

**Okeechobee County Water Management
Report**

Proposed Site Improvements

for

Glenwood Park, LLC

City of Okeechobee, FL

Revised December 2022



ENGINEERING

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Purpose: The purpose of this report is to provide South Florida Water Management District (SFWMD) and City of Okeechobee County with the calculations and documentation necessary to demonstrate the proposed surface water management system complies with state and local criteria.

Existing Condition Description: The site is an open space lawn with trees and there were no previous improvements on site. There are two portions of the existing site: Block 110 which is the north portion that is enclosed between NE 5th Street, NE 3rd Ave., 4th Street, and NE 2nd Ave. with PARCEL ID: (3-15-37-35-0010-01100-0010). And Block 121 which the south portion enclosed between NE 4th Street, NE 3rd Ave., NE 3rd Street, and NE 2nd Ave. with PARCEL IDs: (3-15-37-35-0010-01210-0010 and 3-15-37-35-0010-01210-0010). Both are in portion of Section 15, Township 37 South, Range 35 East, City of Okeechobee.

The historic discharge for site block 110 is through a sheet flow going to the north and south swale of the and then discharging to an existing drainage structure on the northeast and southeast of the site while some flows are also contained in the site. The historic discharge for site block 121 is through a sheet flow going to the north and east swale of the and then discharging to an existing drainage structure on the northeast of the site while some flows are also contained in the site.

The Soils Report for Okeechobee County identifies the site soil as Immokalee fine sand with 0 to 2% slopes. This soil has a Hydrologic Soil Group rating of B/D which is poorly drained in the natural state and moderately drained in developed. The soils report also indicates the wet season water table is approximately 1' below natural ground. The average elevation where the pond is located is 25 which sets the wet season water table elevation to 24.

Proposed Use: The owner proposes construction of 28 Multi family rental units with associated storage, clubhouse, pool and parking. The project will be served by a dry detention stormwater collection system. The water and sewer will be served by the Okeechobee utility Authority.

Drainage Considerations: To attenuate the increased run-off generated by the proposed improvements and to ensure that water quality standards are met, we propose to pass all drainage from the pavement area through a dry detention system which will discharge to the west through north of Fire Station department by drainage pipe to swale. The dry detention basin is a S-133 basin which is controlled at 13.5 NGVD '29. The control elevation for the project will be the wet season water table at elevation 24. This will put the bottom of the pond at elevation 25.

Allowable discharge for the S-133 basin is 15.6 CSM for the 25 year – 3 day event:

$$Q = 15.6 \text{ cfs per square mile} * A / 640$$

$$Q1 = 15.6 \text{ cfs per square mile} * 2.07 / 640 = 0.05 \text{ cfs}$$

$$Q2 = 15.6 \text{ cfs per square mile} * 2.20 / 640 = 0.05 \text{ cfs}$$

A. Water Quality

Water quality treatment is provided in the form of dry detention.

Since the proposed water quality system is dry detention, the volume required is 100% of the calculated volume. However, since this project discharge into an impaired water basin and with a presumption of compliance with nutrient control by adding an additional 50% to the water quality volume the total water quality volume is see table below.

Based on the attached stage storage spreadsheet, the water quality volume see table below is met at elevation see table below. Total water quality required for 150% of the water quality volume and elevation for the two sites is see table below.

Water Quality Table

Basin	WQ Volume Required Ac-Ft	Elevation WQ Volume Met	WQ Volume Provided Ac-Ft
Onsite Blk 110	0.19	24.55	2.13
Onsite Blk 121	0.21	25.56	1.58

B. Water Quantity

This project is located in the S-133 which discharges ultimately into Lake Okeechobee through S-133 out of the rim canal. The allowable peak discharge rate in this basin is 15.6 CSM. The allowable peak discharge rate for this project, based on the 25-year, 72-hour storm event was calculated and shown below. The actual maximum discharge rate for the 10-year, 72-hour storm event was calculated and shown below, which is within tolerance of the maximum allowable peak rate. To demonstrate conformance to this criterion, the proposed project was flood-routed using AdICPR.

	Allowable Discharge	Modeled Discharge	Meets Criteria
Onsite Blk 110	0.05 CFS	0.30	No, but minimum bleeder
Onsite Blk 121	0.05 CFS	0.30	No, but minimum bleeder

The 10-year, 24-hour storm (5.0") w/ discharge, the 25 year, 72 hour storm (9") w/ discharge, and the 100 year, 72 hour storm (10") w/o discharge, were evaluated based on the proposed plan. Please refer to the attached AdICPR flood routing input/output parameters.

A summary of the flood routings for the Lake Node in each Phase is provided as follows:

	<u>10 Year, 24 Hr. Storm</u> <u>(5.0")</u>		<u>25 Year, 72 hr. Storm</u> <u>(9.0")</u>		<u>100 Year, 72 Hr. Storm</u> <u>(10.0")</u>
	Peak Stage (ft-NGVD'29)	Peak Rate (cfs)	Peak Stage (ft-NGVD'29)	Peak Rate (cfs)	Peak Stage (ft- NGVD'29)
Onsite Blk 110	25.07	0.28	25.35	0.30	26.19
Onsite Blk 121	26.08	0.28	26.36	0.30	27.18

Water Use: The proposed potable water and wastewater for the project will be provided by Okeechobee Utility Authority. The wastewater will be by septic tank.

