



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): 1/22/19
B. DISTRICT OFFICE, FILE NAME, AND NUMBER: SAJ-1997-03967-JLC (WINTER HAVEN MUNICIPAL AIRPORT / AIRPORT MAINTENANCE AND REHABILITATION / POLK)
C. PROJECT LOCATION AND BACKGROUND INFORMATION: State: FL County/parish/borough: Polk City: Winter Haven
Center coordinates of site (lat/long in degree decimal format): Lat. 28.06333° N, Long. 81.759722° W.
Universal Transverse Mercator:
Name of nearest waterbody: Peace Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: NA
Name of watershed or Hydrologic Unit Code (HUC):
[X] 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):
[X] Office (Desk) Determination. Date: 1/22/19
[] Field Determination. Date(s):

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
[X] Relatively permanent waters2 (RPWs) that flow directly or indirectly into TNWs
[] Non-RPWs that flow directly or indirectly into TNWs
[X] 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 1.05 acres.
Wetlands: ~1.76 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

- [X] Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: (1) The project site contains two surface water features totaling 1.01 acres. The surface waters are man-made ponds that were excavated in dry land from non-wetland soils. The ponds do not drain wetlands or convey waters downstream to a water of the United States. These surface water features are non-jurisdictional based on the preamble to 33 CFR Part 328 in the November 13, 1986 Federal Register (51 FR 41217, Section 328.3). (2)

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: .

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). 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 waterbody⁴ 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: 32 square miles

Drainage area: Pick List

Average annual rainfall: 52 inches

Average annual snowfall: 0 inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through 7 tributaries before entering TNW.

Project waters are 15-20 river miles from TNW.

Project waters are 1 (or less) river miles from RPW.

Project waters are 5-10 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: .

Identify flow route to TNW⁵: The Winter Haven Chain of Lakes is at the headwaters of the Peace River - Charlotte Harbor watershed. The onsite canal connects Lake Mariana with Lake Jessie and drains directly into Lake Jessie. Lake

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

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.

Jessie flows through a navigable canal into Lake Idylwild (Section 10 waterbody) which then flows into Lake Cannon, Lake Howard, Lake May, Lake Shipp, through the Wahnetta Farm's Drainage Canal, into the Peace Creek Drainage Canal which outfalls into the Peace River (TNW). The Peace River discharges into Charlotte Harbor which ultimately connects to the Gulf of Mexico.

Tributary stream order, if known:

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

Tributary is: Natural
 Artificial (man-made). Explain: The lakes through which the tributary flows are natural. Canals connecting the lakes appear to have been dug prior to 1944 based on available topographic maps.
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: 30 feet
Average depth: feet
Average side slopes: **Vertical (1:1 or less).**

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:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Meandering**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Ephemeral flow**

Estimate average number of flow events in review area/year: **20 (or greater)**

Describe flow regime:

Other information on duration and volume:

Surface flow is: **Confined.** Characteristics:

Subsurface flow: **Unknown.** Explain findings:

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks
 OHWM⁶ (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.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: 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.
 tidal gauges
 other (list):

⁶A 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.

⁷Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: Within the Winter Haven Chain of Lakes (WHCL), 18 of the 25 lakes are designated as impaired by the FDEP.
In addition to nutrients and chlorophyll a, factors affecting quality in the WHCL include long-term land use and hydrologic alterations, stormwater runoff, historic point source discharges (particularly phosphorus), lake water levels, and hydrologic connections to forested wetlands and other lakes.
Identify specific pollutants, if known:

(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:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

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: _____ acres
Wetland type. Explain:
Wetland quality. Explain:
Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**
Characteristics:

Subsurface flow: **Pick List**. Explain findings:
 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 **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List**.
Estimate approximate location of wetland as within the **Pick List** 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:
Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

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

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately () 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)

Summarize overall biological, chemical and physical functions being performed:

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:

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 Winter Haven Chain of Lakes is at the headwaters of the Peace River - Charlotte Harbor watershed. The onsite canal connects Lake Mariana with Lake Jessie and drains directly into Lake Jessie. Lake Jessie flows through a navigable canal into Lake Idylwild (Section 10 waterbody) which then flows into Lake Cannon, Lake Howard, Lake May, Lake Shipp, through the Wahmeta Farm's Drainage Canal, into the Peace Creek Drainage Canal which outfalls into the Peace River (TNW). The Peace River discharges into Charlotte Harbor which ultimately connects to the Gulf of Mexico.

- 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:

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

Tributary waters: linear feet width (ft).

Other non-wetland waters: **0.37** acres.

Identify type(s) of waters: .

