

Gotha Lakes Watershed Management Plan

Project Status Overview

September 2020



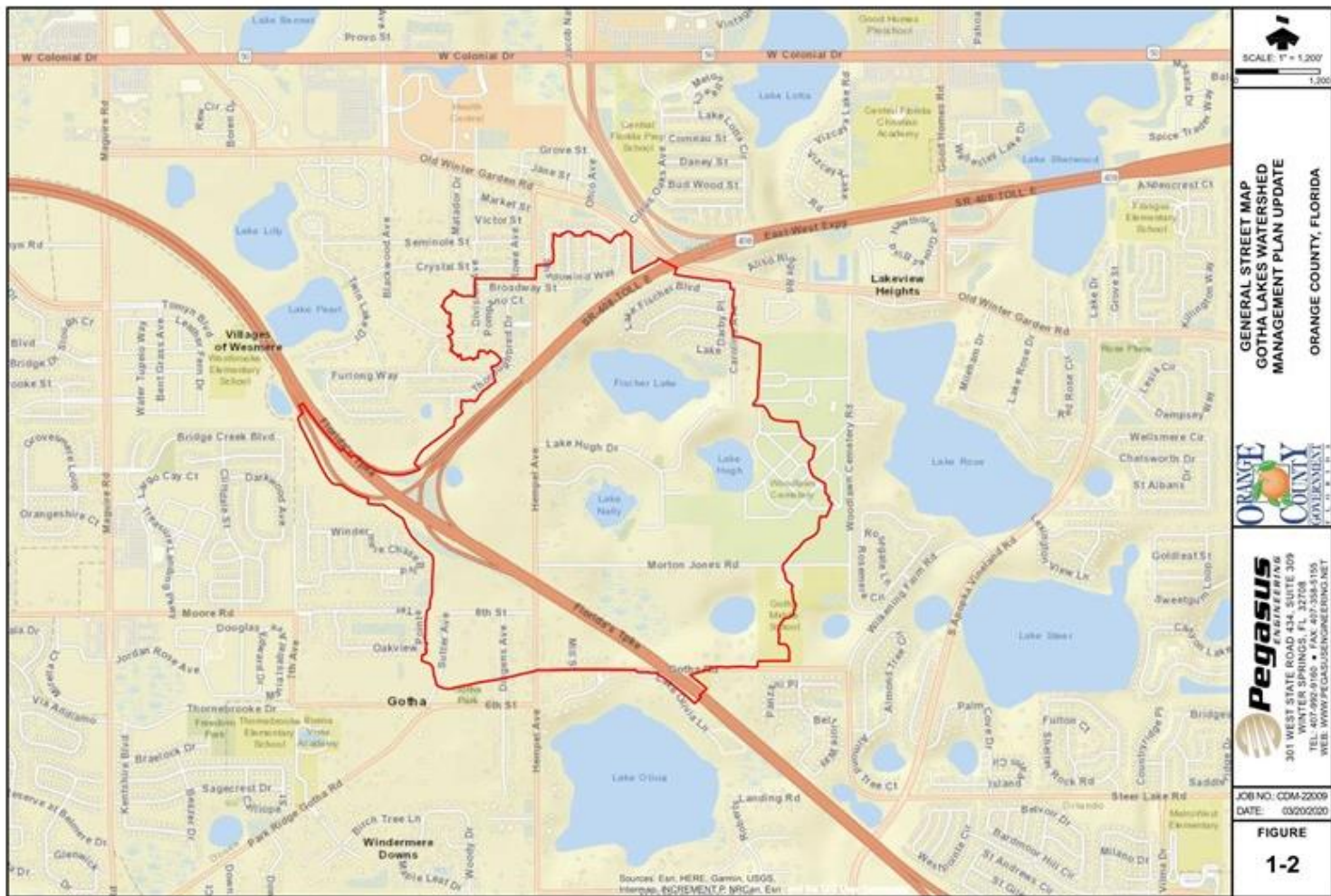
**CDM
Smith**



Pegasus
ENGINEERING

Meeting Agenda

- Introduction
- Project background
- Watershed data evaluation
- Conceptual alternative development
 - Expanding available floodplain storage
 - Recharge well with treatment
 - Pumping, conveyance, treatment outside of study area
 - Private property resources
- Project findings



SCALE: 1" = 1,200'

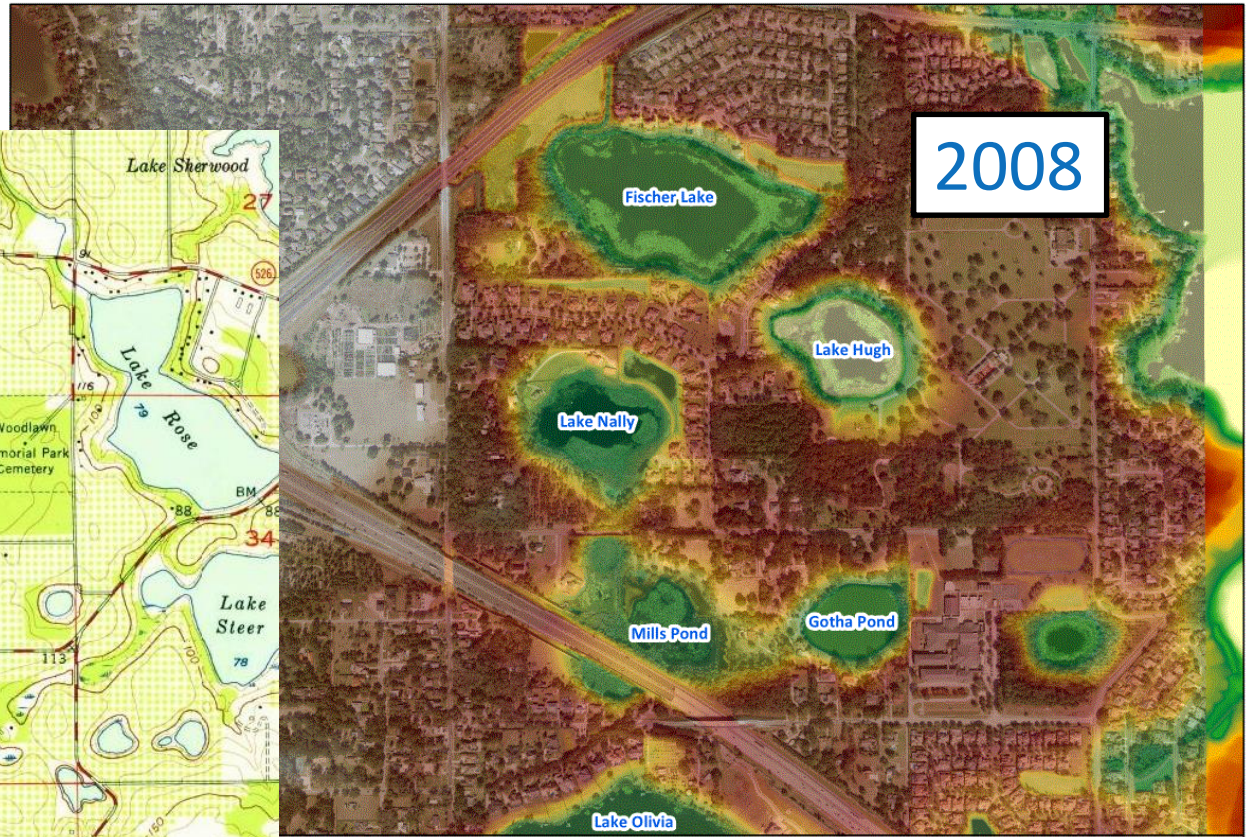
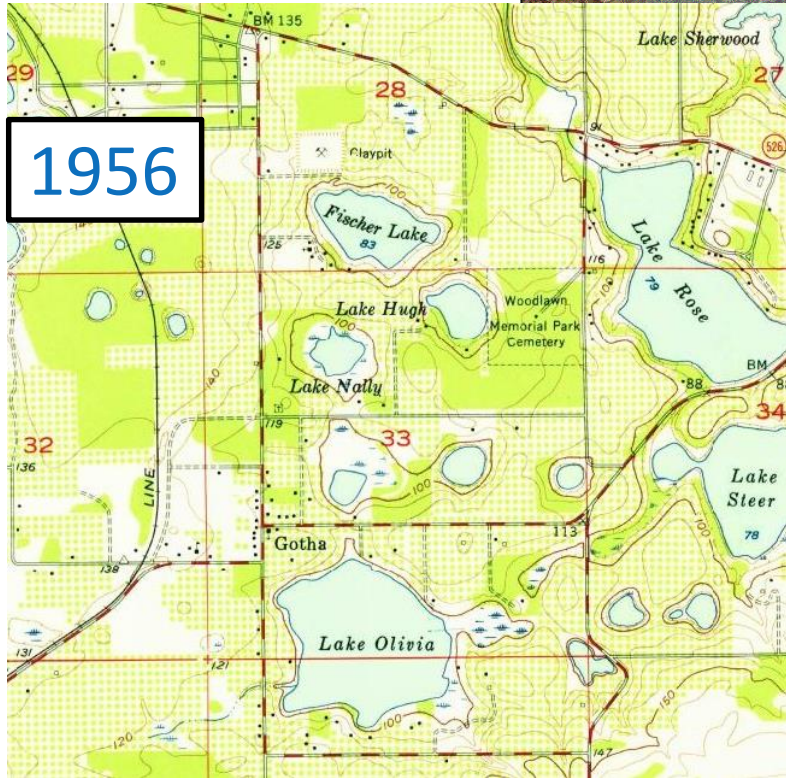
GENERAL STREET MAP
 GOTHA LAKES WATERSHED
 MANAGEMENT PLAN UPDATE
 ORANGE COUNTY, FLORIDA



