straight) miles from TNW.

Flow is from: Wetland to navigable waters.
Estimate approximate location of wetland as within the 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 enters the tributaries from adjacent land uses including the golf course, roadways and residential areas.

Identify specific pollutants, if known: The review area is a former golf course which was in operation for several decades. The site contains arsenic and dieldrin (organochloride) contamination in the soil, and arsenic contamination in the groundwater. In addition, the tributaries are adjacent to roadways and residential development. The arsenic groundwater contamination is manifested in the shallow aquifer near the water table. Arsenic solubility and mobility increases with reducing conditions in the soil and is thereby dependent on water levels, seasonal fluctuations in the water table, and rainfall. In the wetland areas, the water table is near the surface for most of the year. See Appendix 3.

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

☒ Riparian buffer. Characteristics (type, average width): Riparian wetlands (Wetland J) 160-220 feet in width in review area.

☒ Vegetation type/percent cover. Explain: Natural cypress systems and their contiguous shallow open water/littoral portions.

☒ Habitat for:

- ☒ Federally Listed species. Explain findings: Potential for utilization by wood stork and eastern indigo snake.
- ☒ Fish/spawn areas. Explain findings: Provide habitat for small fish during periods of overbank flow.
- ☐ Other environmentally-sensitive species. Explain findings: .
- ☒ Aquatic/wildlife diversity. Explain findings: Habitat for small fish, reptiles, amphibians, macroinvertebrates, insects.

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

All wetland(s) being considered in the cumulative analysis: **14**
Approximately 156 acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Y	13	Y	0.5
Y	12	Y	95
Y	2.3	Y	5.0
Y	3.0	Y	0.70
Y	9.37	Y	0.95
Y	1.87	Y	1.20
Y	7.92	Y	1.4

Summarize overall biological, chemical and physical functions being performed: The subject wetlands, in combination with similarly situated wetlands, perform the following functions: Storage of flood waters; reduction of downstream peak discharges and volumes; recharge of aquifer; maintenance of seasonal/baseflows; maintenance of groundwater supplies; removal of sediments and nutrients; provision of breeding grounds and wildlife habitat (e.g. feeding/foraging, nesting, spawning, rearing of young); support diverse community of benthic invertebrates, a major food source for vertebrates.

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 an RPW where the RPW flows directly or indirectly into a TNW.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: See Appendix 3.

4. **Significant nexus findings for wetlands adjacent to an RPW where the RPW flows directly or indirectly into a TNW.** 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: See Appendix 3.

For 3 and 4 above: If it can be demonstrated that the tributary has a bed, bank and an OHWM, and is part of a tributary system to a traditional navigable water or an interstate water, and, therefore, can transport pollutants, flood waters or other materials to a traditional navigable water or interstate water, it is generally expected that the tributary, along with the other tributaries in the watershed and their adjacent wetlands (the "similarly situated" waters), can be demonstrated to have a significant nexus with the downstream TNW. This expectation is based on the significant harm that pollutants can have on the physical, chemical or biological integrity of the downstream TNW. The presence of a bed, bank and an OHWM in the subject tributary are physical indicators of flow. The presence of standing and/or flowing water has also been documented in field inspections, and with aerial photography spanning 13 years. Flows through all of the tributaries collectively in the watershed with the above characteristics are sufficient to transport pollutants or other materials downstream to the TNW in amounts that significantly affect its chemical, physical or biological integrity. In addition, the analysis considers the functions performed cumulatively by all wetlands that are adjacent to the tributaries, such as storage of flood water and runoff; pollutant trapping and filtration; improvement of water quality; support of habitat for aquatic species; and other functions that contribute to the maintenance of water quality, aquatic life, commerce, navigation, recreation and public health in the downstream TNW. These functions, considered cumulatively, have more than a speculative or insubstantial effect on the physical, chemical and biological integrity of the downstream TNW. In general, tributaries and their adjacent wetlands function as an integrated hydrologic system, and as a unit they affect the amount of pollutants and floodwaters that reach the downstream TNW. See Appendix 3.

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, acres.
   ☐ Wetlands adjacent to TNWs: acres.

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: The tributary through Wetland J is categorized by the National Hydrographic Dataset as perennial and likely typically flows year-round. See Appendix 3.
   ☒ 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: Tributary L1/L2 has flow at least seasonally. See Appendix 3.

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☒ Tributary waters: Tributary through Wetland J: 2,050 linear feet; Tributary SW L1/L2: 1,300 linear feet width (ft).
   ☐ Other non-wetland waters: acres.
   Identify type(s) of waters: .

3. **Non-RPWs[7] 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).

[7]See Footnote # 3.

☐ 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: The on-site wetlands share a continuous surface connection with the east-west tributary. See Appendix 3.

☐ 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: .

Provide acreage estimates for jurisdictional wetlands in the review area: 33.81 acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ 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.**[8]
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):[9]
☐ 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: .

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

☒ Other: (explain, if not covered above): Permitted stormwater ponds: SW F, SW H1, SW H2, SW S; swales that do not have tributary characteristics or carry relatively permanent flow: SW I4, SW O, SW P, SW Q, SW R.

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; i.e., SWANCC Decision), using best professional judgment (check all that apply):

☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☒ Lakes/ponds: 7.43 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 (i.e., Rapanos Decision), where such a finding is required for jurisdiction (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.

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: Provided by applicant.
☐ National wetlands inventory map(s):
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation:
☒ Photographs: ☒ Aerial: Google Earth (years 2003-2019); aerials provide by applicant.
  or ☒ Other: Site photos provided by applicant; site photos taken by Corps on Sept 11, 2018, and Oct 02, 2019.
☐ Previous determination(s):
☒ Applicable/supporting case law: Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159 (2001), Rapanos v. U.S., 126 S. Ct. 2208 (2006), U.S. V. McWane Inc, et al, 505 F.3d1208 (11th Cir. 2007) .
☐ Applicable/supporting scientific literature:
☒ Other information (please specify):

1. Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States, EPA, December 2008.
2. Tampa Bay Water Atlas: https://www.tampabay.wateratlas.usf.edu/
3. University of Florida Digital Collection: http://ufdc.ufl.edu/aerials/map
4. Conceptual Remediation Action Plan (September 24, 2019) by PACSCON GeoEnvironmental, Inc.

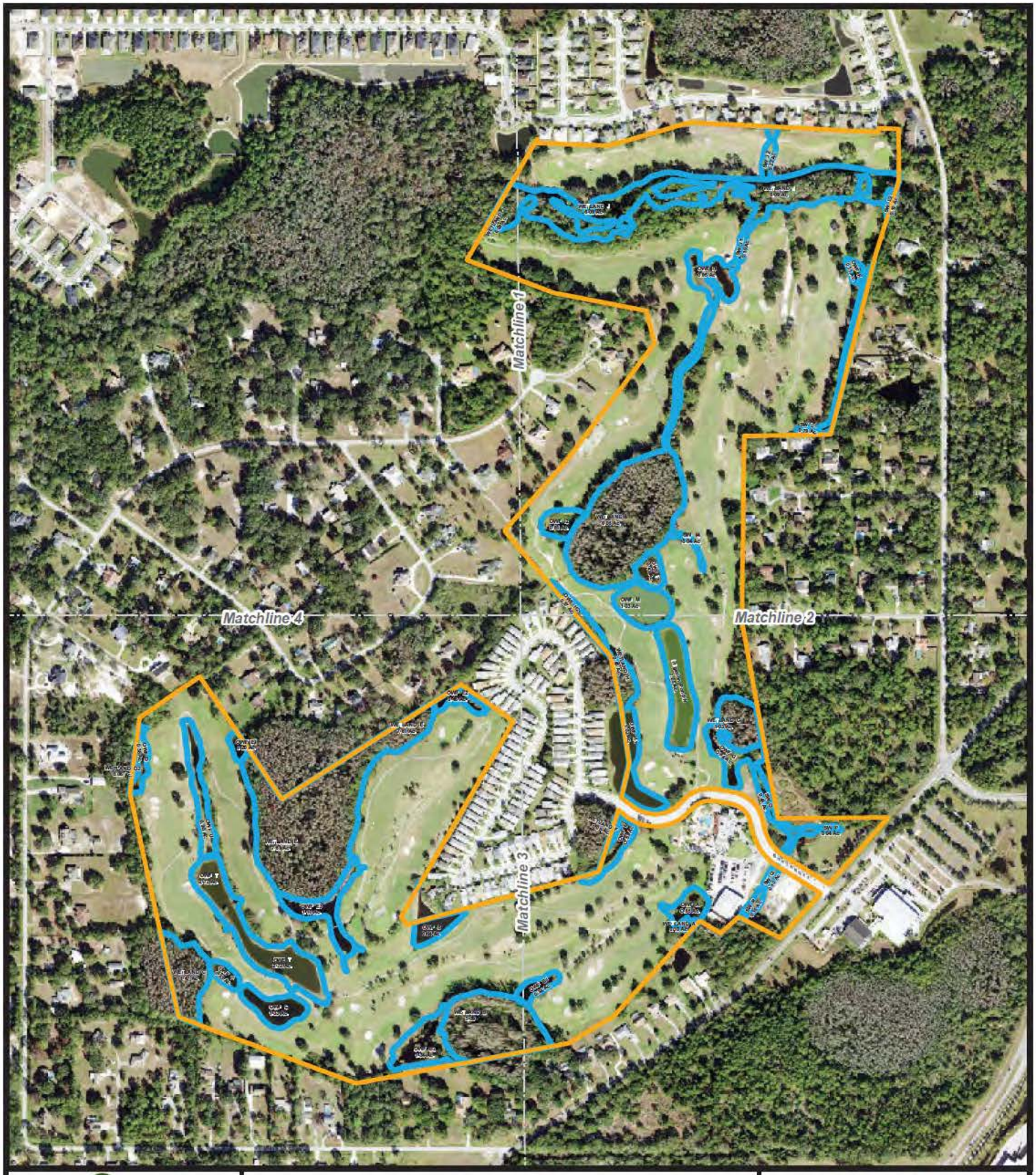
Additional supporting information provided in appendices.