3. Non-RPWs⁸ 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: **The onsite wetland directly abuts and drains into Lake Jessie. Lake Jessie flows through a navigable canal into Lake Idylwild (Section 10 waterbody) which then flows into Lake Cannon, Lake Howard, Lake May, Lake Shipp, through the Wahneta Farm's Drainage Canal, into the Peace Creek Drainage Canal which outfalls into the Peace River (TNW). The Peace River discharges into Charlotte Harbor which ultimately connects to the Gulf of Mexico.**
- 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: **1.76** 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 jurisdictional. 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).

⁸See Footnote # 3.

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

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): **The site contains two ponds that were excavated in dry land from non-wetland soils.**

These features are non-jurisdictional based on the preamble to 33 CFR Part 328.

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).
- 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: Figure 3 Topographic Map; Figure 6 Wetland Map; Figure 6a Wetland Detail Map; .
- 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: Figure 4, NRCS Soils Map.

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.

- National wetlands inventory map(s). Cite name: .
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): .
or Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .



Notes:

- 1- Project No.: 600606
- 2- Data Source -
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 5/17/18
 Revised By:
 Checked By: KS

Explanation of Features

 Project Area





wood.

Wood Environment & Infrastructure Solutions, Inc.
 1101 Channeliside Drive, Ste #200
 Tampa, FL 33602
 CA 5392
 (813) 636 1500

Figure 1
Location Map
Runway 11-29 Rehabilitation
Ecological Services
Winter Haven, Florida



Notes:

- 1- Project No.: 600606
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Date: 5/17/18
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Explanation of Features