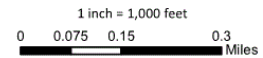
Pegasus
 301 WEST STATE ROAD 43, SUITE 209
 WINTER SPRINGS, FL 32708
 TEL: 407-992-9165 • FAX: 407-388-5195
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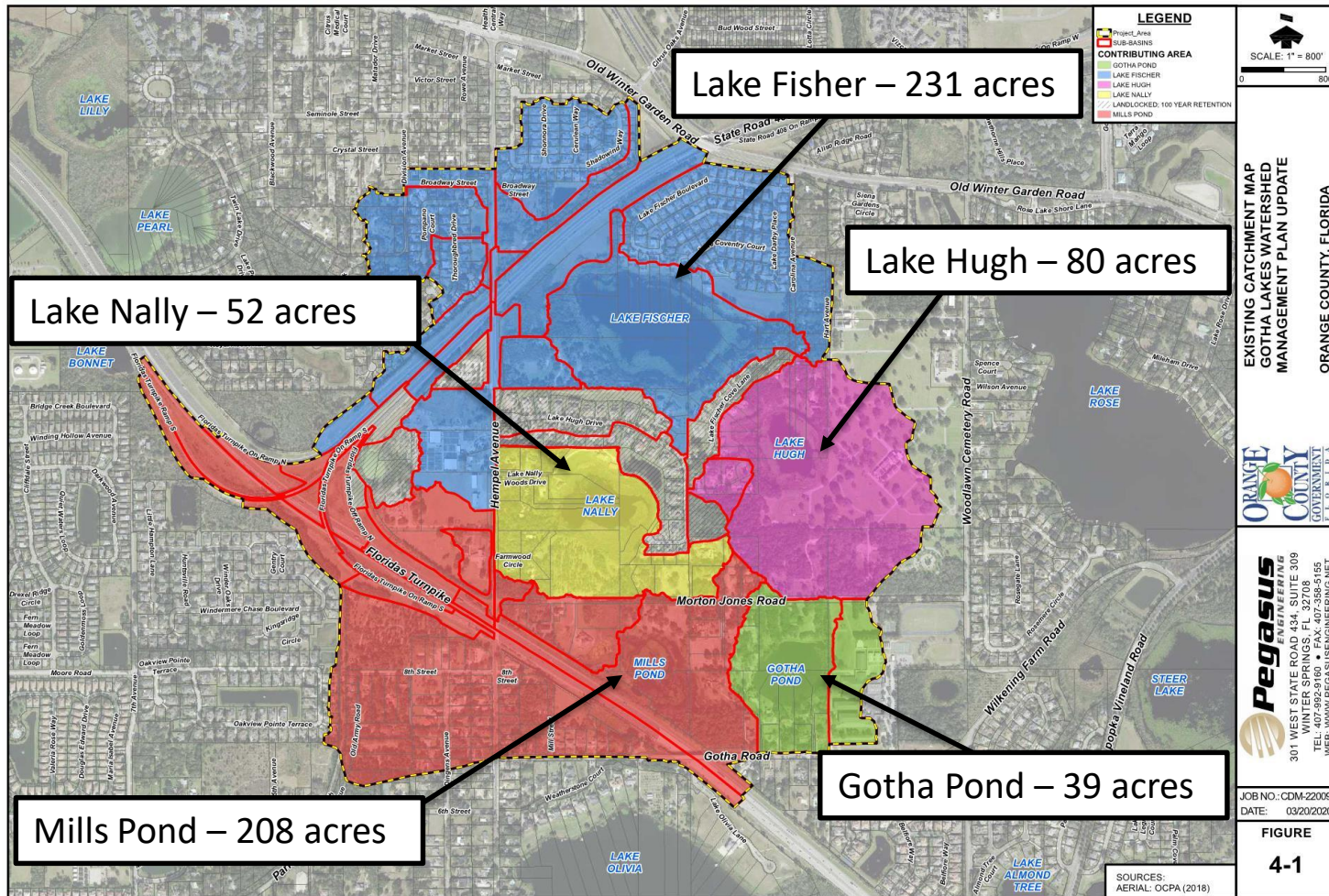
JOB NO. CDM-22009
 DATE: 03/20/2020