B. ADDITIONAL COMMENTS TO SUPPORT JD: Additional supporting information provided in appendices.

Appendix 1: Wetland maps by GHS Environmental

Appendix 2: Wetland/Surface Water Table

Appendix 3: Description of Jurisdictional and Non-Jurisdictional Waters for SAJ-2017-00688-Siena Cove Approved Jurisdictional Determination



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Siena Cove

Siena Cove Boundary

Wetlands/Ornamental Water Features/Surface Waters

Matchlines

N
W E
S

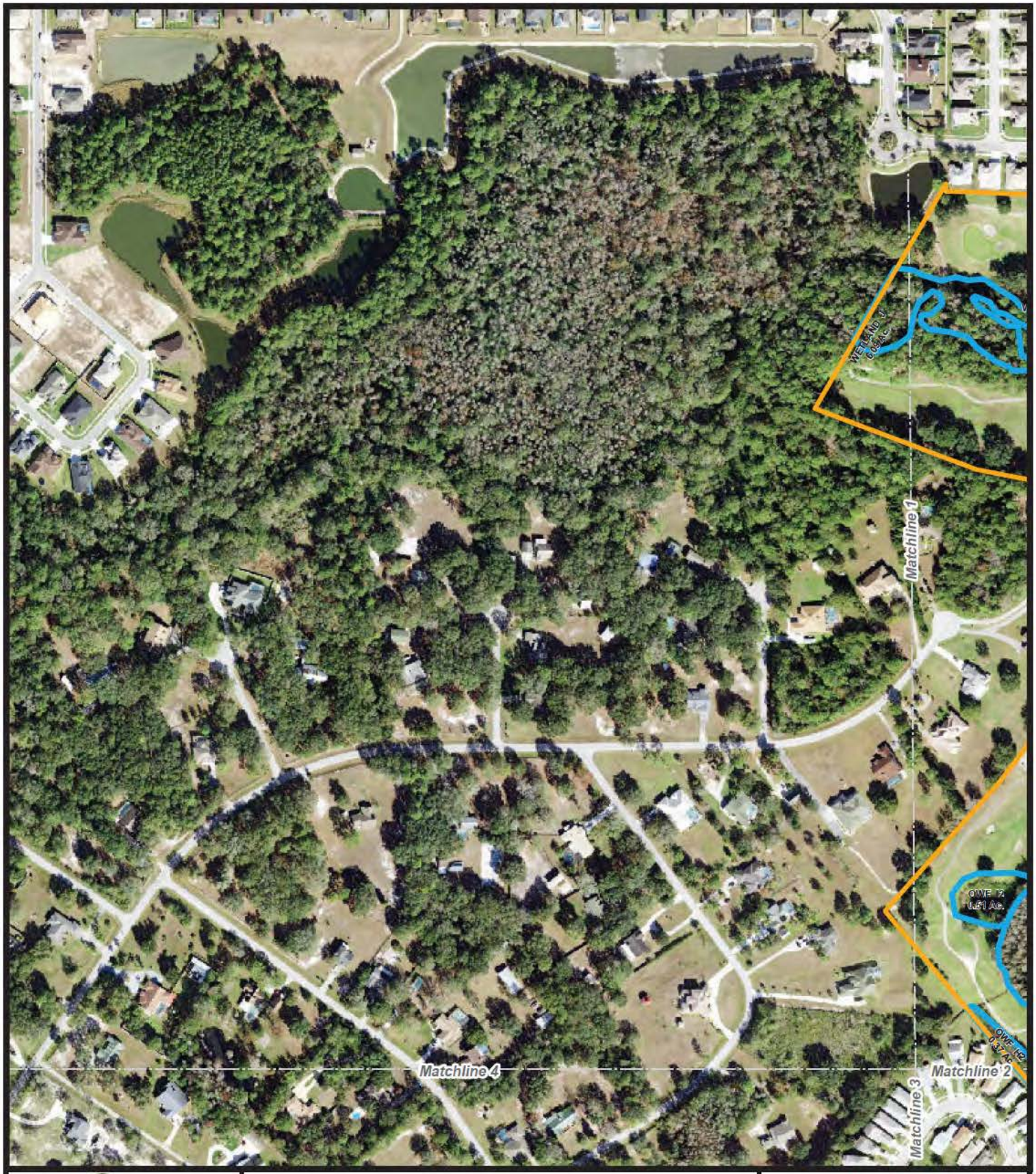
Figure 6. Wetland Map with Labeling and Acreages

Scale: 1 inch = 650 feet

Feet

0 270 540 1,080

Date: 1/22/2018



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Siena Cove

Siena Cove Boundary

Wetlands/Ornamental Water Features/Surface Waters

Matchlines

N
W E
S

Figure 6A.
Wetland Map with Labeling and Acreages

Scale: 1 inch = 350 feet
Feet
0 150 300 600

Date: 1/22/2018

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Siena Cove

Siena Cove Boundary

Wetlands/Ornamental Water Features/Surface Waters

Matchlines

N
W E
S

Figure 6B. Wetland Map with Labeling and Acreages

Scale: 1 inch = 350 feet

Feet

0 150 300 600

Date: 1/22/2018

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Siena Cove

Siena Cove Boundary

Wetlands/Ornamental Water Features/Surface Waters

Matchlines

N
W E
S

Figure 6C.
Wetland Map with Labeling and Acreages

Scale: 1 inch = 350 feet
Feet
0 150 300 600

Date: 1/22/2018

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Siena Cove

Siena Cove Boundary

Wetlands/Ornamental Water Features/Surface Waters

Matchlines

N
W E
S

Figure 6D.
Wetland Map with Labeling and Acreages

Scale: 1 inch = 350 feet
Feet
0 150 300 600

Date: 1/22/2018

Appendix 2: WETLAND/SURFACE WATER TABLE

SAJ-2017-00688-Siena Cove

Aquatic resource name	Size	JD status
Wetland A incl. SW A	0.65 ac	• Jurisdictional • Wetland adjacent to an RPW • SW A excavated in wetlands; expansion of Wetland A; shares a surface hydrologic connection w/ Wetland A
Wetland B incl. SW B1 & SW B2	4.77 ac	• Jurisdictional • Wetland adjacent to an RPW • SW B1 & B2 excavated in wetlands; expansion of Wetland B; shares a surface hydrologic connection w/ Wetland B
Wetland C incl. SW C1	1.82 ac	• Jurisdictional • Wetland adjacent to an RPW • SW C1 excavated in wetlands; expansion of Wetland C; shares a surface hydrologic connection w/ Wetland C
Wetland D1/D2 incl. SW D	0.47 ac	• Jurisdictional • Wetland adjacent to an RPW • SW D excavated in wetlands; expansion of Wetland D; shares a surface hydrologic connection w/ Wetland D
Wetland E incl. SW E1 & SW E2 & E3	9.37 ac	• Jurisdictional • Wetland adjacent to an RPW • SW E1, E2 & E3 excavated in wetlands; expansion of Wetland E; share a surface hydrologic connection w/ Wetland E
Wetland F	0.08 ac	• Jurisdictional • Wetland adjacent to an RPW
Wetland G incl. SW G	1.87 ac	• Jurisdictional • Wetland adjacent to an RPW • SW G excavated in wetlands; expansion of Wetland G; shares a surface hydrologic connection w/ Wetland G
Wetland H	0.45 ac	• Jurisdictional • Wetland adjacent to an RPW
Wetland I incl. SW I1, SW I2 & SW I3	7.92 ac	• Jurisdictional • Wetland adjacent to an RPW • SW I1 rerouted and excavated historic wetland flowway; SW I2 & I3 excavated in wetlands; expansions of Wetland I; share a surface hydrologic connection w/ Wetland I