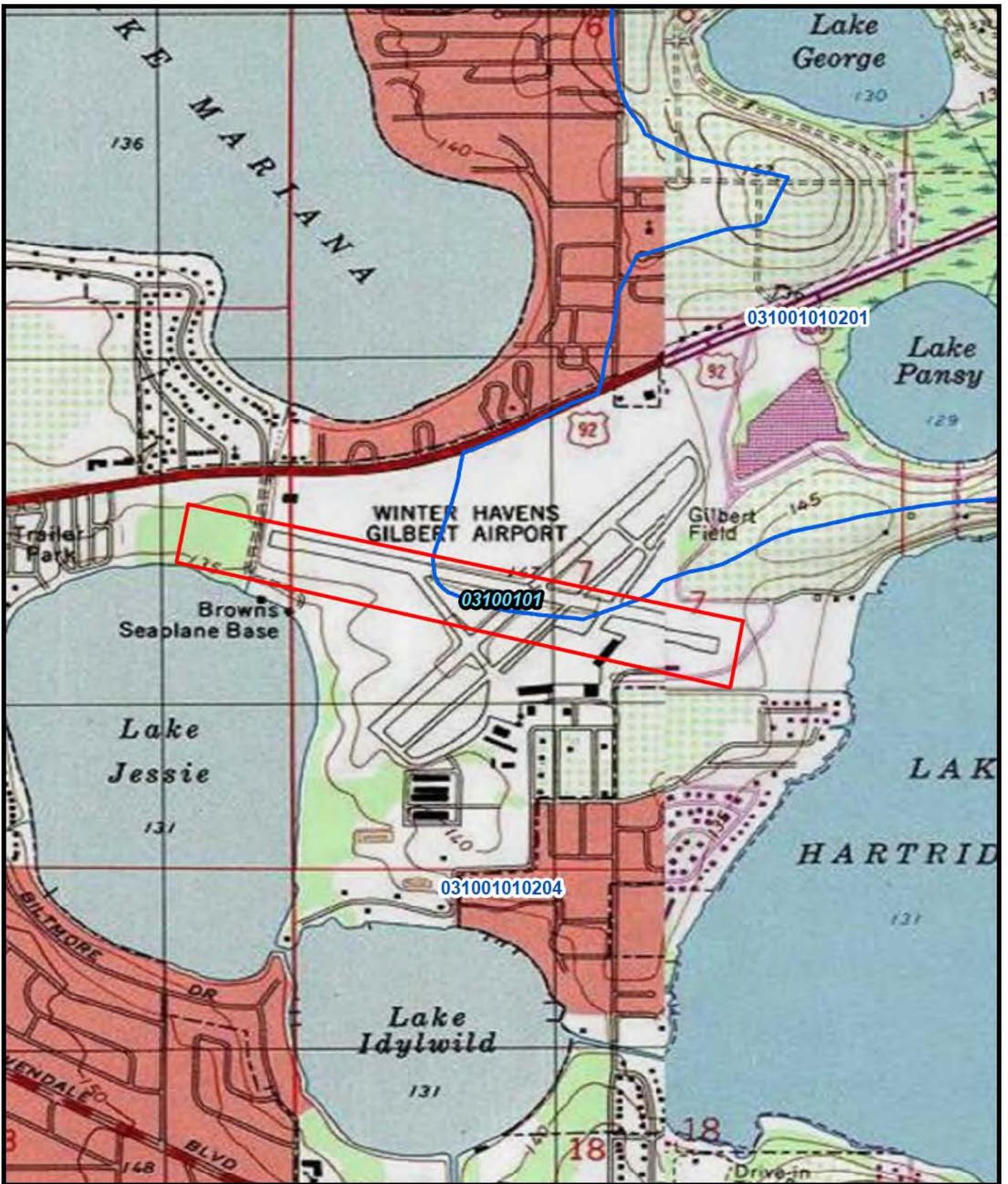
Project Area



wood.

Wood Environment & Infrastructure Solutions, Inc.
 1101 Channeliside Drive, Ste #200
 Tampa, FL 33602
 CA 5382
 (813) 636 1500

Figure 2
Aerial Map
Runway 11-29 Rehabilitation
Ecological Services
Winter Haven, Florida