There has been no Consumptive Water Use permit issued nor applied for this project. There are no existing wells onsite.

Off-Site Drainage: There is no offsite flow onto this property.

Flood Plain Analysis: As shown on the attached FEMA Panel 12093C0480C, property are in Zone X (Area of Minimal Flood Hazard) which is at area of minimal flood hazard.

Nutrient Analysis: As previously stated, the project proposes to provide 150% of the required water quality treatment volume in the dry detention system in order to meet the nutrient removal requirements.

Construction Recommendations: Runoff and/or any water generated by short-term dewatering during construction will be contained on-site. However, there is some potential for transport of sediment to off-site areas

should heavy rainfall occur. In order to reduce the potential of any off-site transport of sediment or turbidity we recommend installation and maintenance of temporary silt fence around the perimeter of the proposed project until site work has been completed and the site has been stabilized.

Conclusions: In my professional opinion, the proposed construction should have no impact to existing drainage patterns off-site and should have no impact on off-site areas. The recommendations above should be followed during and after the site work until such time as the ground surface has been adequately stabilized to prevent the off-site transport of any soil or suspended solids. The proposed design and construction will comply with applicable state and local requirements.

Basin Information For: Glenwood Park Blk 110

Total Basin Area	=	2.07 ac
Native Area	=	0.00 ac
Wetland Buffer / Preserve	=	0.00 ac
Total Basin Area (water quality)	=	2.07 ac
Impervious Area		
Roofline/Bldg.	=	0.35 ac
Wetland	=	0.00 ac
Lakes	=	0.00 ac
Pavement/Sidewalk	=	0.44 ac
Total Impervious Area	=	0.79 ac
Pervious Area		
Dry Detention	=	0.21 ac
Green	=	1.07 ac
Total Pervious Area	=	1.28 ac
Percent Impervious	=	38.2%
Adjusted Soil Storage	=	0.24 in
Calculated SCS Curve Number	=	95
Time of Concentration	=	10.00 min

Water Quality Calculation

1/2" Pretreatment x Parking Area	=	0.09 ac-ft
1" treatment x Project Area	=	0.17 ac-ft
Runoff from 2.5"x % net Impervious - SFWMD criteria	=	0.11 ac-ft
Required Water Quality Volume	=	0.17 ac-ft
Impaired Water body multiplier	=	1.13 .75*1.5
Adjusted Required Water Quality Volume	=	0.19 ac-ft
0.5 Water quality stage (0.09703125 ac-ft)	=	24.24 ft-NGVD
Water Quality Stage	=	24.55 ft-NGVD

Stage Storage Calculations for Basin Glenwood Park Blk 110

	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
Land use Category					23.50	24.00	24.50	25.00	25.50	26.00	26.50	27.00	27.50	28.00	28.50
Buildings	Vertical	0.35	28.40		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Dry Detention Bottom	Vertical	0.01	23.33		0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05
Dry Detention Slopes	Linear	0.21	23.33	25.00	0.00	0.03	0.09	0.18	0.28	0.39	0.49	0.60	0.70	0.81	0.91
Pavement	Linear	0.44	27.50	28.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.33
Green	Linear	1.07	24.00	26.00	0.00	0.00	0.07	0.27	0.60	1.07	1.61	2.14	2.68	3.21	3.75
	Total:	2.08		Totals:	0.00	0.03	0.16	0.46	0.90	1.48	2.13	2.77	3.42	4.17	5.07

Basin Information For: Glenwood Park Blk 121

Total Basin Area	=	2.20 ac
Native Area	=	0.00 ac
Wetland Buffer / Preserve	=	0.00 ac
Total Basin Area (water quality)	=	2.20 ac
Impervious Area		
Roofline/Bldg.	=	0.35 ac
Wetland	=	0.00 ac
Lakes	=	0.00 ac
Pavement/Sidewalk	=	0.46 ac
Total Impervious Area	=	0.81 ac
Pervious Area		
Dry Detention	=	0.22 ac
Green	=	1.17 ac
Total Pervious Area	=	1.39 ac
Percent Impervious	=	36.8%
Adjusted Soil Storage	=	0.25 in
Calculated SCS Curve Number	=	95
Time of Concentration	=	10.00 min

Water Quality Calculation

1/2" Pretreatment x Parking Area	=	0.09 ac-ft
1" treatment x Project Area	=	0.18 ac-ft
Runoff from 2.5"x % net Impervious - SFWMD criteria	=	0.11 ac-ft
Required Water Quality Volume	=	0.18 ac-ft
Impaired Water body multiplier	=	1.13 .75*1.5
Adjusted Required Water Quality Volume	=	0.21 ac-ft
0.5 Water quality stage (0.103125 ac-ft)	=	25.25 ft-NGVD
Water Quality Stage	=	25.56 ft-NGVD