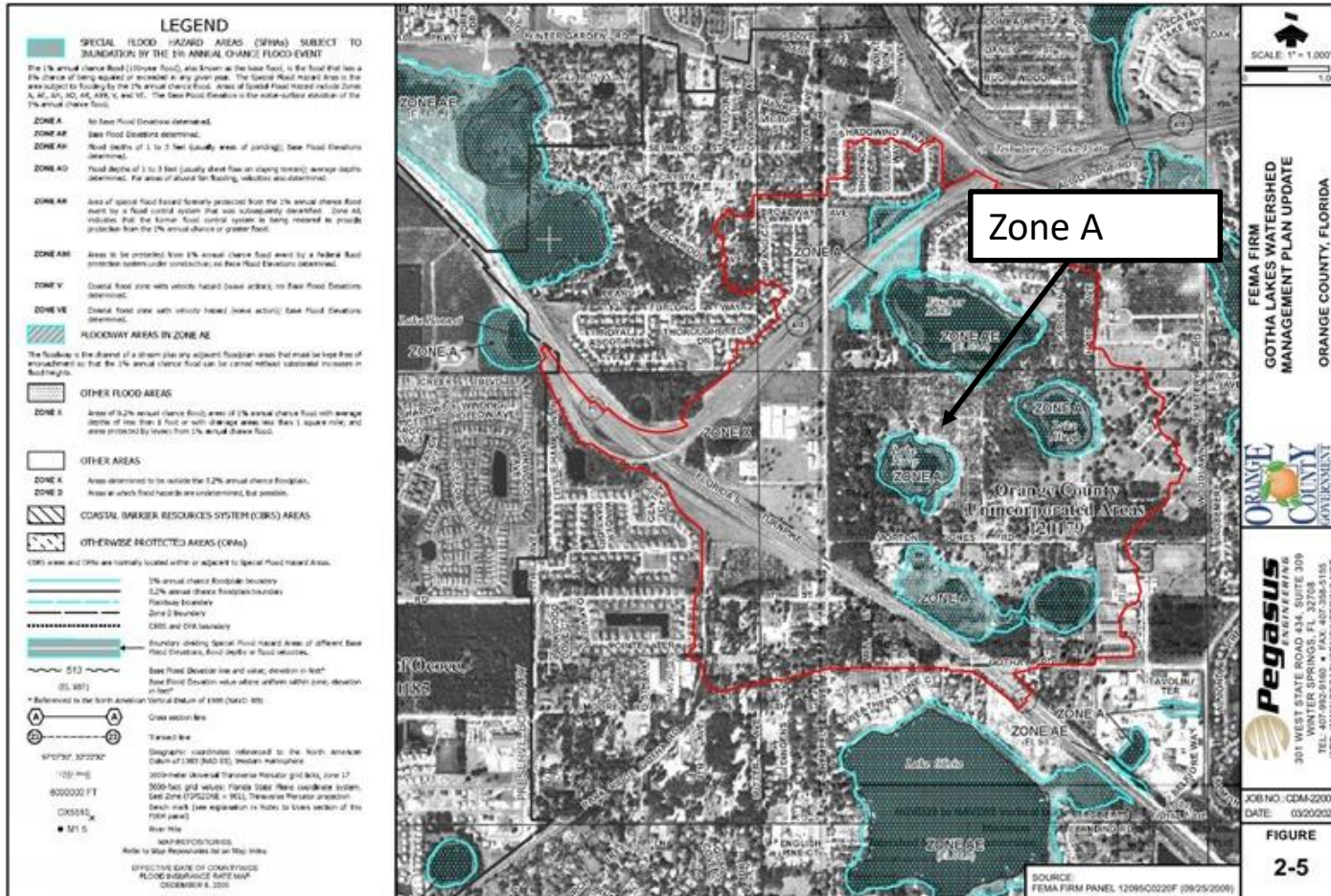
FIGURE
 1-2



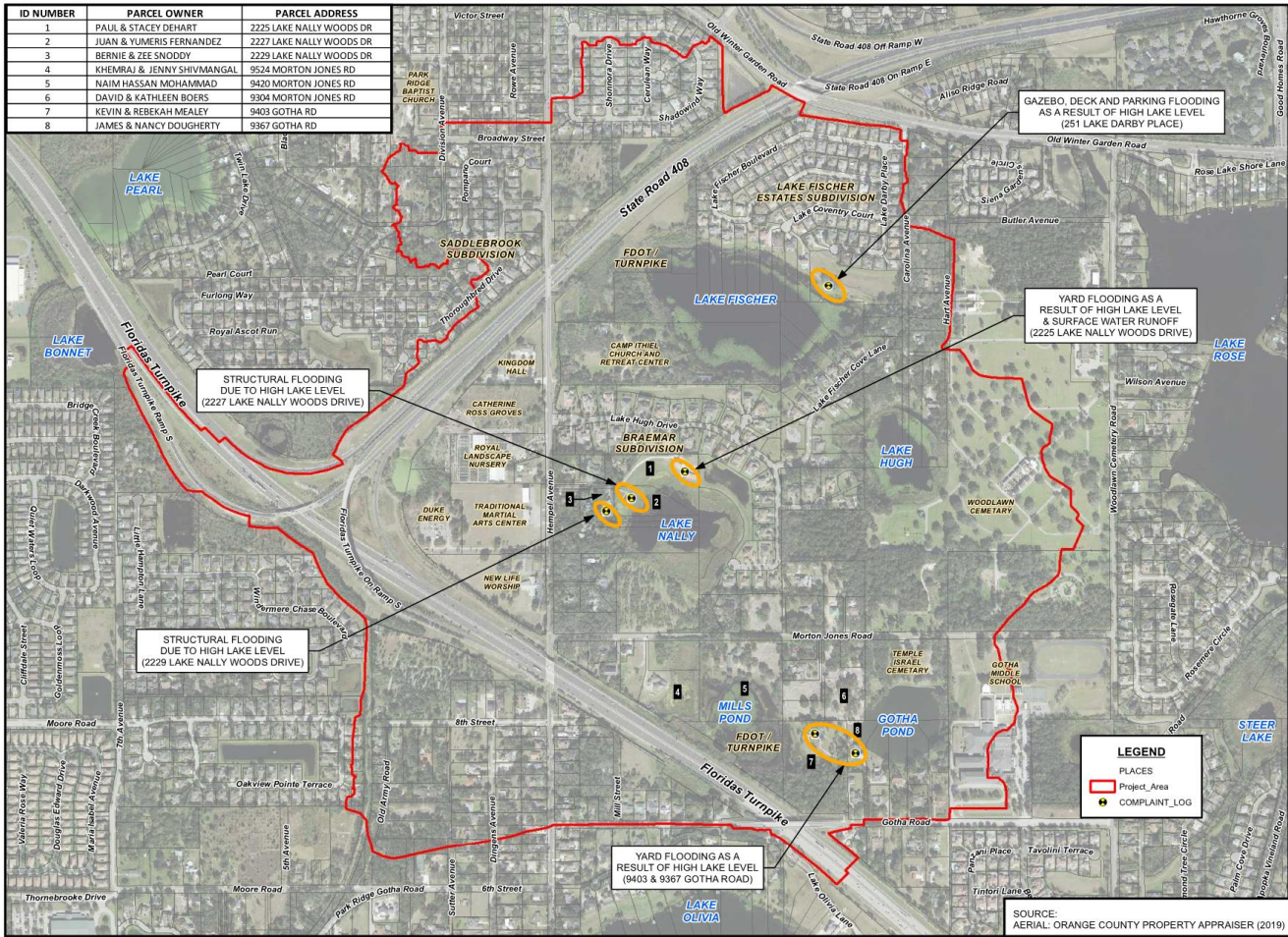
Gotha Lakes Current Topography







ID NUMBER	PARCEL OWNER	PARCEL ADDRESS
1	PAUL & STACEY DEHART	2225 LAKE NALLY WOODS DR
2	JUAN & YUMERIS FERNANDEZ	2227 LAKE NALLY WOODS DR
3	BERNIE & ZEE SNOODY	2229 LAKE NALLY WOODS DR
4	KHEMRAJ & JENNY SHIVMANGAL	9524 MORTON JONES RD
5	NAIM HASSAN MOHAMMAD	9420 MORTON JONES RD
6	DAVID & KATHLEEN BOERS	9304 MORTON JONES RD
7	KEVIN & REBEKAH MALEY	9403 GOTHA RD
8	JAMES & NANCY DOUGHERTY	9367 GOTHA RD



LEGEND

- PLACES
- Project_Area
- COMPLAINT_LOG

SCALE: 1" = 700'

**COMPLAINTS AND REPORTED FLOODING MAP
GOTHA LAKES WATERSHED
MANAGEMENT PLAN UPDATE**



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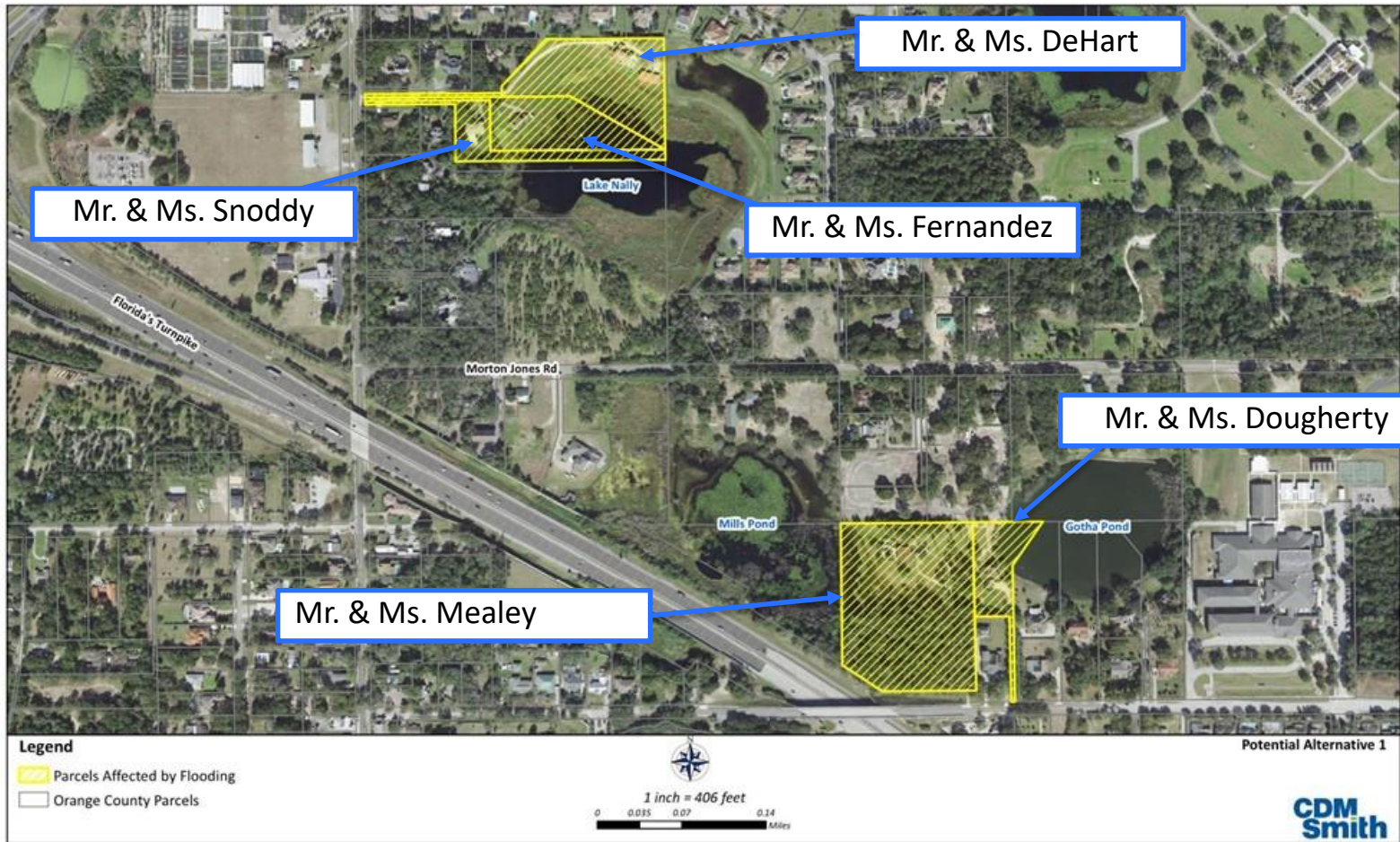
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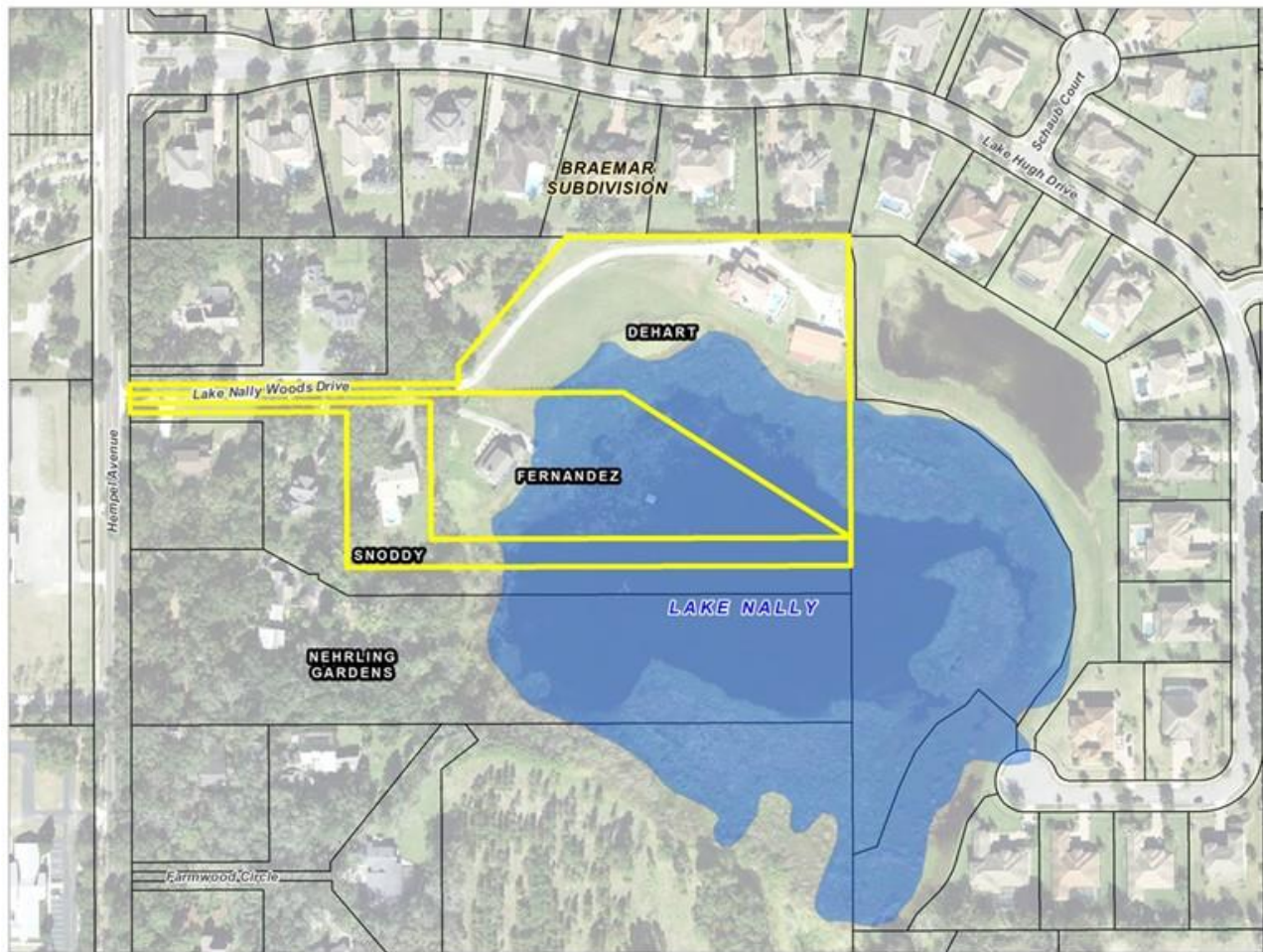
FIGURE
2-6