Wetland J incl. SW J1 & J2	6.41 ac	• Jurisdictional • Wetland adjacent to an RPW • SW J1 rerouted and excavated historic wetland flowway; SW J2 excavated in wetlands; share a surface hydrologic connection w/ Wetland J and wetland to the north
SW C	0.98 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Upland-excavated pond for ornamental purposes
SW F	0.53 ac	• Non-jurisdictional • Permitted stormwater pond (33 CFR 328.3(a))
SW H1	1.02 ac	• Non-jurisdictional • Permitted stormwater pond (33 CFR 328.3(a))
SW H2	0.37 ac	• Non-jurisdictional • Permitted stormwater pond (33 CFR 328.3(a))
SW I4	0.08 ac	• Non-jurisdictional • Upland-excavated shallow conveyance swale
SW K	0.15 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Upland-excavated pond for ornamental purposes
SW L1/L2	Approx. 1,300 LF	• Jurisdictional • RPW
SW M	1.03 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Upland-excavated pond for ornamental purposes
SW N	1.65 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Permitted upland-excavated irrigation pond
SW O/P/Q/R	0.77 ac	• Non-jurisdictional • Upland-excavated shallow conveyance swale
SW S	0.64 ac	• Non-jurisdictional • Permitted stormwater pond (33 CFR 328.3(a))
SW T	2.72 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Upland-excavated pond for ornamental purposes
SW U	0.90 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Upland-excavated pond for ornamental purposes
East-west tributary through Wetland J	Approx. 2,050 LF	• Jurisdictional • RPW

Appendix 3: Description of Jurisdictional and Non-Jurisdictional Waters for SAJ-2017-00688-Siena Cove Approved Jurisdictional Determination

1. <u>Jurisdictional Wetlands and Waters</u>: The Corps utilized the guidance provided in the *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United Sates & Carabell v. United States* (Guidance) and 33 CFR 328.3(a) to identify which waters in the review area are properly subject to Corps jurisdiction. The Corps found that there are and are not jurisdictional waters within the review area.

A. <u>Tributary through Wetland J in northern extent of property: RPW that flows indirectly to a TNW</u>

The Corps determined that the unnamed tributary that flows from east to west in the northern extent of the review area through Wetland J is a relatively permanent water that flows indirectly to a TNW. The Guidance states that the Corps should exert jurisdiction over non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally. The Corps determined that the subject tributary satisfies this standard and is a jurisdictional RPW. In addition, pursuant to specific requirements of case law which apply to the 11th Circuit Court of Appeals jurisdiction, the Corps determined that the tributary satisfies the significant nexus standard. Thus, this water has a biological, chemical, and physical effect on the TNW that is not speculative or insubstantial.

(i) The Corps accessed the National Hydrographic Dataset (NHD) and confirmed that the subject tributary is categorized as perennial. See Figure 1.

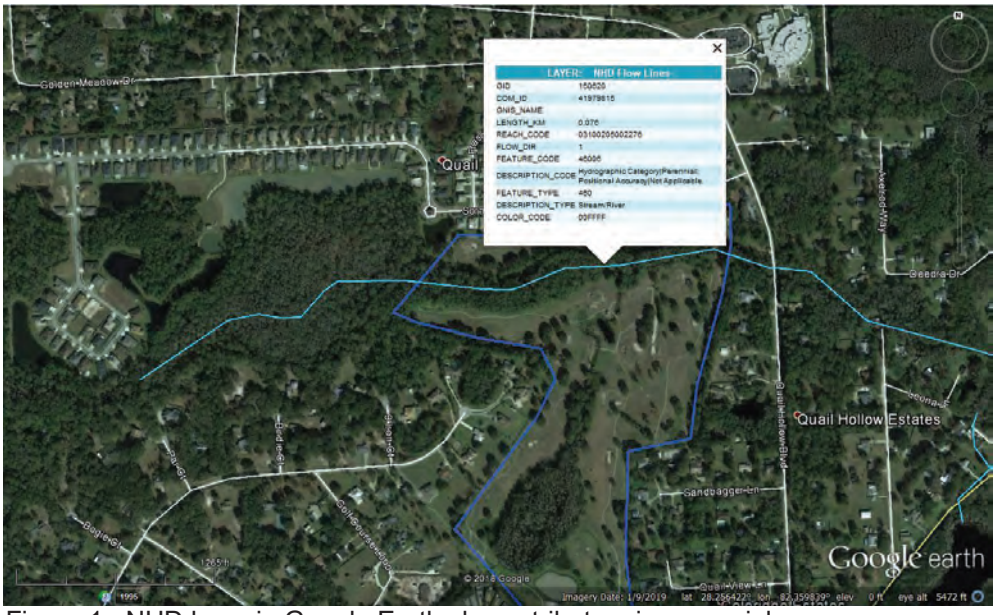

Figure 1. NHD layer in Google Earth shows tributary is perennial.

(ii) The Corps accessed the NHD and confirmed that the tributary flows into a TNW. The tributary flows west to Big Cypress Swamp, then south to Cypress Creek, then into the Hillsborough River (TNW). See Figures 2 and 3 below.

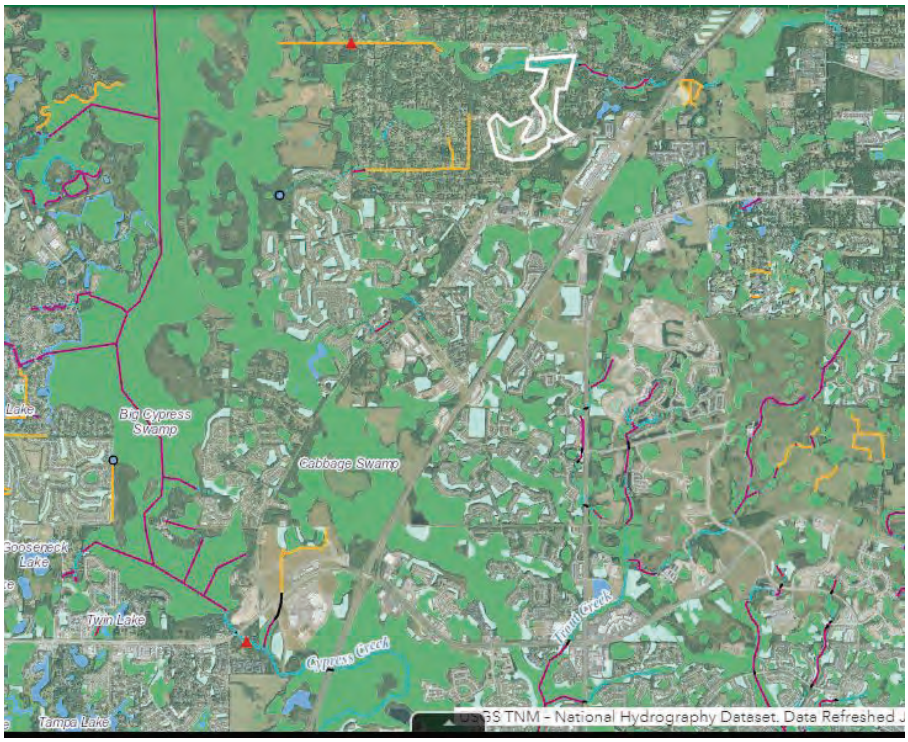

Figure 2. NHD layer showing flow path from site through tributary.