Stage Storage Calculations for Basin Glenwood Park Blk 121

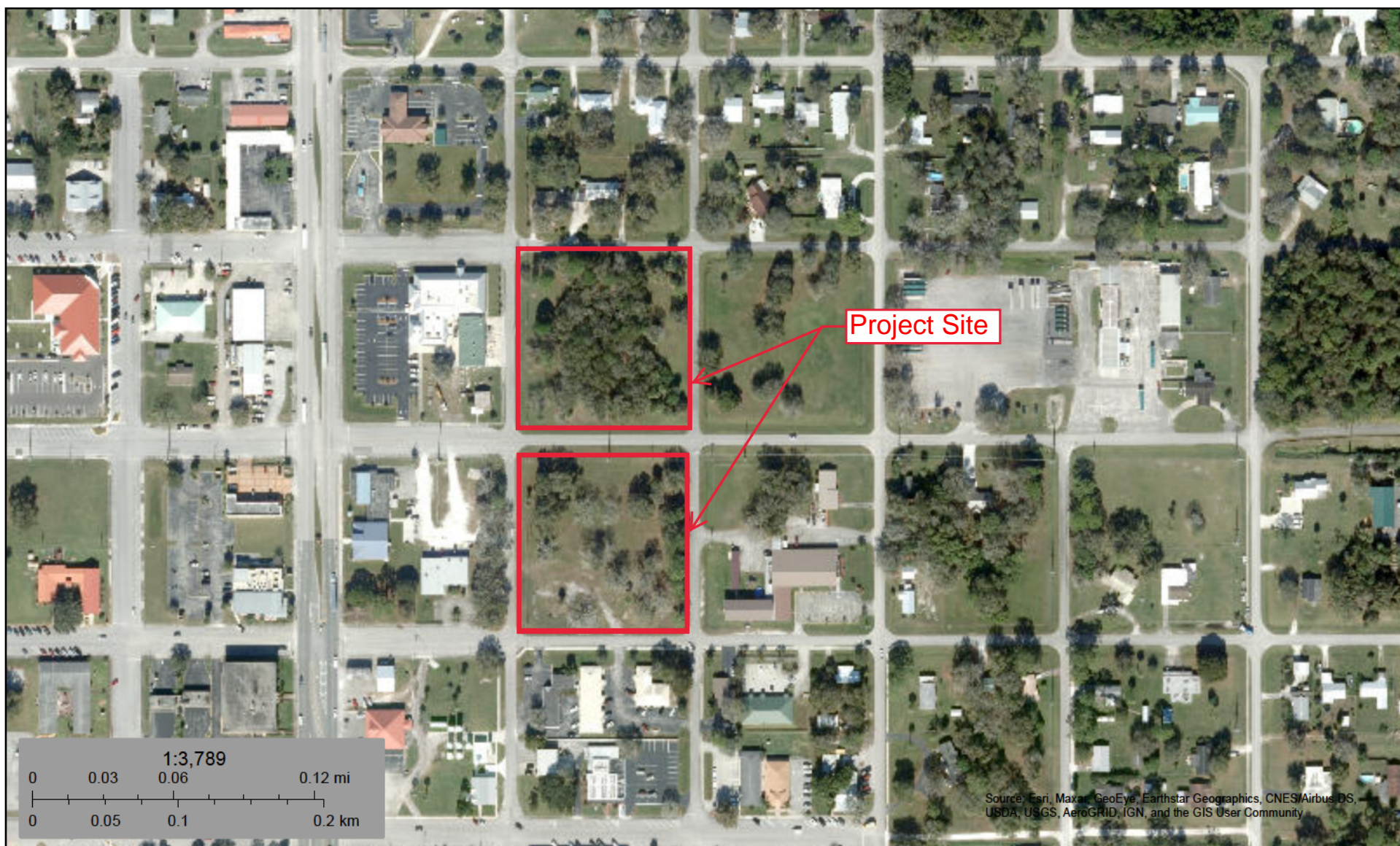
	Storage Type	Area (ac.)	From Elev.	To Elev.	Cumulative Stage-Storage (ac-ft)										
Land use Category					24.50	25.00	25.50	26.00	26.50	27.00	27.50	28.00	28.50	29.00	29.50
Buildings	Vertical	0.35	28.40		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.21	0.38
Dry Detention Bottom	Vertical	0.01	24.33		0.00	0.01	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05
Dry Detention Slopes	Linear	0.21	24.33	26.00	0.00	0.03	0.09	0.18	0.28	0.39	0.49	0.60	0.70	0.81	0.91
Pavement	Linear	0.46	27.50	28.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.35	0.58	0.81
Green	Linear	1.17	25.00	27.00	0.00	0.00	0.07	0.29	0.66	1.17	1.76	2.34	2.93	3.51	4.10
	Total:	2.20		Totals:	0.00	0.03	0.17	0.48	0.96	1.58	2.28	3.09	4.05	5.15	6.25