SOURCE:
 AERIAL: ORANGE COUNTY PROPERTY APPRAISER (2019)

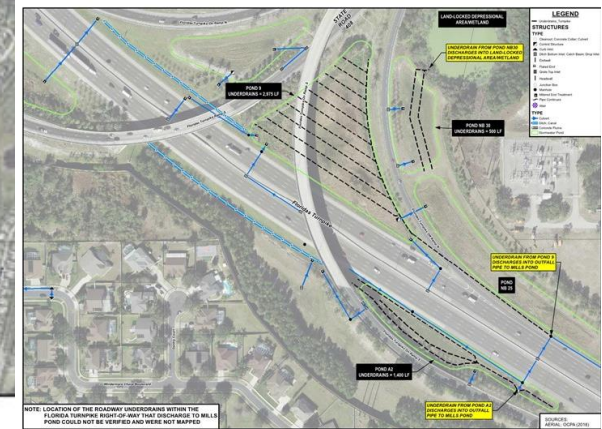
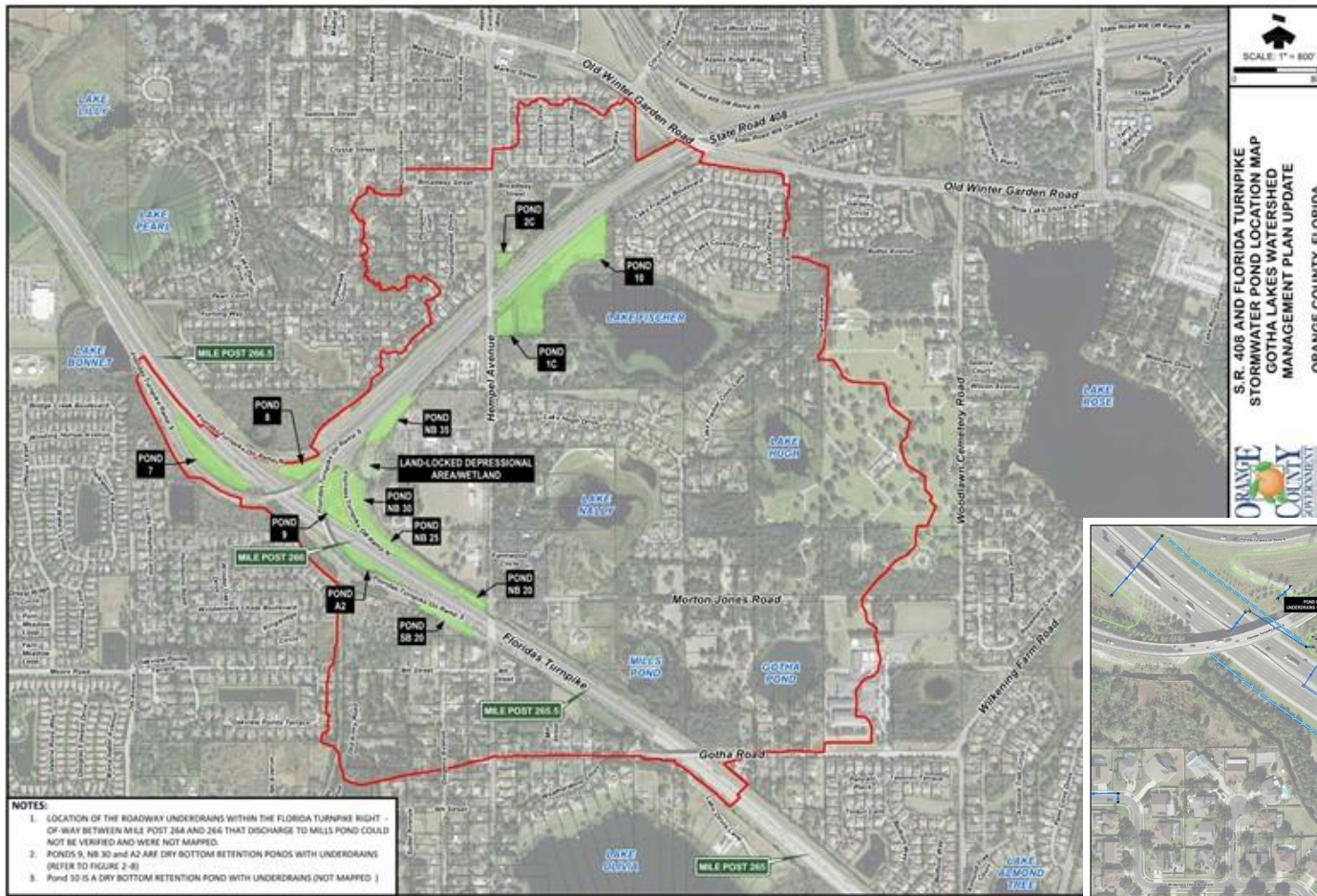
Project Summary