Notes:

- 1- Project No.: 600606
- 2- Data Source -
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Date: 5/17/18
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Explanation of Features



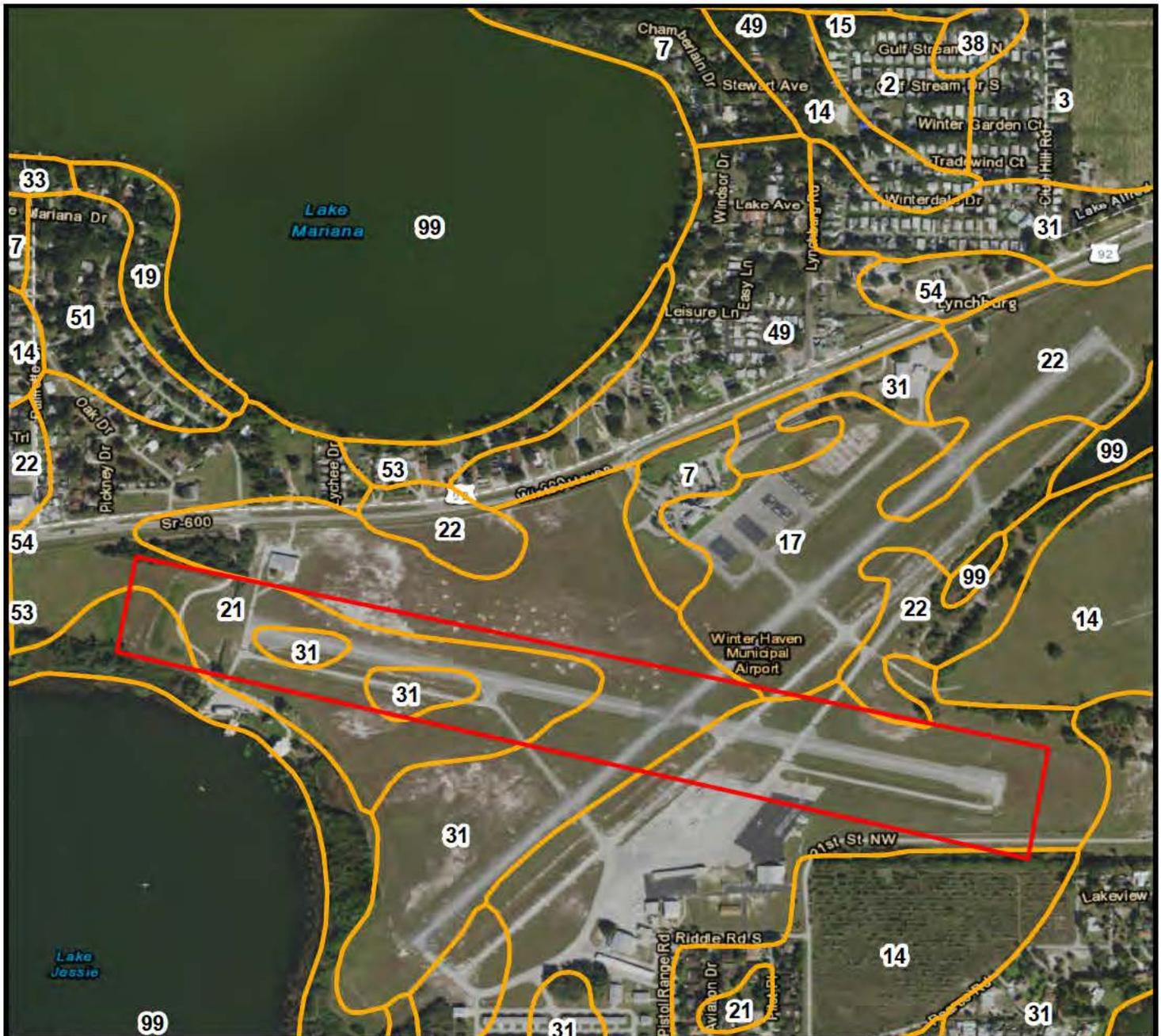
- Project Area
- HUC - 12
- HUC - 8



wood.