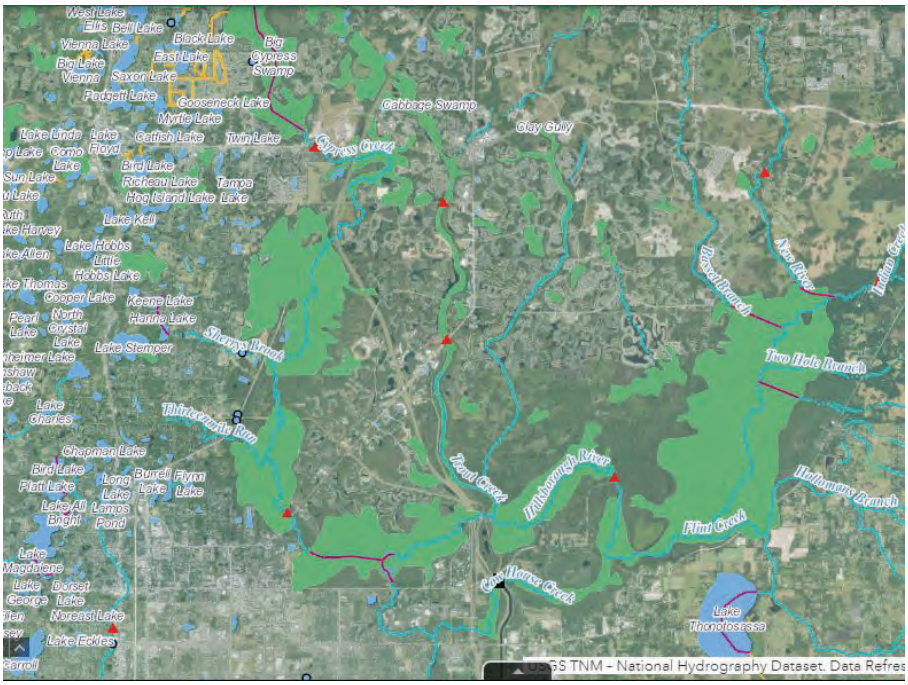

Figure 3. NHD layer showing flow path continuing south to Cypress Creek and Hillsborough River (TNW).

(iii) The Corps confirmed that multiple observed flow events, as well as the documented tributary characteristics, demonstrate the tributary exhibits a sufficient volume, duration and frequency of flow to be characterized as an RPW.

Information from the applicant's consultant, GHS Environmental (GHS) states the following:

"*Historically, Wetland J was a significant, flowing wetland strand that was channelized after 1957. A ditch was excavated on the north side of Wetland J that is approximately 8' to 10' below the natural grade of the historic wetland.*"

Historic aerial images obtained from the University of Florida from years 1941, 1952, 1957, 1967 and 1974 (contained in the administrative record) confirm this alteration.

The Corps observed the tributary characteristics, including active flow and physical indicators of flow in the tributary during the September 11, 2018, field visit. The tributary has a well-defined bed, bank and ordinary high water mark, and is approximately 15-20 feet wide and 8-10 feet deep at top of bank in the review area. See Figures 4 through 8 below. In addition, multiple flow events have been observed in this tributary, as documented by the applicant's environmental consultants and aerial photography. The Corps examined available aerial images in Google Earth over the period of 2003-2018. The Corps documented whether water is visible in the tributary in each of the available aerial images and correlated the image dates to available rainfall normality data using the Antecedent Rainfall Calculator. See Table 1 below. The Corps removed from the analysis any aerials taken during wetter than normal rainfall periods.

Figure 4. Photo of tributary taken by the Corps on September 11, 2018.

Figure 5. Photo of tributary taken by Roseanne Clementi (Clementi Environmental Consulting, LLC) at same location as Figure 4, as included in the *Quail Hollow Golf and Country Club Habitat Analysis* dated November 02, 2015.

Figure 6. Photo of tributary and water marks on old headwall taken by the Corps on September 11, 2018.

Figure 7. Photo of tributary taken by Roseanne Clementi (Clementi Environmental Consulting, LLC) at same location as Figure 6, as included in the *Quail Hollow Golf and Country Club Habitat Analysis* dated November 02, 2015.

Figure 8. Google Earth photo of tributary at Quail Hollow Blvd, dated February 2019. This location is directly to the east of the review area where the tributary is less incised.

Table 1. Rainfall data correlated to available Google Earth imagery.

Date of photo	Water observed in tributary?	Rainfall normality
December 31, 2003	Y	Normal conditions
May 14, 2004	Y	Normal conditions
February 28, 2006	Y	Normal conditions

September 30, 2006	Y	Normal conditions
May 07, 2007	Y	Normal conditions
December 31, 2007	Y	Normal conditions
April 24, 2012	Y	Drier than normal
January 25, 2013	Y	Drier than normal
March 14, 2013	Y	Drier than normal
January 17, 2014	Y	Normal conditions
February 12, 2016	Y	Normal conditions
January 11, 2017	Y	Drier than normal
March 15, 2018	Y	Drier than normal

This analysis indicates that for the available record, the tributary has standing or flowing water in all years observed, including during periods of drier than normal rainfall.

In light of these facts, the Corps determined that the tributary exhibits the appropriate connection to a TNW, as well as sufficient volume, duration and frequency of flow to be characterized as an RPW.

(iv) The Corps determined that the RPW and its adjacent wetlands have a significant nexus to the downstream TNW.

The Guidance states that agencies will consider the flow and functions of the tributary together with the functions performed by all the wetlands adjacent to that tributary in evaluating whether a significant nexus is present. Similarly, where evaluating significant nexus for an adjacent wetland, the agencies will consider the flow characteristics and functions performed by the tributary to which the wetland is adjacent along with the functions performed by the wetland and all other wetlands adjacent to that tributary. The following significant nexus determination therefore satisfies this obligation for both the subject tributary and the wetlands discussed in Section 1C below.

PHYSICAL: The subject tributary is a headwater stream of the Hillsborough River. Headwater streams reduce the amount of sediment delivered to downstream waters by trapping sediment from water and runoff. Headwater streams such as the subject RPW help to maintain base flow in the larger rivers downstream, which is particularly important in times of drought. At the same time, the network of headwater streams can regulate the flow of water into downstream waters, mitigating low flow and high flow extremes, reducing local and downstream flooding, and preventing excess erosion caused by flooding. The tributary receives rainfall and stormwater runoff from the adjacent land uses and transports this water and sediment load downstream. Flows from the tributary and similarly situated tributaries affect the duration, frequency and volume of freshwater flow into the Hillsborough River, the receiving TNW. NHD data as well as the observations discussed above document that the tributary has continuous flow for most months out of the year. This demonstrates that the tributary and other similarly situated waters in the watershed have more than an insubstantial or speculative effect on the physical integrity of the downstream TNW (Hillsborough River).

Adjacent wetlands connected to the stream network by channelized flow or overland flow are sources of downstream water and baseflow. They can also be sinks for water by intercepting overland or subsurface flow, if available water storage capacity of the wetlands is not exceeded, which can reduce or attenuate flow to downstream waters and flooding. The wetlands can temporarily store water following overbank flow, which can then move back to the stream over time as baseflow during drier periods. Riparian/floodplain forested wetlands such as those in the review area are sources of woody debris that can affect stream morphology and flow regime. The adjacent wetlands therefore affect the duration, frequency and volume of flow in the tributaries and the downstream TNW. The wetlands provide a means of slowing water's velocity and reducing the amount of sediments entering downstream waters. The holding capacity of adjacent wetlands helps control flooding. The braking action of wetland trees, roots and groundcover lowers flood heights and reduces erosion. The cumulative assessment includes approximately 156 acres of adjacent wetlands performing the aforementioned functions. These wetlands have more than an insubstantial or speculative effect on the physical integrity of the downstream TNW.

CHEMICAL: Headwater streams are responsible for most nutrient cycling and removal, and thus transforming and changing the amount of nutrients delivered to downstream waters. A close connection exists between the water quality of these streams and the water quality of downstream water bodies. Activities such as discharging a pollutant into one part of the tributary system are well documented to affect other parts of the system, even when the point of discharge is far upstream from the navigable water that experiences the effect of the discharge. The tributary transfers pollutants from the adjacent land uses to the downstream TNW. The most dominant land uses within the watershed are urban and built-up, and agriculture. Pollutants in the watershed and within the review area include animal wastes, fertilizers and pesticides (excess nitrogen and phosphorus), petroleum wastes, residential chemicals (from lawn maintenance), etc., which cumulatively have led to an impairment rating of Cypress Creek and the Hillsborough River. Among these impairments is dissolved oxygen. Low dissolved oxygen in water bodies is associated with excessive nutrient enrichment upstream. These chemical contributions occurring upstream negatively affect aquatic resources downstream and can contribute to eutrophication and algal blooms. The review area is a former golf course which was in operation for several decades. The site contains arsenic and dieldrin (organochloride) contamination in the soil, and arsenic contamination in the groundwater. The arsenic groundwater contamination is manifested in the shallow aquifer near the water table. Arsenic solubility and mobility increases with reducing conditions in the soil and is thereby dependent on water levels, seasonal fluctuations in the water table, and rainfall. Groundwater across the site travels toward the north/northeast toward the subject tributaries. The tributaries were excavated to depths near or below the water table. The tributaries are therefore susceptible to receiving and transporting heavy metals, fertilizers, pesticides and petroleum wastes downstream. This demonstrates an observable chemical functional

relationship between the subject tributary and similarly situated waters, and the downstream TNW.