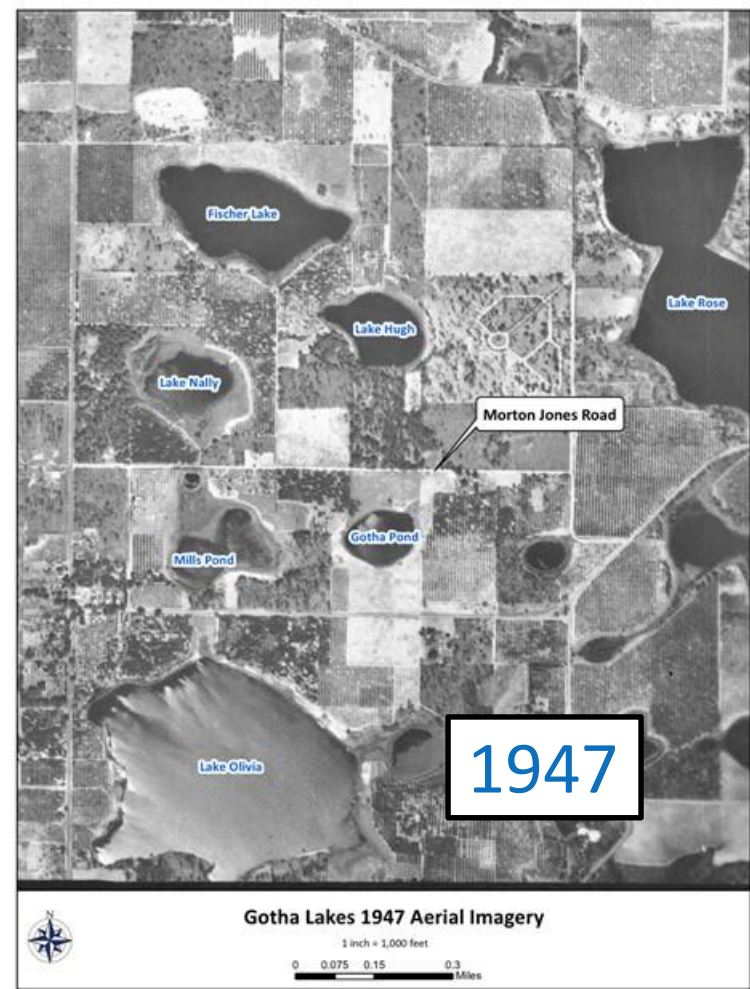
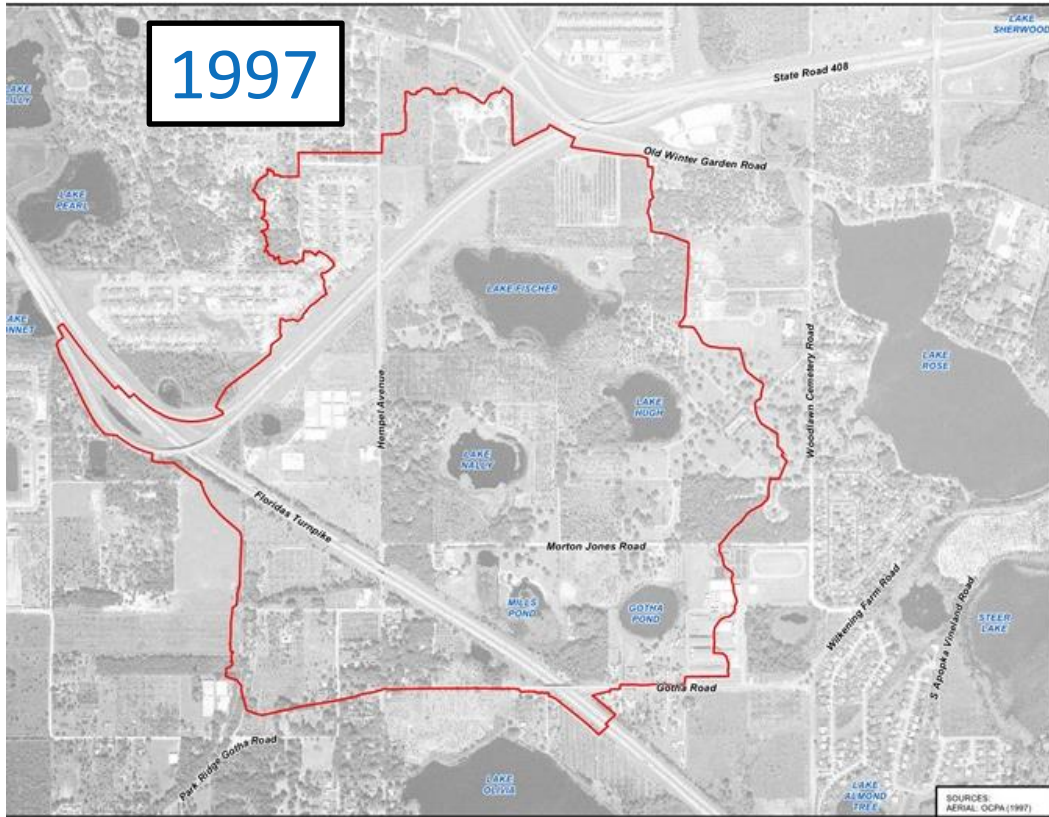
Name	Count of Total Parcels in Study Area	Estimated Count of Developed Parcels	Count of Parcels with Reported Flooding
Gotha Watershed	535	476	6
Lake Fischer	316	302	1
Lake Hugh	19	15	0
Lake Nally	23	17	3
Mills Pond	118	89	1
Gotha Pond	12	11	1
Retention Systems	47	42	0