U.S. Fish and Wildlife Service

National Wetlands Inventory

Wetland Mapper



May 4, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

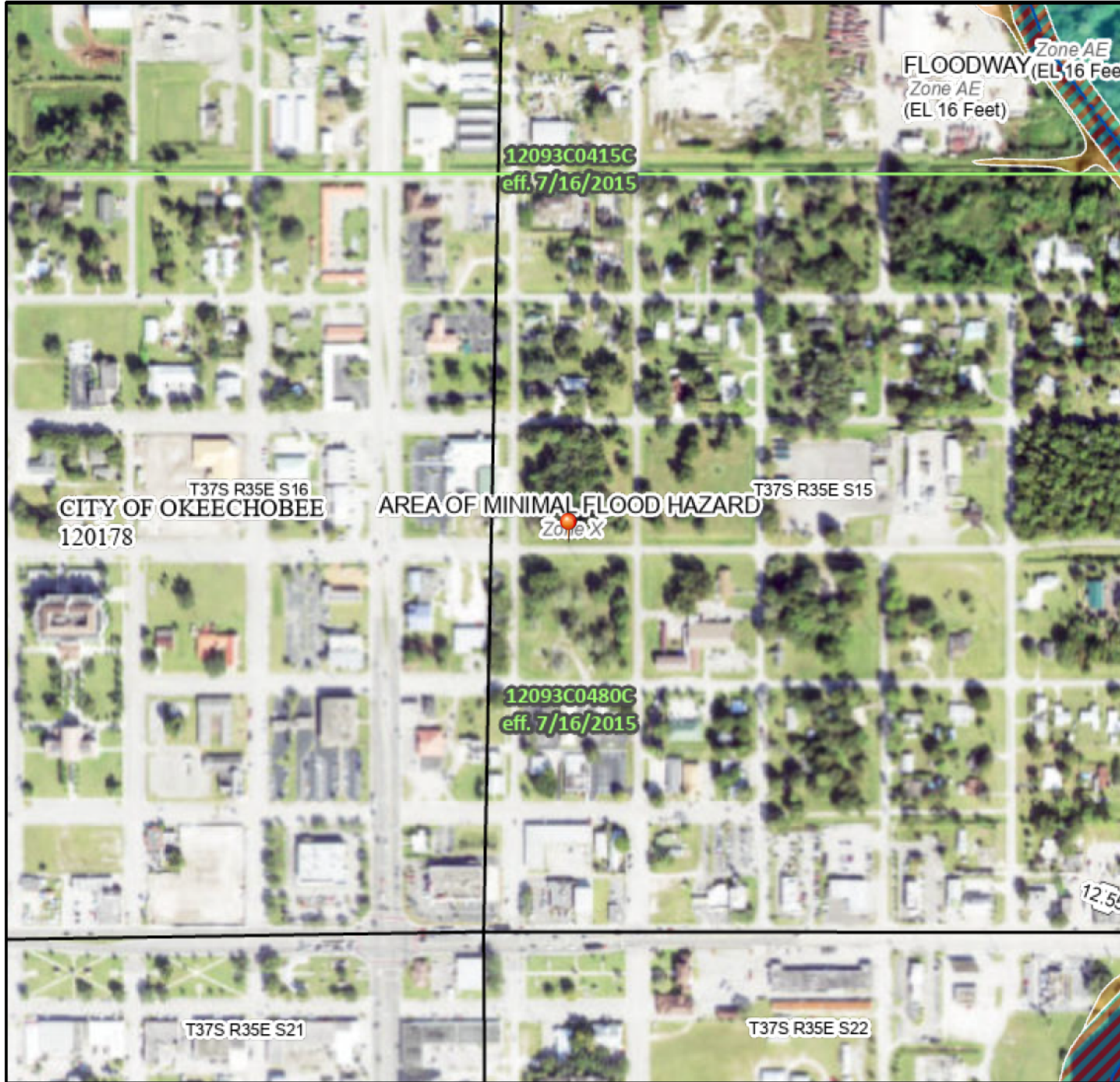
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Flood Hazard Layer FIRMette



80°50'W 27°15'N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		29.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **5/4/2022 at 10:28 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

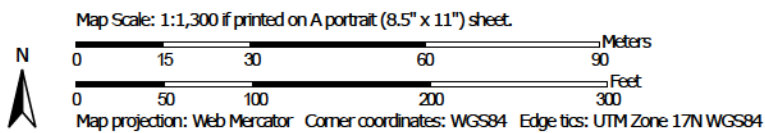
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

0 250 500 1,000 1,500 2,000 Feet 1:6,000

80°49'23"W 27°14'33"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020


Hydrologic Soil Group—Okeechobee County, Florida (Hydrologic Soil Group)



Hydrologic Soil Group—Okeechobee County, Florida
(Hydrologic Soil Group)

MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines


 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points






 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available


Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Okeechobee County, Florida

Survey Area Data: Version 19, Aug 26, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 25, 2019—Jan 29, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
11	Immokalee fine sand, 0 to 2 percent slopes	B/D	5.2	100.0%
Totals for Area of Interest			5.2	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