Adjacent wetlands can be sinks for sediments and chemical contaminants, such as pesticides, metals, mercury and excess nutrients carried by overland or subsurface flow, potentially reaching downstream waters. They can be sinks for water, sediment, pesticides, and nutrients from overbank flow events, reducing or attenuating downstream peak flows and materials entrained in the water column. The wetlands can also be sinks for nitrogen by converting oxidized forms of nitrogen to molecular nitrogen through denitrification, which is then lost to the atmosphere. Cypress Creek and the Hillsborough River are both impaired waters for dissolved oxygen and other pollutants. The review area is a former golf course which was in operation for several decades. The site contains arsenic and dieldrin (organochloride) contamination in the soil, and arsenic contamination in the groundwater. The arsenic groundwater contamination is manifested in the shallow aquifer near the water table. Arsenic solubility and mobility increases with reducing conditions in the soil and is thereby dependent on water levels, seasonal fluctuations in the water table, and rainfall. In the wetland areas, the water table is near the surface for most of the year. The wetlands in this analysis assimilate decades of pesticide and fertilizer runoff from the golf course and adjacent land uses prior to discharge to the TNW. Similarly, the wetlands which have a more intermittent surface hydrologic connection with the subject RPW effectively hold pollutants back and thus perform filtering and storage functions for a longer period, further reducing pollutant loads downstream in the Hillsborough River and ultimately Tampa Bay. These functions are essential to the integrity of the water quality downstream and are more than speculative or insubstantial.

BIOLOGICAL: Headwater streams such as the subject RPW provide habitat and protection for amphibians, fish, and other aquatic or semi-aquatic species living in and near the stream that may use the downstream waters for other portions of their life stages. They also serve as migratory corridors for fish. Tributaries can improve or maintain biological integrity and control water temperatures in the downstream waters. Headwater streams serve as a source of food materials such as insects, larvae, and organic matter to nourish the fish, mammals, amphibians, and other organisms in downstream waters. Disruptions in these biological processes affect the ecological functions of the entire downstream system. The subject tributary, in combination with similarly situated tributaries, provide foraging habitat for wading birds where appropriate depths occur, as well as habitat for reptiles, amphibians, small fish and aquatic insects, including species which move between aquatic and upland environments during their life cycles. Aquatic resources downstream may be negatively affected by water quality impairments from upstream pollutants, including low dissolved oxygen resulting from toxic algae blooms due to eutrophication.

Adjacent wetlands are sources of dissolved organic matter that aquatic food webs use. They are sources of organisms, including plants, invertebrates, amphibians, reptiles,

and fish, to downstream waters transported via passive or active dispersal. The wetlands provide feeding habitat for riverine organisms, such as fish, during periods of overbank flow. They provide refuge for fish, aquatic insects, or other lotic organisms from predators or other environmental stressors, facilitating individual or population survival. The adjacent wetlands can provide refuge during certain life stages for lotic organisms. For example, they are breeding sites for frogs and other amphibians that reside in streams as adults. The subject wetlands and similarly situated wetlands are important biologically since a substantial amount of the historical wetland coverage in the watershed has been altered for residential and commercial development, and agriculture. Information supplied by the applicant and adjacent property owners documents that wildlife such as otters, turtles, fish and wading birds utilize the on-site wetlands. The adjacent floodplain wetlands of the subject tributary form an important intact corridor for the passage of wildlife and biological material, including detrital material transported to downstream food webs. The biological functions provided by the wetlands discussed in this JD are exported downstream to, and provide benefits to, the downstream TNW.

B. <u>Tributary SW L1/L2 along northeastern property boundary: RPW that flows indirectly to a TNW</u>

The Corps determined that SW L1/L2, which flows from south to north along the northeastern boundary of the review area is a relatively permanent water that flows indirectly to a TNW. The Guidance states that the Corps should exert jurisdiction over non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally. The Corps determined that the subject tributary satisfies this standard and is a jurisdictional RPW. In addition, the Corps determined that the tributary satisfies the significant nexus standard. Thus, this water has a biological, chemical, and physical effect on the TNW that is not speculative or insubstantial.

(i) The Corps accessed the NHD to determine whether this water is categorized as perennial; however, this water is not categorized by the NHD.

(ii) The Corps accessed the NHD and confirmed that the tributary flows into a TNW. Based on aerial photographs and in-person observations, the tributary flows north into the east-west RPW in the northern extent of the review area, which flows west to Big Cypress Swamp, then south to Cypress Creek, then into the Hillsborough River (TNW). See Figures 2 and 3 above, and Figure 9 below.

Figure 9. 1974 aerial showing SW L1/L2 and connection to the other on-site RPW.

(iii) The Corps confirmed that multiple observed flow events, as well as the documented tributary characteristics, demonstrate the tributary exhibits a sufficient volume, duration and frequency of flow to be characterized as an RPW.

The Corps observed the tributary characteristics, including standing or flowing water and physical indicators of flow in the tributary during the September 11, 2018, and October 02, 2019, field visits. The tributary has a well-defined bed, bank and ordinary high water mark, and is between approximately 5 and 20 feet wide and 2-3 feet deep at top of bank in the review area. See Figures 10-12 below. In addition, multiple flow events have been observed in this tributary, as documented by aerial photography. The Corps examined available aerial images in Google Earth over the period of 2003-2018. The Corps documented whether water is visible in the tributary in each of the available aerial images and correlated the image dates to available rainfall normality data using the Antecedent Rainfall Calculator. See Table 2 below. The tributary is lined with trees which cover or shade most of the tributary and prevent an accurate determination of whether water is present for several of the images available in Google Earth. Table 2 only includes those aerial images in which the tributary was visible and an accurate determination could be made. The Corps also eliminated the aerials which were taken during wetter than normal rainfall periods.

Figure 10. Photo of tributary L1/L2 taken by the Corps on September 11, 2018, from the berm on the west side of the tributary in its northern extent.

Figure 11. Photo of tributary L1/L2 taken by the Corps on October 02, 2019, from the berm on the west side of the tributary in its central extent.

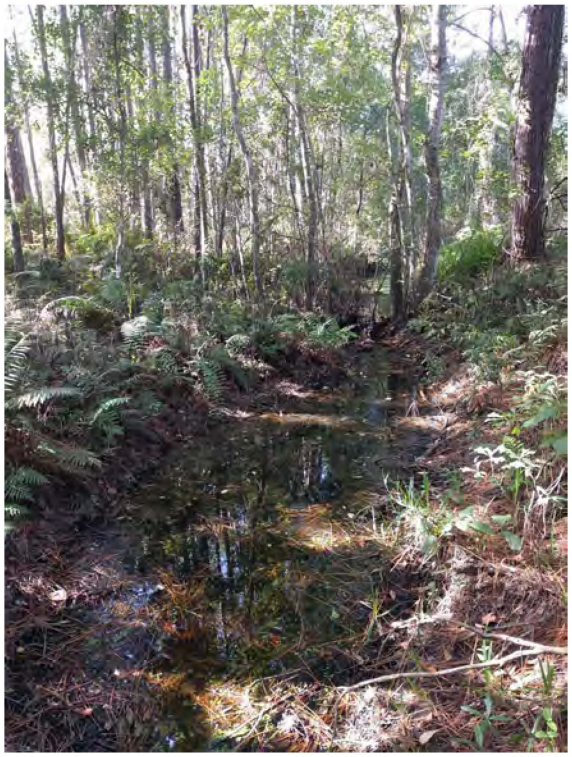

Figure 12. Photo of tributary L1/L2 taken by the Corps on October 02, 2019, in its northern extent.

Table 2. Rainfall data correlated to available Google Earth imagery.

Date of photo	Water observed in tributary?	Rainfall normality
December 31, 2003	Y	Normal conditions
May 14, 2004	Y	Normal conditions
September 30, 2006	Y	Normal conditions
December 31, 2007	Y	Normal conditions
January 25, 2013	N	Drier than normal
February 12, 2016	Y	Normal conditions

This analysis indicates that for the available record, the tributary has standing or flowing water in all years observed for aerials that were taken during normal rainfall conditions. The only available, discernible aerial which does not appear to show water in the tributary was taken during a period of drier than normal rainfall. In addition, the most recent in-person observation of standing or flowing water occurred on October 02, 2019, during a period of normal rainfall.

In light of these facts, the Corps determined that the tributary exhibits the appropriate connection to a TNW, as well as sufficient volume, duration and frequency of flow to be characterized as an RPW.

(iv) The Corps determined that the RPW and its adjacent wetlands have a significant nexus to the downstream TNW.

The Guidance states that agencies will consider the flow and functions of the tributary together with the functions performed by all the wetlands adjacent to that tributary in evaluating whether a significant nexus is present. The subject tributary appears to have one adjacent wetland, located directly east of the tributary, outside of the review area. The following significant nexus determination therefore satisfies this obligation for both the subject tributary and its adjacent wetland.