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 Infrastructure Solutions, Inc.
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 Tampa, FL 33602
 CA 5352
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Figure 3
Topographic Map
Runway 11-29 Rehabilitation
Ecological Services
Winter Haven, Florida



Soils

- | | |
|--|--|
| 14 - SPARR SAND, 0 TO 5 PERCENT SLOPES | 38 - ELECTRA FINE SAND |
| 15 - TAVARES FINE SAND, 0 TO 5 PERCENT SLOPES | 42 - FELDA FINE SAND |
| 17 - SMYRNA AND MYAKKA FINE SANDS | 49 - ADAMSVILLE-URBAN LAND COMPLEX |
| 19 - FLORIDANA MUCKY FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES | 51 - POMONA-URBAN LAND COMPLEX |
| 2 - APOPKA FINE SAND, 0 TO 5 PERCENT SLOPES | 53 - MYAKKA-IMMOKOLEE-URBAN LAND COMPLEX |
| 21 - IMMOKALEE SAND | 54 - POMELLO-URBAN LAND COMPLEX |
| 22 - POMELLO FINE SAND | 55 - SPARR-URBAN LAND COMPLEX, 0 TO 5 PERCENT SLOPES |
| 25 - PLACID AND MYAKKA FINE SANDS, DEPRESSIONAL | 61 - ARENTS, ORGANIC SUBSTRATUM-URBAN LAND COMPLEX |
| 3 - CANDLER SAND, 0 TO 5 PERCENT SLOPES | 63 - TAVARES-URBAN LAND COMPLEX |
| 31 - ADAMSVILLE FINE SAND, 0 TO 2 PERCENT SLOPES | 7 - POMONA FINE SAND |
| 33 - HOLOPAW FINE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES | 99 - WATER |

Notes:

- 1- Project No.: 600606
- 2- Data Source -
- 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 5/17/18
 Revised By
 Checked By KS

Explanation of Features

-  Project Area
-  NRCS Soils



0
1" =

wood.

Wood Environment & Infrastructure Solutions, Inc.
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 Tampa, FL 33602
 CA 5392
 (813) 636 1500

Figure 4
NRCS Soils Map
Runway 11-29 Rehabilitation
Ecological Services
Winter Haven, Florida



Land Use	
1100 - RESIDENTIAL LOW DENSITY < 2 DWELLING UNITS	4340 - HARDWOOD CONIFER MIXED
1200 - RESIDENTIAL MED DENSITY 2->5 DWELLING UNIT	5200 - LAKES
1300 - RESIDENTIAL HIGH DENSITY	5300 - RESERVOIRS
1400 - COMMERCIAL AND SERVICES	6150 - STREAM AND LAKE SWAMPS (BOTTOMLAND)
2200 - TREE CROPS	6410 - FRESHWATER MARSHES
	8100 - TRANSPORTATION

Notes:

- 1- Project No.: 600606
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Date: 5/17/18
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 Checked By: KS

Explanation of Features



wood.

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Figure 5
Land Use Map
Runway 11-29 Rehabilitation
Ecological Services
Winter Haven, Florida



NWI Wetlands	
	ESTUARINE AND MARINE DEEPWATER
	ESTUARINE AND MARINE WETLAND
	FRESHWATER EMERGENT WETLAND
	FRESHWATER FORESTED/SHRUB WETLAND
	FRESHWATER POND
	LAKE
	OTHER
	RIVERINE

Notes:
 1- Project No.: 600606
 2- Data Source -
 3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 6/29/2018
 Revised: KS
 Checked By: KS