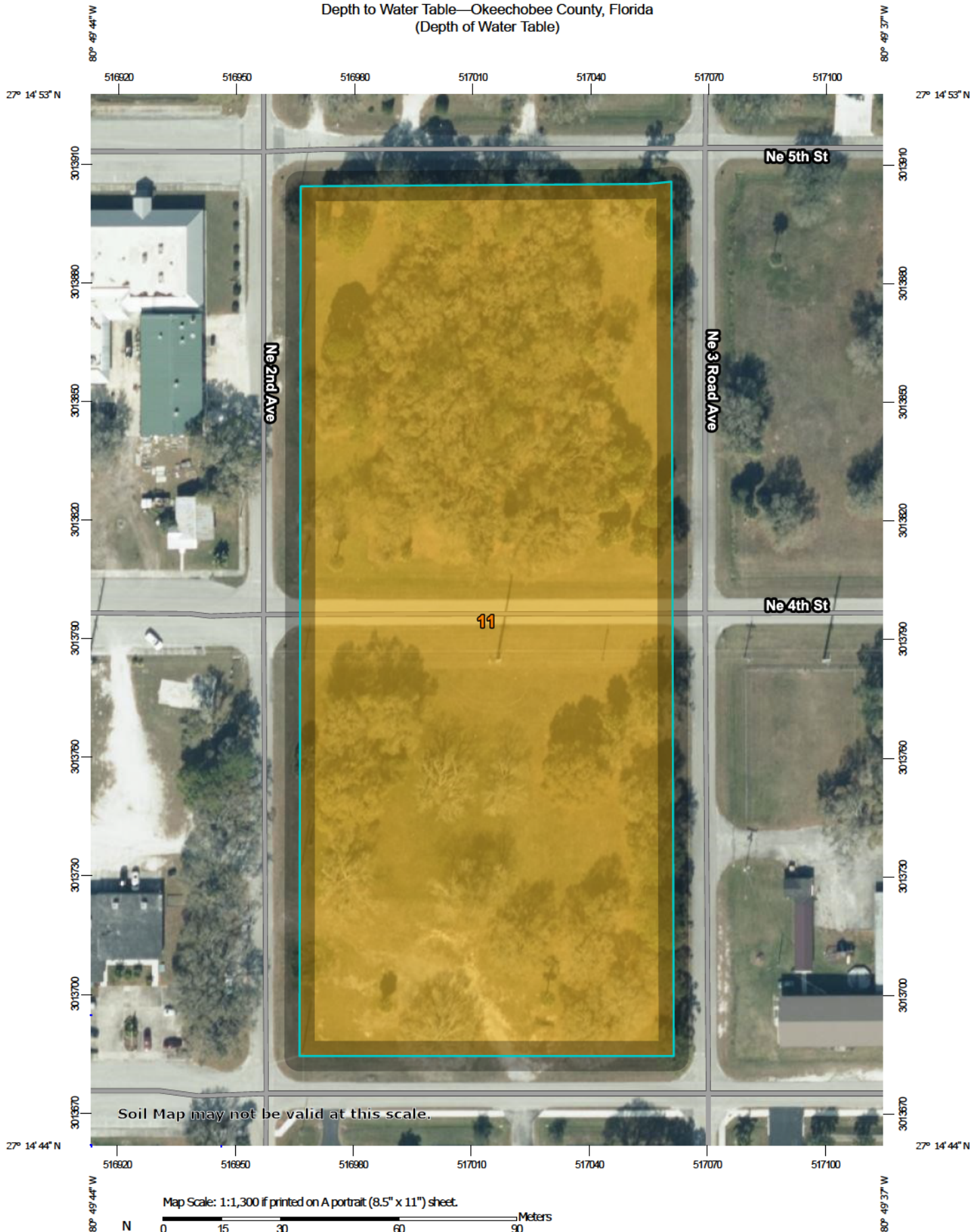
Rating Options

Aggregation Method: Dominant Condition

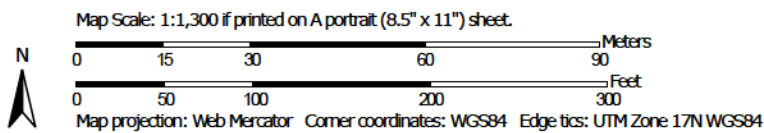
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Depth to Water Table—Okeechobee County, Florida (Depth of Water Table)



Soil Map may not be valid at this scale.



Natural Resources
Conservation Service


Web Soil Survey
National Cooperative Soil Survey

5/4/2022
Page 1 of 3

Depth to Water Table—Okeechobee County, Florida
(Depth of Water Table)








MAP LEGEND

Area of Interest (AOI)




 Area of Interest (AOI)

Soils




Soil Rating Polygons


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Lines


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Points






-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200

 Not rated or not available


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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Soil Survey Area: Okeechobee County, Florida
Survey Area Data: Version 19, Aug 26, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 25, 2019—Jan 29, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
11	Immokalee fine sand, 0 to 2 percent slopes	31	5.2	100.0%
Totals for Area of Interest			5.2	100.0%