PHYSICAL: The subject tributary is a headwater stream of the Hillsborough River. Headwater streams reduce the amount of sediment delivered to downstream waters by trapping sediment from water and runoff. Headwater streams such as the subject RPW help to maintain base flow in the larger rivers downstream, which is particularly important in times of drought. At the same time, the network of headwater streams can regulate the flow of water into downstream waters, mitigating low flow and high flow extremes, reducing local and downstream flooding, and preventing excess erosion caused by flooding. The tributary receives rainfall and stormwater runoff from the adjacent land uses and transports this water and sediment load downstream. Flows from the tributary and similarly situated tributaries affect the duration, frequency and volume of freshwater flow into the Hillsborough River, the receiving TNW. The observations discussed above document that the tributary has continuous flow for most months out of the year. This demonstrates that the tributary and other similarly situated waters in the watershed have more than an insubstantial or speculative effect on the physical integrity of the downstream TNW (Hillsborough River).

Adjacent wetlands connected to the stream network by channelized flow or overland flow are sources of downstream water and baseflow. They can also be sinks for water by intercepting overland or subsurface flow, if available water storage capacity of the wetlands is not exceeded, which can reduce or attenuate flow to downstream waters and flooding. The wetlands can temporarily store water following overbank flow, which can then move back to the stream over time as baseflow during drier periods. Adjacent forested wetlands such as those adjacent to the RPW are sources of woody debris that can affect stream morphology and flow regime. The adjacent wetlands therefore affect the duration, frequency and volume of flow in the tributaries and the downstream TNW. The wetlands provide a means of slowing water's velocity and reducing the amount of sediments entering downstream waters. The holding capacity of adjacent wetlands helps control flooding. The braking action of wetland trees, roots and groundcover lowers flood heights and reduces erosion. The cumulative assessment includes approximately 1.4 acres of adjacent wetlands performing the aforementioned functions. These wetlands and similarly situated wetlands in the watershed have more than an insubstantial or speculative effect on the physical integrity of the downstream TNW.

CHEMICAL: Headwater streams are responsible for most nutrient cycling and removal, and thus transforming and changing the amount of nutrients delivered to downstream

waters. A close connection exists between the water quality of these streams and the water quality of downstream water bodies. Activities such as discharging a pollutant into one part of the tributary system are well documented to affect other parts of the system, even when the point of discharge is far upstream from the navigable water that experiences the effect of the discharge. The tributary transfers pollutants from the adjacent land uses to the downstream TNW. The most dominant land uses within the watershed are urban and built-up, and agriculture. Pollutants in the watershed and within the review area include animal wastes, fertilizers and pesticides (excess nitrogen and phosphorus), petroleum wastes, residential chemicals (from lawn maintenance), etc., which cumulatively have led to an impairment rating of Cypress Creek and the Hillsborough River. Among these impairments is dissolved oxygen. Low dissolved oxygen in water bodies is associated with excessive nutrient enrichment upstream. These chemical contributions occurring upstream negatively affect aquatic resources downstream and can contribute to eutrophication and algal blooms. The review area is a former golf course which was in operation for several decades. The site contains arsenic and dieldrin (organochloride) contamination in the soil, and arsenic contamination in the groundwater. The arsenic groundwater contamination is manifested in the shallow aquifer near the water table. Arsenic solubility and mobility increases with reducing conditions in the soil and is thereby dependent on water levels, seasonal fluctuations in the water table, and rainfall. Groundwater across the site travels toward the north/northeast toward the subject tributaries. The tributaries were excavated to depths near or below the water table. The tributaries are therefore susceptible to receiving and transporting heavy metals, fertilizers, pesticides and petroleum wastes downstream. This demonstrates an observable chemical functional relationship between the subject tributary and similarly situated waters, and the downstream TNW.

Adjacent wetlands can be sinks for sediments and chemical contaminants, such as pesticides, metals, mercury and excess nutrients carried by overland or subsurface flow, potentially reaching downstream waters. They can be sinks for water, sediment, pesticides, and nutrients from overbank flow events, reducing or attenuating downstream peak flows and materials entrained in the water column. The wetlands can also be sinks for nitrogen by converting oxidized forms of nitrogen to molecular nitrogen through denitrification, which is then lost to the atmosphere. Cypress Creek and the Hillsborough River are both impaired waters for dissolved oxygen and other pollutants. The review area is a former golf course which was in operation for several decades. The site contains arsenic and dieldrin (organochloride) contamination in the soil, and arsenic contamination in the groundwater. In addition, the tributaries are adjacent to roadways and residential development. The arsenic groundwater contamination is manifested in the shallow aquifer near the water table. Arsenic solubility and mobility increases with reducing conditions in the soil and is thereby dependent on water levels, seasonal fluctuations in the water table, and rainfall. In the wetland areas, the water table is near the surface for most of the year. The wetlands in this analysis assimilate decades of pesticide and fertilizer runoff from the golf course and adjacent land uses

prior to discharge to the TNW. These functions are essential to the integrity of the water quality downstream and are more than speculative or insubstantial.

BIOLOGICAL: Headwater streams such as the subject RPW provide habitat and protection for amphibians, fish, and other aquatic or semi-aquatic species living in and near the stream that may use the downstream waters for other portions of their life stages. They also serve as migratory corridors for fish. Tributaries can improve or maintain biological integrity and control water temperatures in the downstream waters. Headwater streams serve as a source of food materials such as insects, larvae, and organic matter to nourish the fish, mammals, amphibians, and other organisms in downstream waters. Disruptions in these biological processes affect the ecological functions of the entire downstream system. The subject tributary, in combination with similarly situated tributaries, provide foraging habitat for wading birds where appropriate depths occur, as well as habitat for reptiles, amphibians, small fish and aquatic insects, including species which move between aquatic and upland environments during their life cycles. Aquatic resources downstream may be negatively affected by water quality impairments from upstream pollutants, including low dissolved oxygen resulting from toxic algae blooms due to eutrophication.

Adjacent wetlands are sources of dissolved organic matter that aquatic food webs use. They are sources of organisms, including plants, invertebrates, amphibians, reptiles, and fish, to downstream waters transported via passive or active dispersal. The wetlands provide feeding habitat for riverine organisms, such as fish, during periods of overbank flow. They provide refuge for fish, aquatic insects, or other lotic organisms from predators or other environmental stressors, facilitating individual or population survival. The adjacent wetlands can provide refuge during certain life stages for lotic organisms. For example, they are breeding sites for frogs and other amphibians that reside in streams as adults. The subject wetlands and similarly situated wetlands are important biologically since a substantial amount of the historical wetland coverage in the watershed has been altered for residential and commercial development, and agriculture. Information supplied by the applicant and adjacent property owners documents that wildlife such as otters, turtles, fish and wading birds utilize the on-site wetlands. Adjacent wetlands of the subject tributary form an important intact corridor for the passage of wildlife and biological material, including detrital material transported to downstream food webs. These functions provided by the adjacent wetlands are exported downstream to, and provide benefits to, the downstream TNW.

C. <u>On-site wetlands: Wetlands adjacent to an RPW</u>

According to the Guidance alone, the Corps should exert jurisdiction over adjacent wetlands that have a continuous surface connection to such tributaries. As stated in the Guidance, a continuous surface connection exists between a wetland and an RPW where the wetland directly abuts the tributary (e.g., they are not separated by uplands, a berm, dike or similar feature. The wetlands listed in Table 3 exhibit a continuous surface connection to the RPW that flows through Wetland J, as described in the

Guidance. In addition, pursuant to specific requirements of case law which apply to the 11th Circuit Court of Appeals jurisdiction, the Corps determined that the wetlands in Table 3 satisfy the significant nexus standard. Thus, these wetlands have a biological, chemical, and physical effect on the TNW that is not speculative or insubstantial.

(i) The Corps determined the geographic extent of the on-site wetlands and verified the wetland delineation on-site on September 11, 2018. The site contains a total of 33.81 acres of wetlands. These wetlands consists of natural cypress systems and their contiguous shallow open water/littoral portions. These features were excavated at least partially in wetlands and share a continuous surface water connection with the natural forested systems. These wetland expansions are considered in the total wetland acreage as they cannot be distinguished hydrologically from the natural systems. See Appendix 1 for the wetland maps.