Explanation of Features

Project Area

Wetland_line

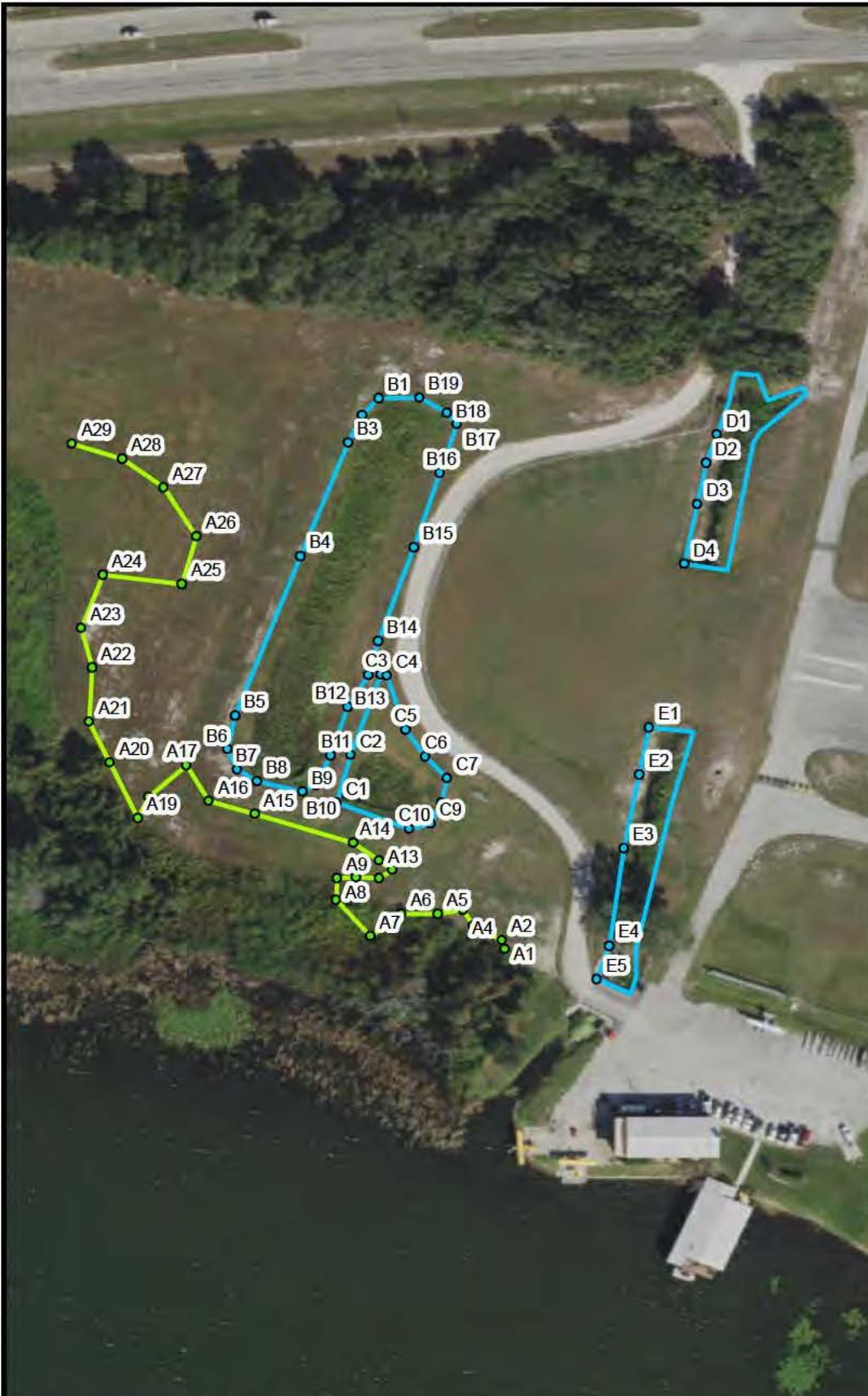
Surface_water

0 500
1" =

wood.

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Figure 6
Wetland Map
Runway 11-29 Rehabilitation
Ecological Services
Winter Haven, Florida