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

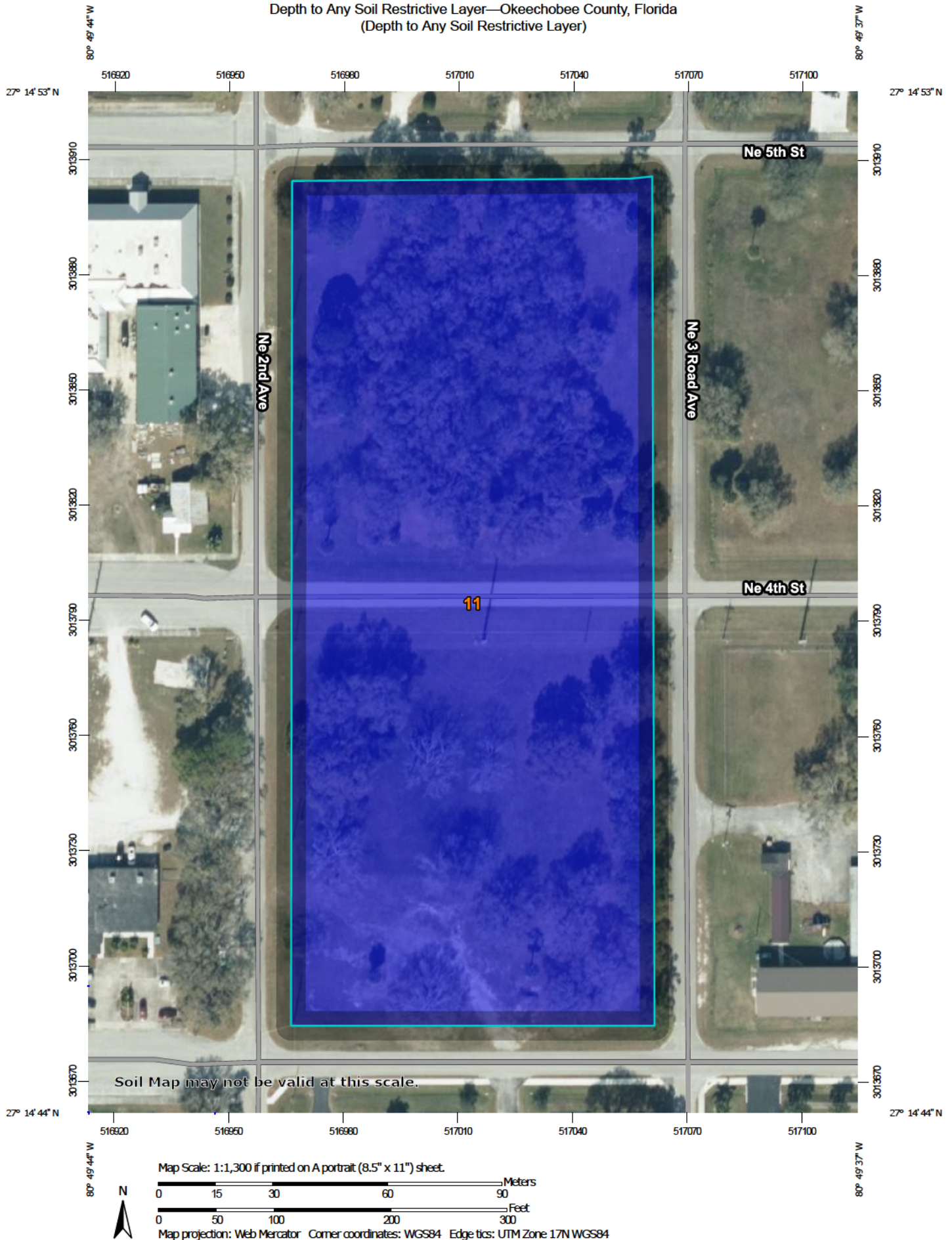
Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December


Depth to Any Soil Restrictive Layer—Okeechobee County, Florida
(Depth to Any Soil Restrictive Layer)



Depth to Any Soil Restrictive Layer—Okeechobee County, Florida
(Depth to Any Soil Restrictive Layer)








MAP LEGEND

Area of Interest (AOI)



 Area of Interest (AOI)

Soils




Soil Rating Polygons


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Lines


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

Soil Rating Points






-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200

 Not rated or not available


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

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Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 19, Aug 26, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 25, 2019—Jan 29, 2019

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Depth to Any Soil Restrictive Layer

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
11	Immokalee fine sand, 0 to 2 percent slopes	>200	5.2	100.0%
Totals for Area of Interest			5.2	100.0%

Description

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "greater than 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

=====

Basins =====

=====

Name: Onsite Blk110	Node: Onsite Blk 110	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.070	Time Shift(hrs): 0.00	
Curve Number: 95.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 100.00		

Name: Onsite Blk121	Node: Onsite Blk 121	Status: Onsite
Group: BASE	Type: SCS Unit Hydrograph CN	
Unit Hydrograph: Uh256	Peaking Factor: 256.0	
Rainfall File:	Storm Duration(hrs): 0.00	
Rainfall Amount(in): 0.000	Time of Conc(min): 10.00	
Area(ac): 2.200	Time Shift(hrs): 0.00	
Curve Number: 95.00	Max Allowable Q(cfs): 999999.000	
DCIA(%): 100.00		

=====

Nodes =====

=====

Name: Offsite	Base Flow(cfs): 0.000	Init Stage(ft): 19.000
Group: BASE		Warn Stage(ft): 25.000
Type: Time/Stage		

Time (hrs)	Stage (ft)
0.00	19.000
72.00	19.000
125.00	19.000
500.00	19.000

Name: Onsite Blk 110	Base Flow(cfs): 0.000	Init Stage(ft): 23.000
Group: BASE		Warn Stage(ft): 28.500
Type: Stage/Volume		

0.00

Stage(ft)	Volume (af)
23.500	0.0000
24.000	0.0300
24.500	0.1600
25.000	0.4600
25.500	0.9000
26.000	1.4800
26.500	2.1300
27.000	2.7700
27.500	3.4200
28.000	4.1700
28.500	5.0700

Name: Onsite Blk 121	Base Flow(cfs): 0.000	Init Stage(ft): 24.000
Group: BASE		Warn Stage(ft): 28.500
Type: Stage/Volume		

0.00

Stage(ft)	Volume (af)
24.500	0.0000
25.000	0.0300
25.500	0.1700
26.000	0.4800
26.500	0.9600
27.000	1.5800
27.500	2.2800
28.000	3.0900
28.500	4.0500
29.000	5.1500
29.500	6.2500