Table 3. Jurisdictional wetlands adjacent to an RPW in the review area

Aquatic resource name	Size	JD status
Wetland A incl. SW A	0.65 ac	• Jurisdictional • Wetland adjacent to an RPW • SW A excavated in wetlands; expansion of Wetland A; shares a surface hydrologic connection w/ Wetland A
Wetland B incl. SW B1 & SW B2	4.77 ac	• Jurisdictional • Wetland adjacent to an RPW • SW B1 & B2 excavated in wetlands; expansion of Wetland B; shares a surface hydrologic connection w/ Wetland B
Wetland C incl. SW C1	1.82 ac	• Jurisdictional • Wetland adjacent to an RPW • SW C1 excavated in wetlands; expansion of Wetland C; shares a surface hydrologic connection w/ Wetland C
Wetland D1/D2 incl. SW D	0.47 ac	• Jurisdictional • Wetland adjacent to an RPW • SW D excavated in wetlands; expansion of Wetland D; shares a surface hydrologic connection w/ Wetland D
Wetland E incl. SW E1 & SW E2 & E3	9.37 ac	• Jurisdictional • Wetland adjacent to an RPW • SW E1, E2 & E3 excavated in wetlands; expansion of Wetland E; share a surface hydrologic connection w/ Wetland E
Wetland F	0.08 ac	• Jurisdictional • Wetland adjacent to an RPW
Wetland G incl. SW G	1.87 ac	• Jurisdictional • Wetland adjacent to an RPW • SW G excavated in wetlands; expansion of Wetland G; shares a surface hydrologic connection w/ Wetland G
Wetland H	0.45 ac	• Jurisdictional

		• Wetland adjacent to an RPW
Wetland I incl. SW I1, SW I2 & SW I3	7.92 ac	• Jurisdictional • Wetland adjacent to an RPW • SW I1 rerouted and excavated historic wetland flowway; SW I2 & I3 excavated in wetlands; expansions of Wetland I; share a surface hydrologic connection w/ Wetland I
Wetland J incl. SW J1 & J2	6.41 ac	• Jurisdictional • Wetland adjacent to an RPW • SW J1 rerouted and excavated historic wetland flowway; SW J2 excavated in wetlands; share a surface hydrologic connection w/ Wetland J and wetland to the north

(ii) The Corps determined the hydrologic connections between the on-site wetlands and the subject RPW.

From *Drainage Analysis for Siena Cove (Quail Hollow Golf Course Redevelopment)* by WRA Engineering, LLC (July 2018):

Existing drainage pattern: Stormwater runoff primarily flows from south to north from the project area before entering the main east-west channel located within the northern project limits. The southwest portion of the project area drains to the southwest into perimeter ditches which ultimately conveys water north to the same east-west channel/slough.

As described above, water flows from south to north into the east-west RPW, either within its geographic extent within the boundaries of the review area, or further downstream. The drainage analysis referenced above contains Pre-Development Drainage Maps of the review area which show in detail all of the hydrologic connections between the wetlands and the subject RPW (see Figures 13 and 14 below). As shown in the drainage maps, all of the on-site wetlands share an unbroken surface connection with the subject RPW. Wetlands I and J are contiguous with the subject RPW. The remaining wetlands flow through a series of off-site ditches or on-site surface water conveyances into on-site wetlands which have a contiguous connection with the subject RPW. Wetlands B, C and D abut an off-site ditch which flows along the perimeter of the review area before crossing Golf Course Loop and turning northwest to flow into the subject RPW west of the review area. Historic aerials and Google Earth imagery/photos show this ditch and flow route clearly. Wetlands A and G flow through on-site ditches and swales into Wetland I before entering the subject RPW. Wetland E shares a continuous surface connection with Wetland I and the subject RPW.

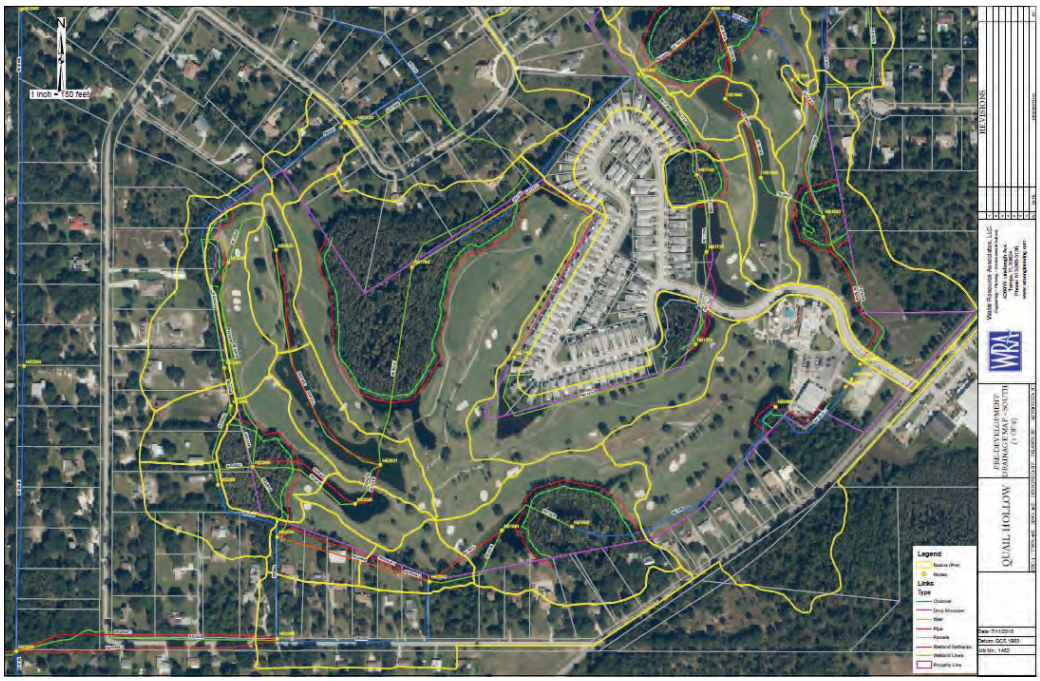

Figure 13. Pre-development drainage map by WRA Engineering, LLC (southern extent).

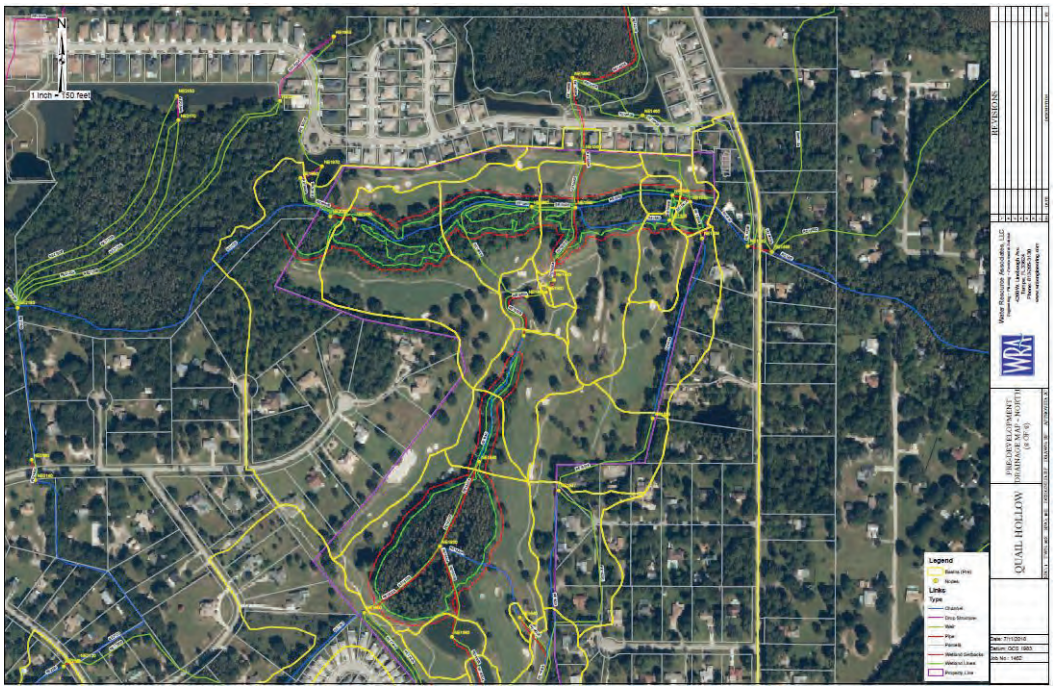

Figure 14. Pre-development drainage map by WRA Engineering, LLC (northern extent).

(iii) The Corps determined that the subject wetlands in Table 3 have a significant nexus to the downstream TNW. See Section 1(A)(iv) above.

In light of the continuous surface connection between the wetlands in Table 3 and the subject RPW, and a finding of positive significant nexus, the Corps determined that these wetlands are properly subject to Corps jurisdiction.

2. Non-jurisdictional waters and wetlands

The Corps determined that there are several waters and wetlands within the review area that are non-jurisdictional for the reasons discussed below.