Wetland/OSW	Flag_ID	Lat	Lon
A	1	28.062784	-81.761300
A	2	28.062809	-81.761307
A	3	28.062850	-81.761388
A	4	28.062894	-81.761416
A	5	28.062882	-81.761486
A	6	28.062883	-81.761588
A	7	28.062820	-81.761675
A	8	28.062921	-81.761771
A	9	28.062983	-81.761768
A	10	28.062986	-81.761715
A	11	28.062982	-81.761650
A	12	28.063005	-81.761614
A	13	28.063031	-81.761651
A	14	28.063081	-81.761723
A	15	28.063161	-81.761998
A	16	28.063198	-81.762126
A	17	28.063298	-81.762189
A	18	28.063210	-81.762295
A	19	28.063151	-81.762325
A	20	28.063305	-81.762402
A	21	28.063419	-81.762460
A	22	28.063571	-81.762452
A	23	28.063681	-81.762481
A	24	28.063830	-81.762421
A	25	28.063804	-81.762201
A	26	28.063937	-81.762161
A	27	28.064074	-81.762252
A	28	28.064153	-81.762368
A	29	28.064196	-81.762508
B	1	28.064324	-81.761651
B	2	28.064276	-81.761697
B	3	28.064199	-81.761737
B	4	28.063882	-81.761870
B	5	28.063437	-81.762052
B	6	28.063342	-81.762074
B	7	28.063287	-81.762046
B	8	28.063253	-81.761992
B	9	28.063224	-81.761865
B	10	28.063243	-81.761827
B	11	28.063325	-81.761786
B	12	28.063461	-81.761738
B	13	28.063549	-81.761681
B	14	28.063645	-81.761654
B	15	28.063907	-81.761554
B	16	28.064115	-81.761481
B	17	28.064251	-81.761434
B	18	28.064283	-81.761461
B	19	28.064325	-81.761537
C	1	28.063194	-81.761769
C	2	28.063327	-81.761730
C	3	28.063551	-81.761646
C	4	28.063548	-81.761628
C	5	28.063398	-81.761577
C	6	28.063322	-81.761522
C	7	28.063261	-81.761461
C	8	28.063194	-81.761476
C	9	28.063135	-81.761507
C	10	28.063120	-81.761567
D	1	28.064222	-81.760707
D	2	28.064142	-81.760738
D	3	28.064027	-81.760762
D	4	28.063860	-81.760798
E	1	28.063404	-81.760897
E	2	28.063272	-81.760925
E	3	28.063066	-81.760967
E	4	28.062794	-81.761008
E	5	28.062700	-81.761043

Notes:

- 1- Project No.: 600606
- 2- Data Source -
- 3- This map is intended to be used for planning purposes only. It is not a survey.

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Explanation of Features

- Wetland Pt
- Wetland_line
- Surface Water Pt
- Surface_water



wood.

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Figure 6a
Wetland and OSW Detail Map
Runway 11-29 Rehabilitation
Ecological Services
Winter Haven, Florida

SAJ-1997-03967
WINTER HAVEN MUNICIPAL AIRPORT

192



Lake Jesse

Google earth

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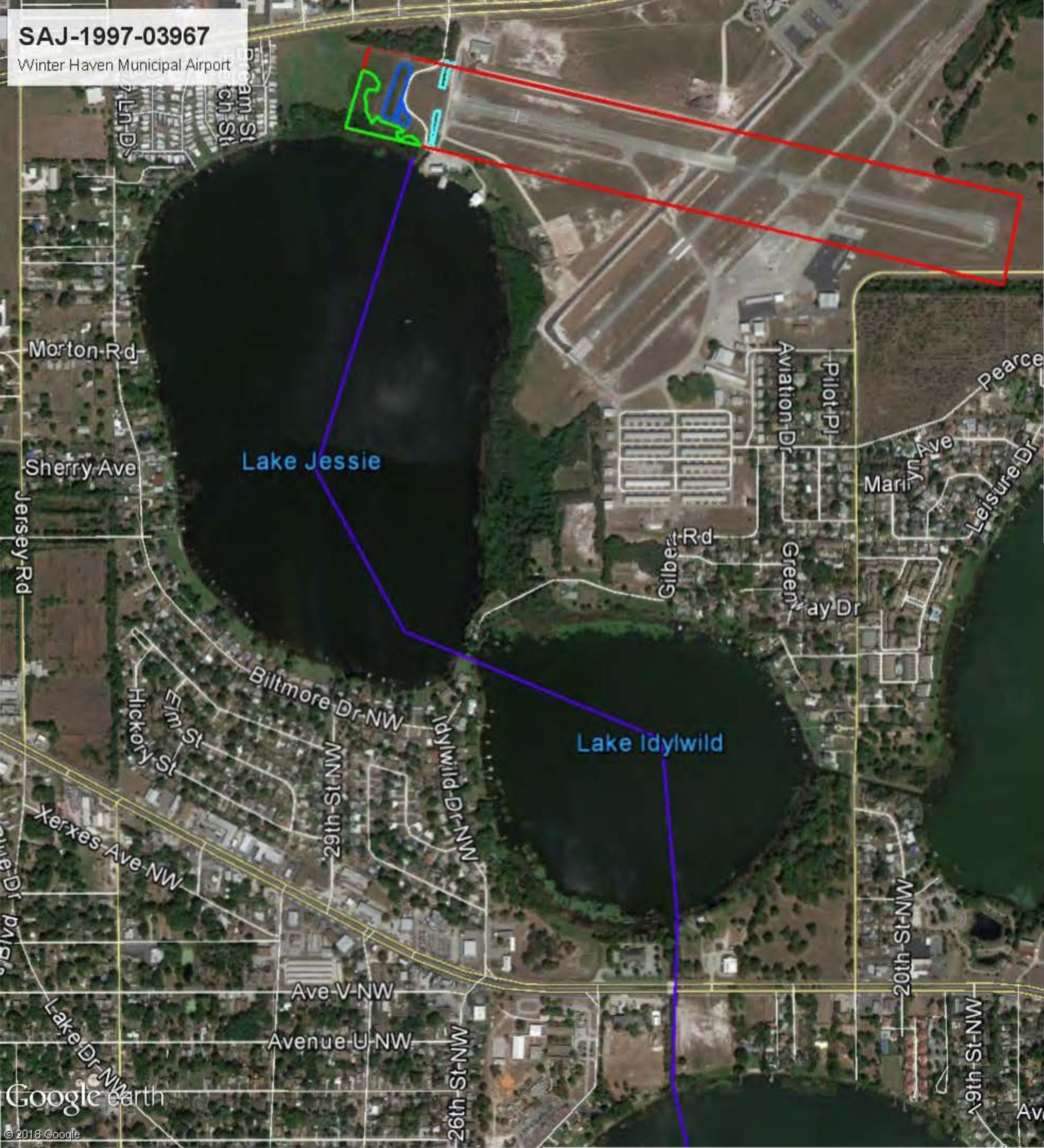
21st St NW