==== Drop Structures =====

Name: CS-1	From Node: Onsite Blk 110	Length(ft): 32.00
Group: BASE	To Node: Offsite	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Automatic
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.500
Invert(ft): 23.330	23.300	Exit Loss Coef: 0.900
Manning's N: 0.025000	0.025000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure CS-1 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 24.00	Invert(ft): 26.500	
Rise(in): 36.00	Control Elev(ft): 26.500	

*** Weir 2 of 2 for Drop Structure CS-1 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Circular	Orifice Disc Coef: 0.600	
Span(in): 3.00	Invert(ft): 23.500	
Rise(in): 3.00	Control Elev(ft): 23.500	

Name: CS-2	From Node: Onsite Blk 121	Length(ft): 29.00
Group: BASE	To Node: Offsite	Count: 1
UPSTREAM	DOWNSTREAM	Friction Equation: Average Conveyance
Geometry: Circular	Circular	Solution Algorithm: Automatic
Span(in): 18.00	18.00	Flow: Both
Rise(in): 18.00	18.00	Entrance Loss Coef: 0.500
Invert(ft): 24.330	24.300	Exit Loss Coef: 0.900
Manning's N: 0.025000	0.025000	Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000	0.000	Inlet Ctrl Spec: Use dn
Bot Clip(in): 0.000	0.000	Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 2 for Drop Structure CS-2 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Horizontal	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Rectangular	Orifice Disc Coef: 0.600	
Span(in): 24.00	Invert(ft): 27.000	
Rise(in): 36.00	Control Elev(ft): 27.000	

*** Weir 2 of 2 for Drop Structure CS-2 ***

Count: 1	Bottom Clip(in): 0.000	TABLE
Type: Vertical: Mavis	Top Clip(in): 0.000	
Flow: Both	Weir Disc Coef: 3.200	
Geometry: Circular	Orifice Disc Coef: 0.600	
Span(in): 3.00	Invert(ft): 24.500	
Rise(in): 3.00	Control Elev(ft): 24.500	

==== Hydrology Simulations =====

Name: 100YR3D
Filename: F:\2021-014 Mitch Stephens Apartments (COO)\04-Calcs\ICPR\sims\100YR3D.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 10.00

Time(hrs) Print Inc(min)

50.000 10.00
100.000 5.00

Name: 10YR1D
Filename: F:\2021-014 Mitch Stephens Apartments (COO)\04-Calcs\ICPR\sims\10YR1D.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 5.00

Time(hrs) Print Inc(min)

10.000 10.00
24.000 5.00
100.000 10.00

Name: 25YR3D
Filename: F:\2021-014 Mitch Stephens Apartments (COO)\04-Calcs\ICPR\sims\25YR3D.R32

Override Defaults: Yes
Storm Duration(hrs): 72.00
Rainfall File: Sfwmd72
Rainfall Amount(in): 9.00

Time(hrs) Print Inc(min)

50.000 10.00
100.000 5.00
400.000 10.00

==== Routing Simulations =====

Name: 100YR3D Hydrology Sim: 100YR3D
Filename: F:\2021-014 Mitch Stephens Apartments (COO)\04-Calcs\ICPR\sims\100YR3D.I32

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 100.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs) Print Inc(min)

50.000 120.000
100.000 120.000

Group Run

BASE Yes

Name: 10YR1D Hydrology Sim: 10YR1D
Filename: F:\2021-014 Mitch Stephens Apartments (COO)\04-Calcs\ICPR\sims\10YR1D.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 100.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
10.000	120.000
24.000	120.000
100.000	120.000

Group	Run
BASE	Yes

Name: 25YR3D Hydrology Sim: 25YR3D
Filename: F:\2021-014 Mitch Stephens Apartments (COO)\04-Calcs\ICPR\sims\25YR3D.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00	Delta Z Factor: 0.00500
Time Step Optimizer: 10.000	
Start Time(hrs): 0.000	End Time(hrs): 400.00
Min Calc Time(sec): 0.5000	Max Calc Time(sec): 60.0000
Boundary Stages:	Boundary Flows:

Time(hrs)	Print Inc(min)
50.000	120.000
100.000	120.000
400.000	120.000

Group	Run
BASE	Yes

Basin Name: Onsite Blk110
Group Name: BASE
Simulation: 100YR3D
Node Name: Onsite Blk 110
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256
Peaking Fator: 256.0
Spec Time Inc (min): 1.33
Comp Time Inc (min): 1.33
Rainfall File: Sfwmd72
Rainfall Amount (in): 10.000
Storm Duration (hrs): 72.00
Status: Onsite
Time of Conc (min): 10.00
Time Shift (hrs): 0.00
Area (ac): 2.070
Vol of Unit Hyd (in): 1.000
Curve Number: 95.000
DCIA (%): 100.000

Time Max (hrs): 60.02
Flow Max (cfs): 9.193
Runoff Volume (in): 9.897
Runoff Volume (ft3): 74363.803

Basin Name: Onsite Blk121
Group Name: BASE
Simulation: 100YR3D
Node Name: Onsite Blk 121
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256
Peaking Fator: 256.0
Spec Time Inc (min): 1.33
Comp Time Inc (min): 1.33
Rainfall File: Sfwmd72
Rainfall Amount (in): 10.000
Storm Duration (hrs): 72.00
Status: Onsite
Time of Conc (min): 10.00
Time Shift (hrs): 0.00
Area (ac): 2.200
Vol of Unit Hyd (in): 1.000
Curve Number: 95.000
DCIA (%): 100.000