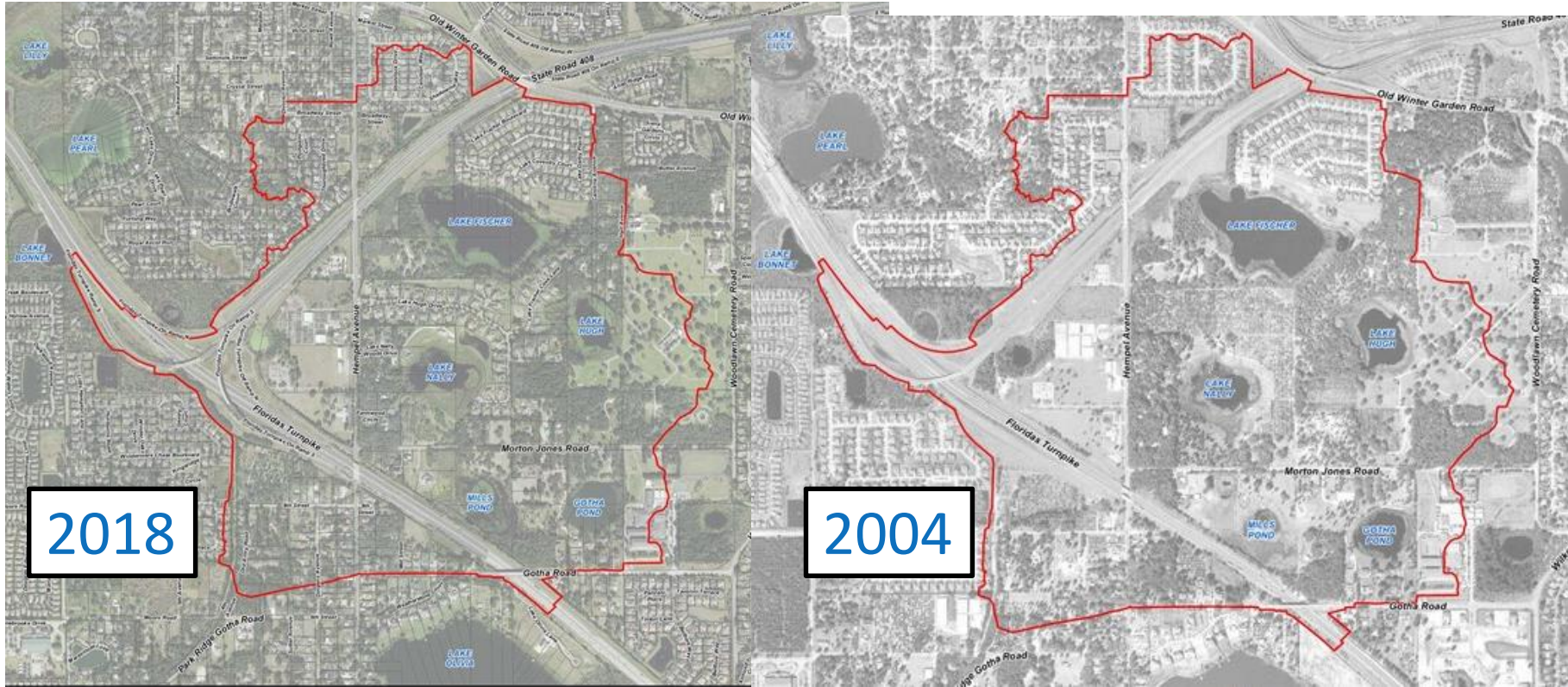




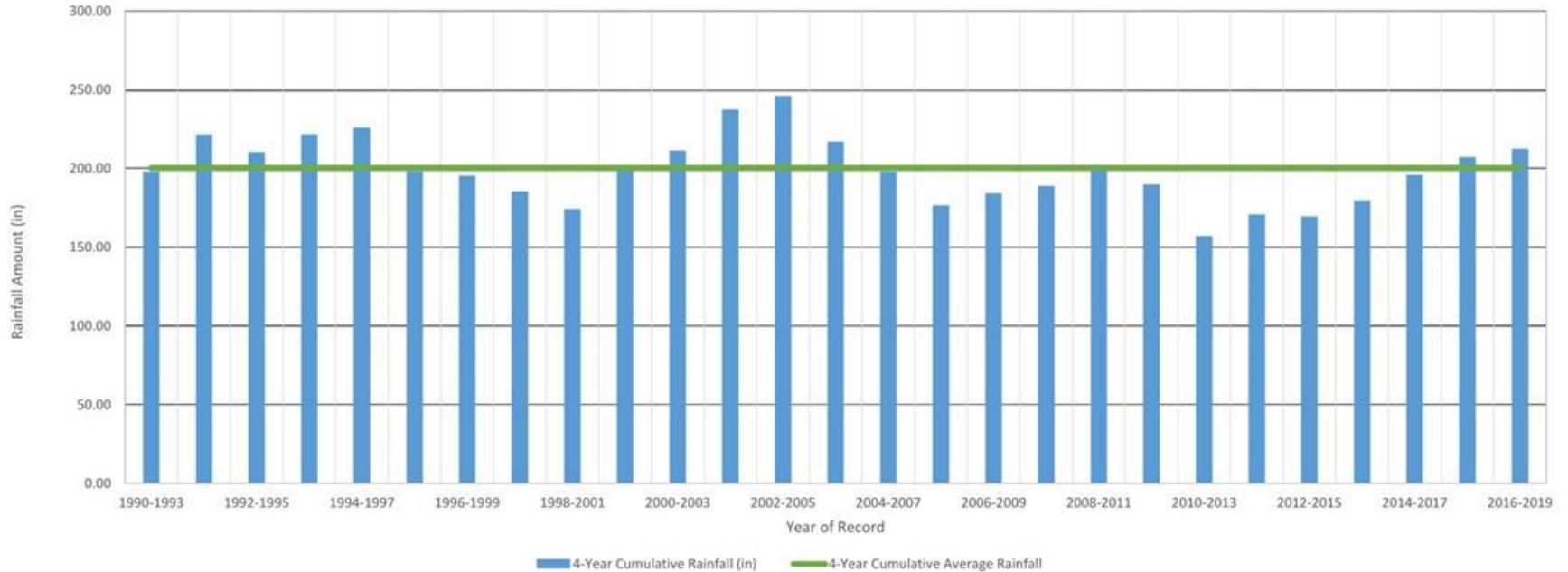








4-YEAR ANNUAL CUMULATIVE RAINFALL STATION 11 - SHINGLE CREEK



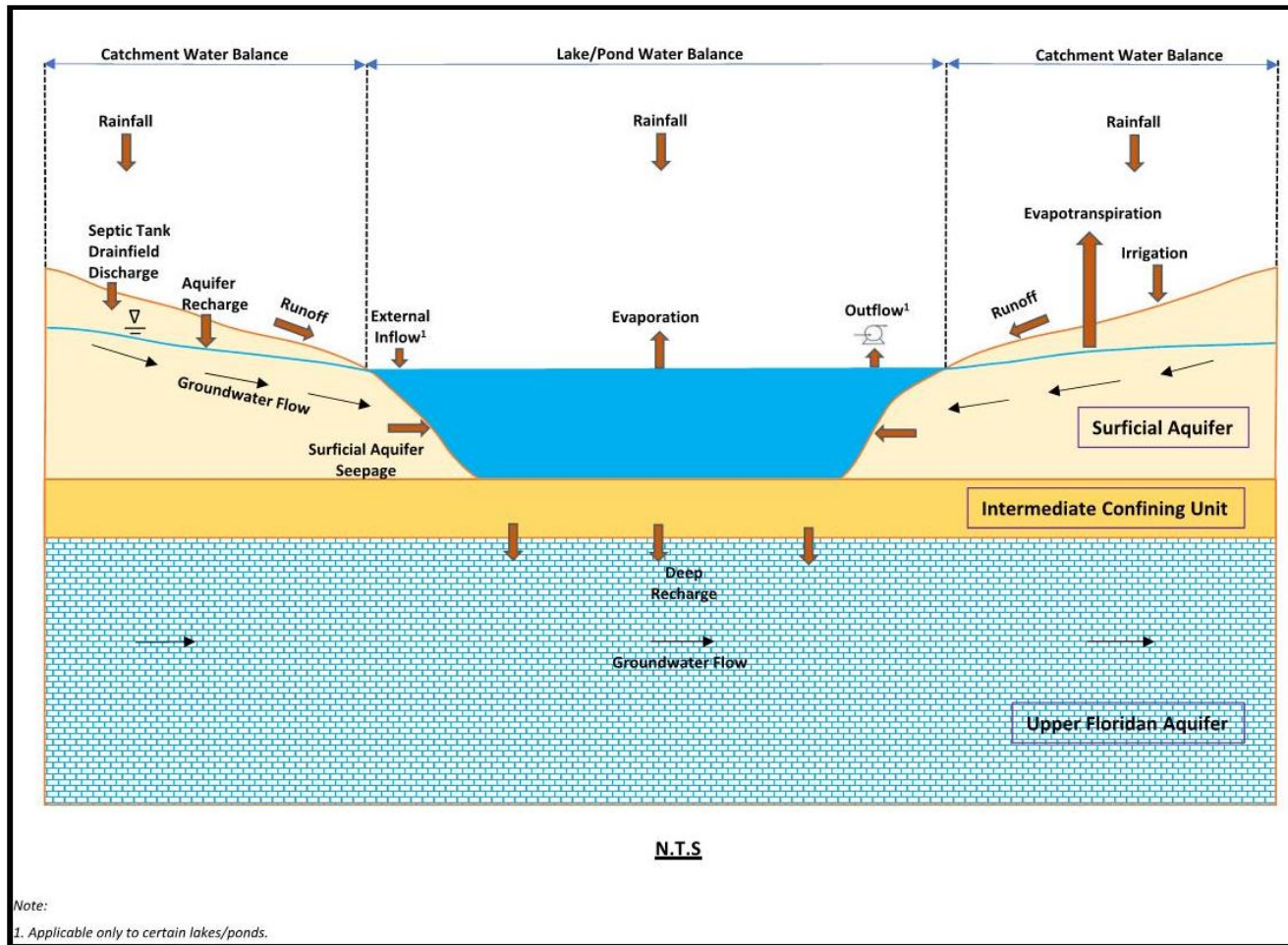


Figure 4-3
Lake Nally 2017-2019 Results Comparison