A. Permitted stormwater ponds

Per 33 CFR 328.3, waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA are not waters of the United States. The following waters in Table 4 are permitted stormwater treatment systems and are therefore not subject to Corps jurisdiction.

Table 4. Non-jurisdictional stormwater ponds in the review area

Pond name	Size
SW F	0.53 ac
SW H1	1.02 ac
SW H2	0.37 ac
SW S	0.64 ac

B. Water features excavated in dry land for ornamental or irrigation purposes

Per the preamble to the 1986 Corps Regulations, the Corps generally does not consider artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing; or artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons; to be waters of the U.S. The Corps must evaluate whether these features would otherwise meet the definition of a water of the U.S.

The waters in Table 5 below do not meet the definition of waters of the U.S. for the reasons provided below.

Table 5. Non-jurisdictional waters excavated in dry land in the review area

Water name	Size	JD status
SW C	0.98 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Upland-excavated pond for ornamental purposes
SW K	0.15 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Upland-excavated pond for ornamental purposes
SW M	1.03 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Upland-excavated pond for ornamental purposes
SW N	1.65 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Permitted upland-excavated irrigation pond

SW T	2.72 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Upland-excavated pond for ornamental purposes
SW U	0.90 ac	• Non-jurisdictional per preamble to 1986 Regs and SWANCC decision • Upland-excavated pond for ornamental purposes

Historical aerials show that these waters were apparently excavated wholly in dry land. These waters have served the purpose of ornamental features or water hazards on the golf course for several decades, with the exception of SW N, which was excavated as an irrigation pond. See Figure 15 below.

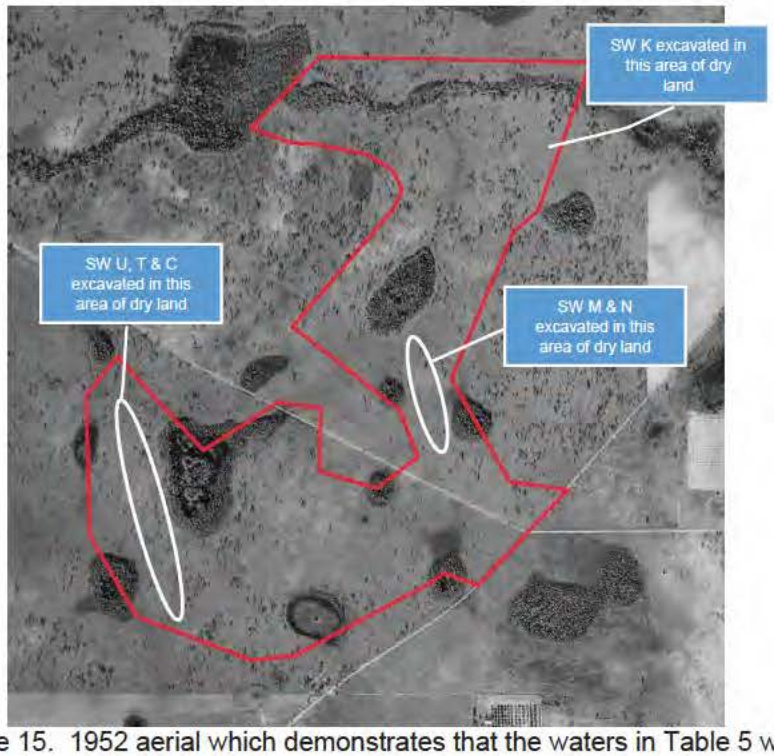

Figure 15. 1952 aerial which demonstrates that the waters in Table 5 were excavated in dry land.

- None of these ponds is currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, and is not subject to the ebb and flow of the tide. These waters do not flow beyond the bounds of the property lines. There is no potential for these waters to transport or bear goods into the stream of interstate commerce, or to provide any opportunity for recreation to an interstate traveler. Therefore, none of these ponds satisfies the criteria provided in 33 CFR 328.3(a)(1).

- The Corps determined that none of the waters is an interstate water or wetland. None of these waters straddles an interstate boundary. Therefore, none of these ponds satisfies the criteria provided in 33 CFR 328.3(a)(2).

- The waters in question are manmade features and would not be accurately described as natural ponds. These waters are located entirely within private property and could not be used by foreign or interstate travelers for recreational or other purposes, these waters do not support fisheries that could be taken and sold in interstate or foreign commerce, and there is no industrial use for these waters in interstate commerce. Thus, no use or degradation of these waters could directly affect interstate commerce. Therefore, none of these ponds satisfies the criteria provided in 33 CFR 328.3(a)(3).

- The Corps determined that none of these waters is an impoundment of waters otherwise defined as waters of the U.S. Therefore, none of these ponds satisfies the criteria provided in 33 CFR 328.3(a)(4).

- The Corps determined that none of the waters listed above is a tributary of waters defined in 33 CFR 328.3(a)(1-4). None of these waters conveys water outside of the review area. Thus, none of the waters satisfies 33 CFR 328.3(a)(5).

- The Corps determined that none of these inland waters is subject to the ebb and flow of the tide. Therefore, none of these waters could be defined as the territorial seas, and thus satisfy 33 CFR 328.3(a)6.

- The ponds listed above do not meet the definition of wetlands provided in 33 CFR 328.3(b). Thus, these ponds would not constitute wetlands adjacent to any waters identified in 33 CFR 328.3(a)1-6. Thus, none of these waters would satisfy the criteria provided in 33 CFR 328.3(a)7.

- The ponds listed above are intrastate waters for which the only potential basis for the exercise of Corps jurisdiction would be migratory bird use. Migratory bird use by itself is not a sufficient basis for the exercise of CWA regulatory jurisdiction (Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, 531 U.S. 159(2001)).

In light of these facts, the Corps determined that SW C, SW K, SW M, SW N, SW T and SW U are artificial ponds excavated in dry land that would not otherwise satisfy the definition of waters of the United States provided in 33 CFR 328.3(a).

C. <u>Shallow swales that do not have tributary characteristics or carry relatively permanent flow: SW I4, SW O, SW P, SW Q, SW R</u>

The Guidance states that the Corps generally will not assert jurisdiction over the swales or erosional features, and ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water. SW I4, SW O, SW P, SW Q and SW R are upland-excavated swales that do not exhibit tributary characteristics such as a well-defined bed, bank and ordinary high water mark, and do not appear to carry relatively permanent flow. These features serve as surface hydrologic conveyances,

connecting Wetlands A and G to the on-site RPW, but do not exhibit jurisdictional features. Figure 16 demonstrates that these features were excavated in apparent uplands. The Corps will not assert jurisdiction over these features.

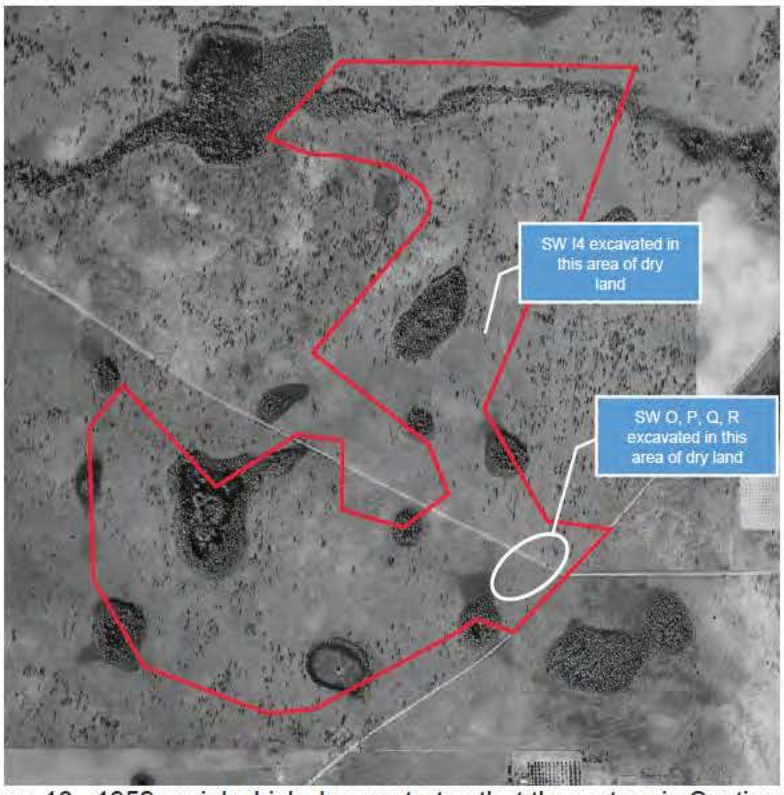

Figure 16. 1952 aerial which demonstrates that the waters in Section 2C were excavated in dry land.