1000 ft



SAJ-1997-03967

Winter Haven Municipal Airport

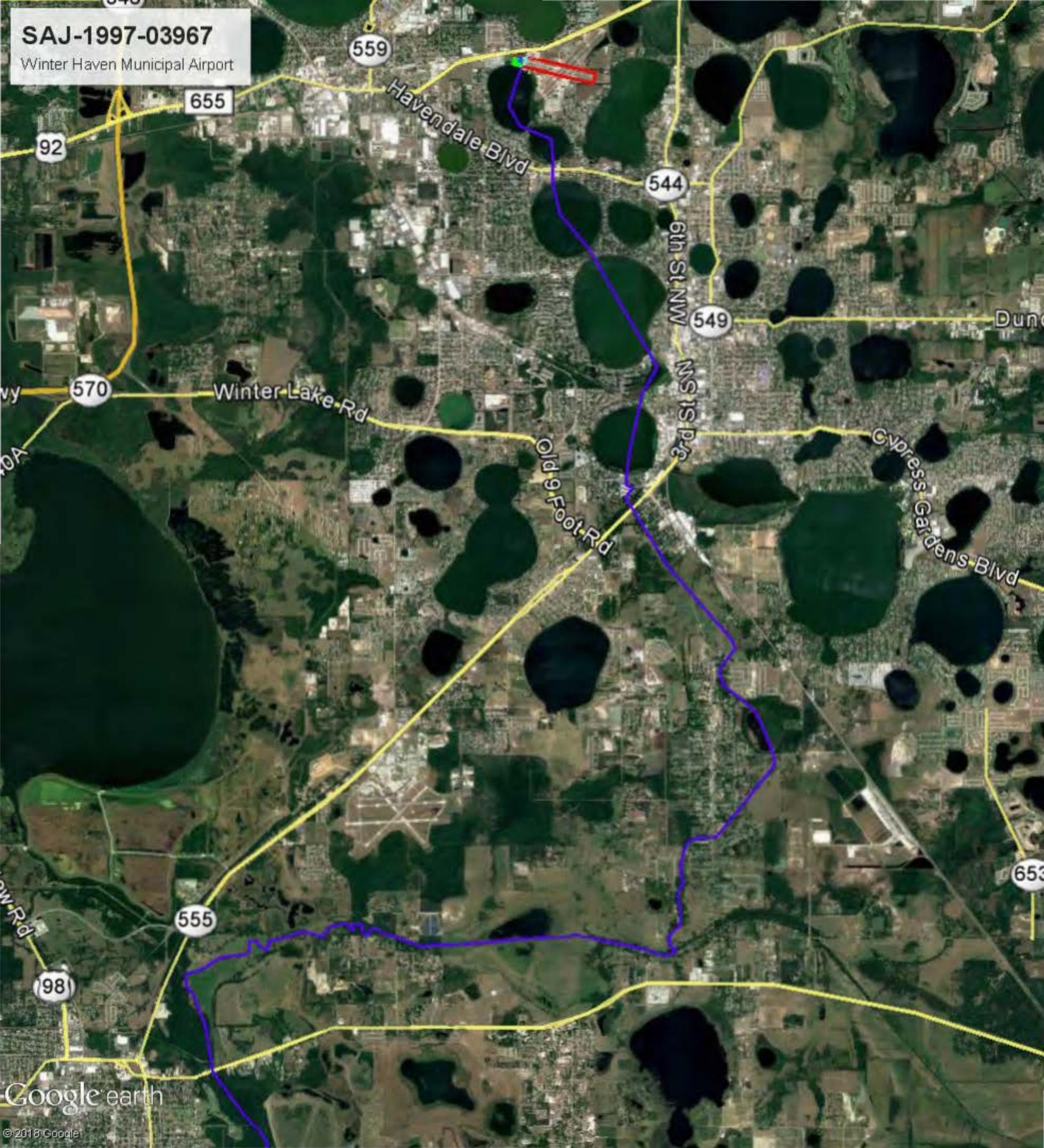


Lake Jessie

Lake Idylwild

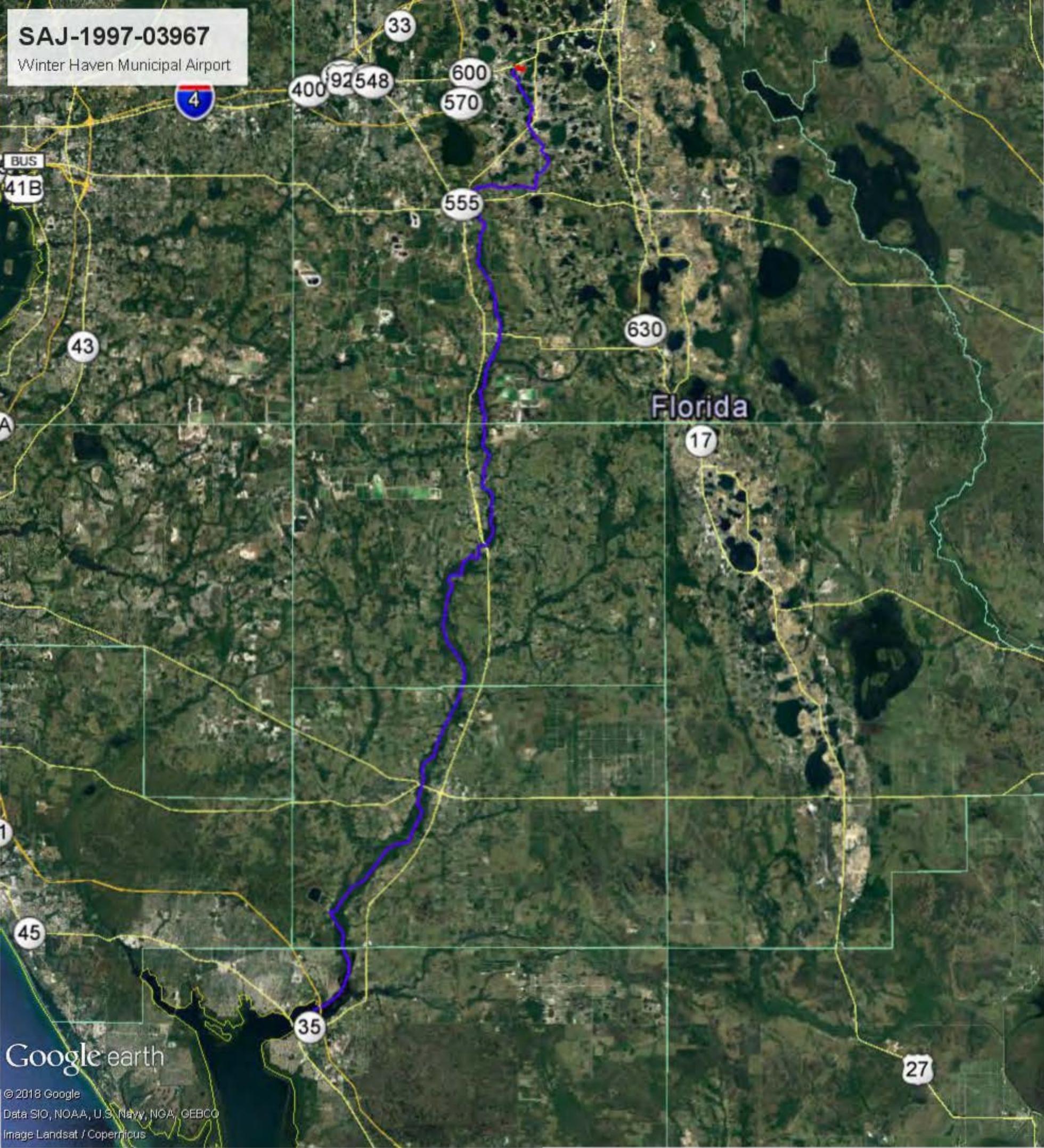
SAJ-1997-03967

Winter Haven Municipal Airport



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Winter Haven Municipal Airport



Florida

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