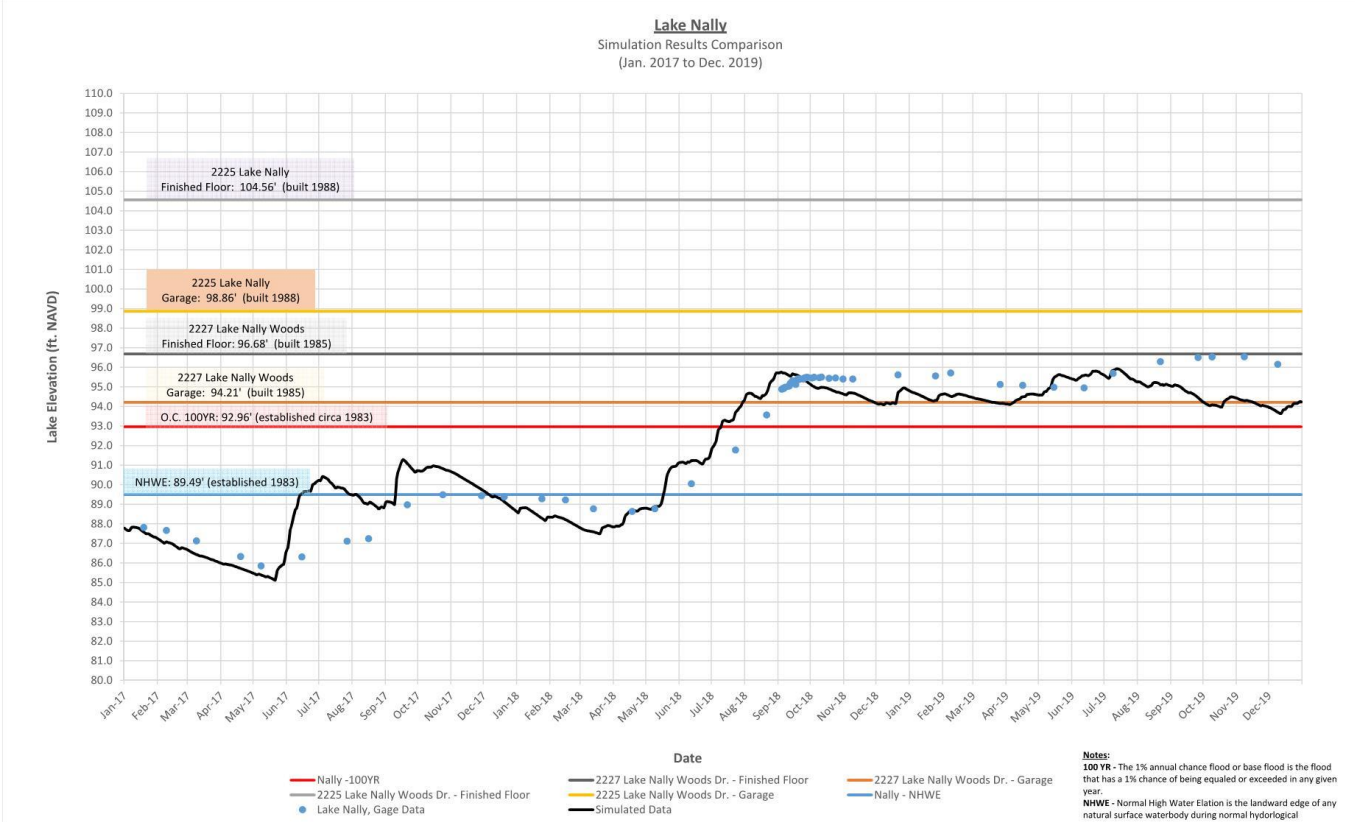


Figure 4-7
Mills Pond 2017-2019 Results Comparison

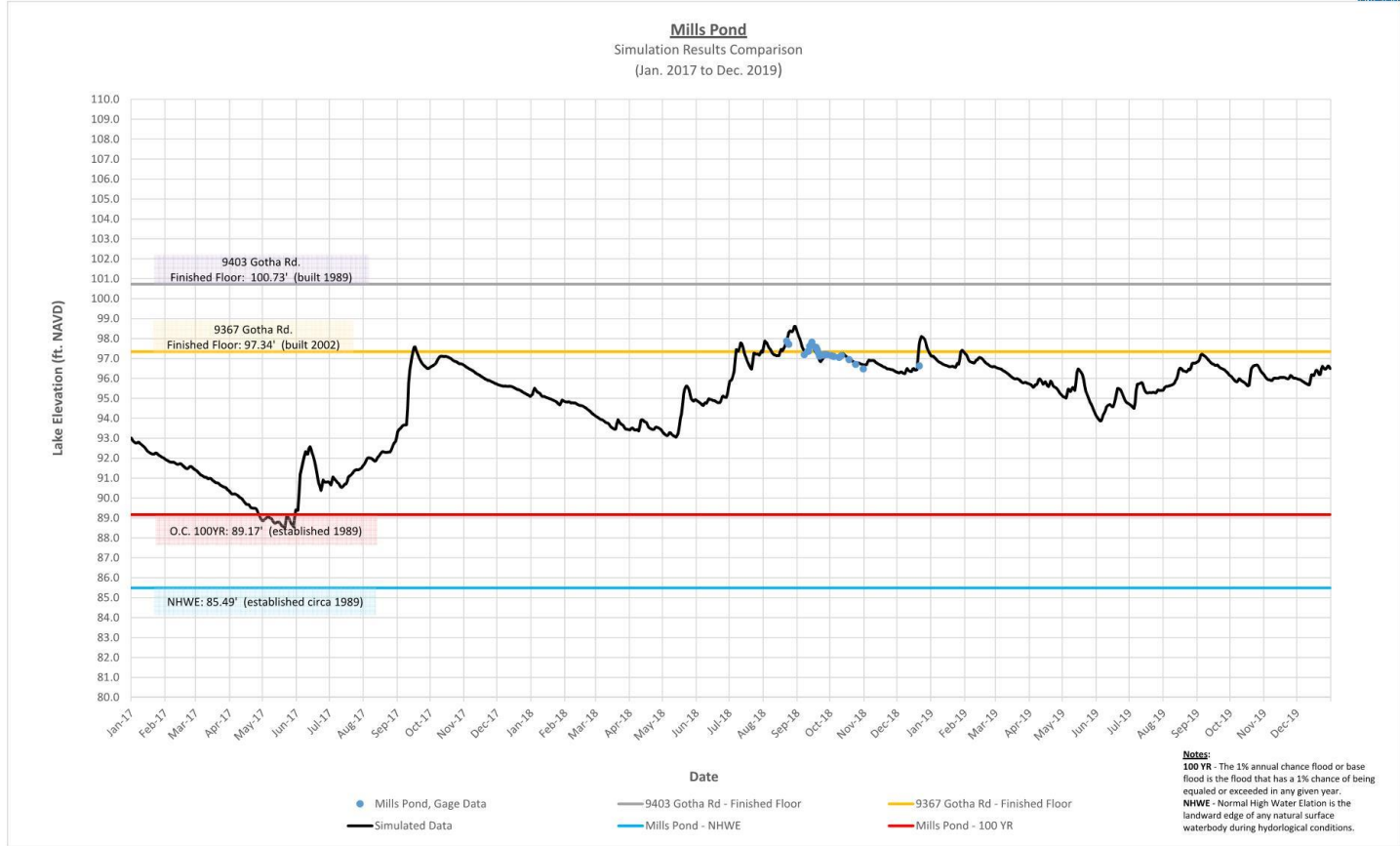
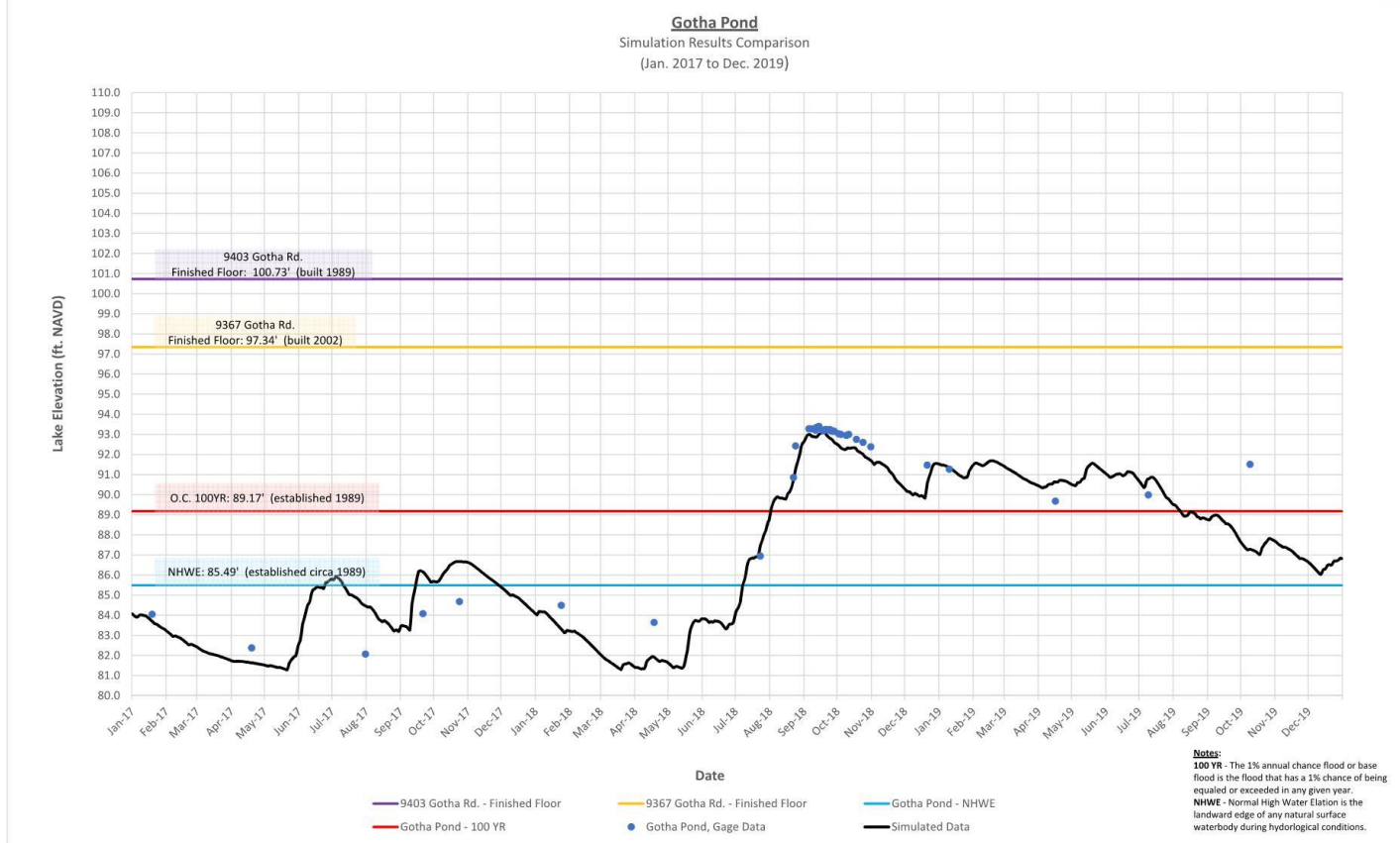
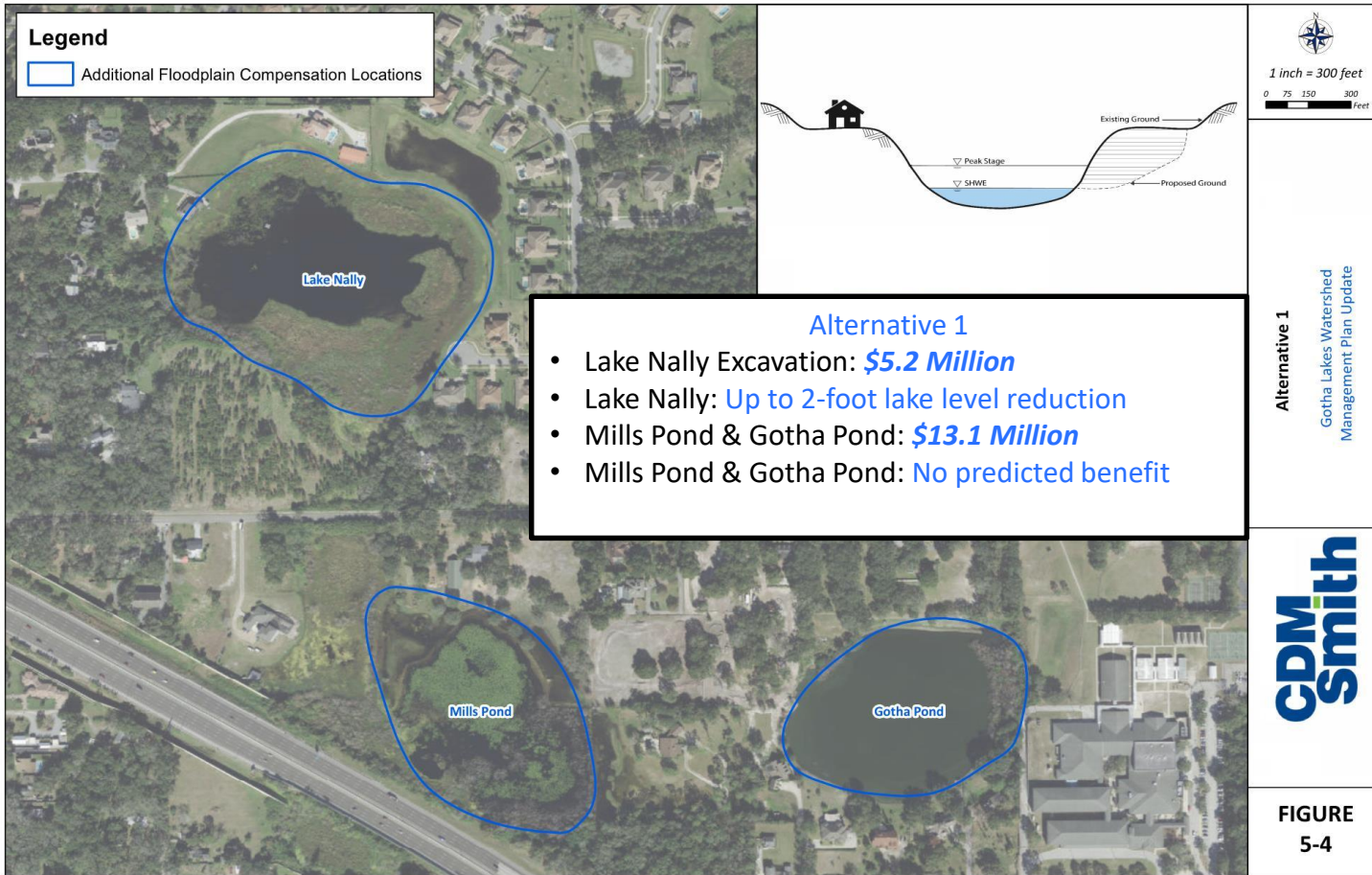
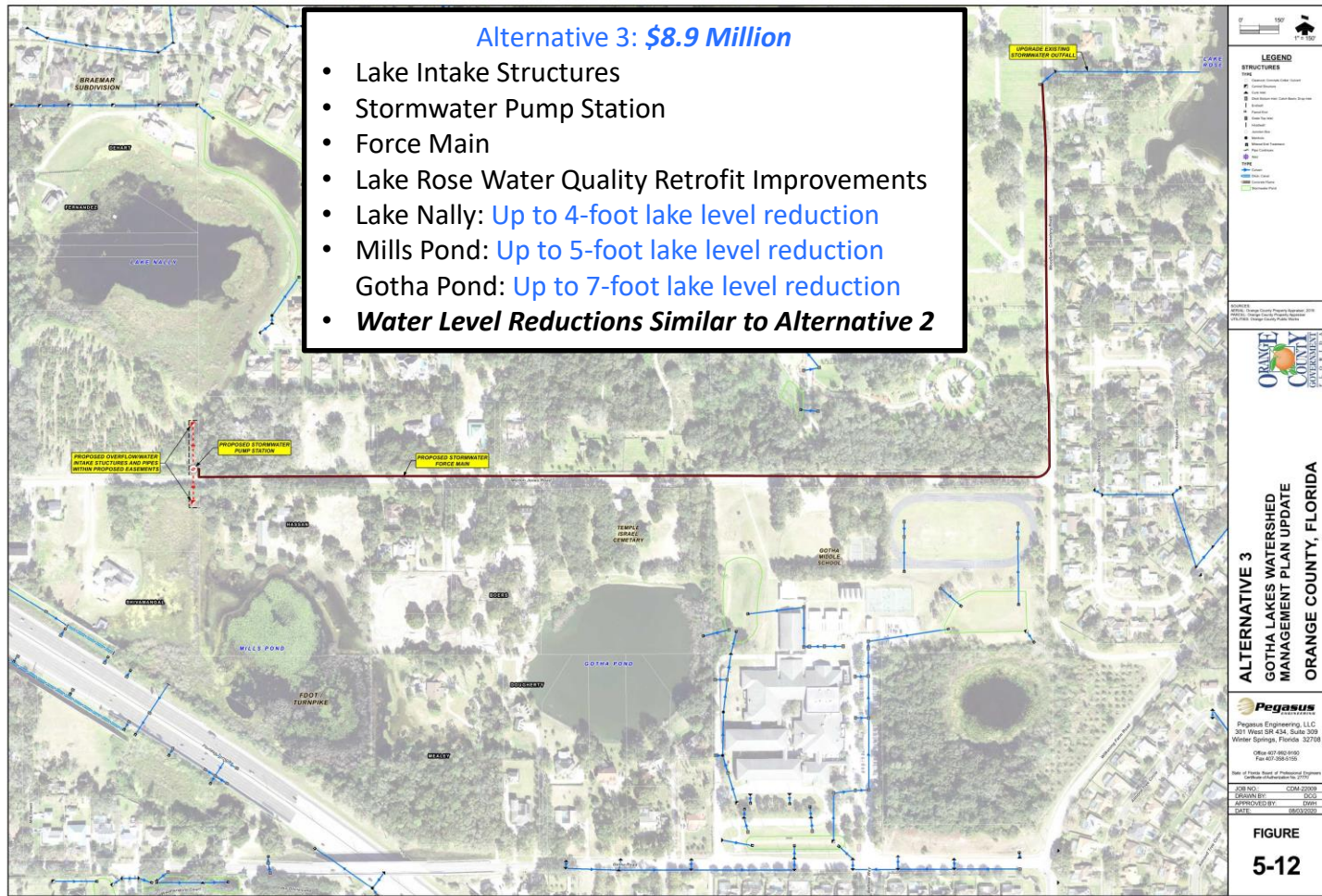