Time Max (hrs): 60.02
Flow Max (cfs): 9.770
Runoff Volume (in): 9.897
Runoff Volume (ft3): 79033.993

Basin Name: Onsite Blk110
Group Name: BASE
Simulation: 10YR1D
Node Name: Onsite Blk 110
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256
Peaking Fator: 256.0
Spec Time Inc (min): 1.33
Comp Time Inc (min): 1.33
Rainfall File: Flmod
Rainfall Amount (in): 5.000
Storm Duration (hrs): 24.00
Status: Onsite
Time of Conc (min): 10.00
Time Shift (hrs): 0.00
Area (ac): 2.070
Vol of Unit Hyd (in): 1.000
Curve Number: 95.000
DCIA (%): 100.000

Time Max (hrs): 12.04
Flow Max (cfs): 6.219
Runoff Volume (in): 4.898
Runoff Volume (ft3): 36806.693

Basin Name: Onsite Blk121

Group Name: BASE
Simulation: 10YR1D
Node Name: Onsite Blk 121
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256
Peaking Fator: 256.0
Spec Time Inc (min): 1.33
Comp Time Inc (min): 1.33
Rainfall File: Flmod
Rainfall Amount (in): 5.000
Storm Duration (hrs): 24.00
Status: Onsite
Time of Conc (min): 10.00
Time Shift (hrs): 0.00
Area (ac): 2.200
Vol of Unit Hyd (in): 1.000
Curve Number: 95.000
DCIA (%): 100.000

Time Max (hrs): 12.04
Flow Max (cfs): 6.610
Runoff Volume (in): 4.898
Runoff Volume (ft3): 39118.224

Basin Name: Onsite Blk110
Group Name: BASE
Simulation: 25YR3D
Node Name: Onsite Blk 110
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256
Peaking Fator: 256.0
Spec Time Inc (min): 1.33
Comp Time Inc (min): 1.33
Rainfall File: Sfwmd72
Rainfall Amount (in): 9.000
Storm Duration (hrs): 72.00
Status: Onsite
Time of Conc (min): 10.00
Time Shift (hrs): 0.00
Area (ac): 2.070
Vol of Unit Hyd (in): 1.000
Curve Number: 95.000
DCIA (%): 100.000

Time Max (hrs): 60.02
Flow Max (cfs): 8.274
Runoff Volume (in): 8.897
Runoff Volume (ft3): 66852.306

Basin Name: Onsite Blk121
Group Name: BASE
Simulation: 25YR3D
Node Name: Onsite Blk 121
Basin Type: SCS Unit Hydrograph

Unit Hydrograph: Uh256
Peaking Fator: 256.0
Spec Time Inc (min): 1.33
Comp Time Inc (min): 1.33
Rainfall File: Sfwmd72
Rainfall Amount (in): 9.000
Storm Duration (hrs): 72.00
Status: Onsite
Time of Conc (min): 10.00
Time Shift (hrs): 0.00
Area (ac): 2.200
Vol of Unit Hyd (in): 1.000
Curve Number: 95.000
DCIA (%): 100.000

Time Max (hrs): 60.02
Flow Max (cfs): 8.793
Runoff Volume (in): 8.897
Runoff Volume (ft3): 71050.760

Glenwood Park Apartment Complex - Drainage Calculations, City of Okeechobee, FL
Node Maximum Report for AdICPR

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Max Stage ft	Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Offsite	BASE	10YR1D	0.00	19.000	25.000	0.0000	0	16.12	0.553	0.00	0.000
Onsite Blk 110	BASE	10YR1D	16.02	25.068	28.500	-0.5000	33894	12.00	6.070	16.02	0.275
Onsite Blk 121	BASE	10YR1D	16.24	26.084	28.500	-0.5000	36673	12.00	6.451	16.24	0.277
Offsite	BASE	25YR3D	0.00	19.000	25.000	0.0000	0	64.35	0.603	0.00	0.000
Onsite Blk 110	BASE	25YR3D	64.31	25.345	28.500	-0.5000	40658	60.00	8.250	64.31	0.301
Onsite Blk 121	BASE	25YR3D	64.40	26.361	28.500	-0.5000	44155	60.00	8.768	64.40	0.303

Glenwood Park Apartment Complex - Drainage Calculations, City of Okeechobee, FL
Node Maximum 100yr3d Report for AdICPR

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Max Stage ft	Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Offsite	BASE	100YR3D	0.00	19.000	25.000	0.0000	0	0.00	0.000	0.00	0.000
Onsite Blk 110	BASE	100YR3D	73.00	26.188	28.500	-0.5000	54560	60.00	9.147	0.00	0.000
Onsite Blk 121	BASE	100YR3D	73.00	27.177	28.500	-0.5000	60426	60.00	9.721	0.00	0.000

Glenwood Park Apartment Complex - Drainage Calculations, City of Okeechobee, FL
 Link Maximum Report for AdICPR

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
CS-1	BASE	10YR1D	16.02	0.275	-0.002	16.02	25.068	0.00	19.000
CS-2	BASE	10YR1D	16.24	0.277	0.002	16.24	26.084	0.00	19.000
CS-1	BASE	25YR3D	64.31	0.301	-0.002	64.31	25.345	0.00	19.000
CS-2	BASE	25YR3D	64.40	0.303	-0.002	64.40	26.361	0.00	19.000