Figure 4-6
 Gotha Pond 2017-2019 Results Comparison







- Alternative 3: \$8.9 Million**
- Lake Intake Structures
 - Stormwater Pump Station
 - Force Main
 - Lake Rose Water Quality Retrofit Improvements
 - Lake Nally: Up to 4-foot lake level reduction
 - Mills Pond: Up to 5-foot lake level reduction
 - Gotha Pond: Up to 7-foot lake level reduction
 - **Water Level Reductions Similar to Alternative 2**

1" = 100'

LEGEND

STRUCTURES

- Stormwater Pump Station
- Force Main
- Lake Intake Structure
- Stormwater Pump Station
- Force Main
- Lake Intake Structure
- Stormwater Pump Station
- Force Main
- Lake Intake Structure

PIPES

- 18" Stormwater Force Main
- 24" Stormwater Force Main
- 30" Stormwater Force Main
- 36" Stormwater Force Main
- 42" Stormwater Force Main
- 48" Stormwater Force Main
- 54" Stormwater Force Main
- 60" Stormwater Force Main
- 66" Stormwater Force Main
- 72" Stormwater Force Main
- 78" Stormwater Force Main
- 84" Stormwater Force Main
- 90" Stormwater Force Main
- 96" Stormwater Force Main
- 102" Stormwater Force Main
- 108" Stormwater Force Main
- 114" Stormwater Force Main
- 120" Stormwater Force Main
- 126" Stormwater Force Main
- 132" Stormwater Force Main
- 138" Stormwater Force Main
- 144" Stormwater Force Main
- 150" Stormwater Force Main
- 156" Stormwater Force Main
- 162" Stormwater Force Main
- 168" Stormwater Force Main
- 174" Stormwater Force Main
- 180" Stormwater Force Main
- 186" Stormwater Force Main
- 192" Stormwater Force Main
- 198" Stormwater Force Main
- 204" Stormwater Force Main
- 210" Stormwater Force Main
- 216" Stormwater Force Main
- 222" Stormwater Force Main
- 228" Stormwater Force Main
- 234" Stormwater Force Main
- 240" Stormwater Force Main
- 246" Stormwater Force Main
- 252" Stormwater Force Main
- 258" Stormwater Force Main
- 264" Stormwater Force Main
- 270" Stormwater Force Main
- 276" Stormwater Force Main
- 282" Stormwater Force Main
- 288" Stormwater Force Main
- 294" Stormwater Force Main
- 300" Stormwater Force Main

ORANGE COUNTY GOVERNMENT

**ALTERNATIVE 3
GOTHA LAKES WATERSHED
MANAGEMENT PLAN UPDATE
ORANGE COUNTY, FLORIDA**

Pegasus

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State of Florida, Board of Professional Engineers
Certificate No. 12715

JOB NO.: CEM-2009-08
DESIGNED BY: CEM
APPROVED BY: CEM
DATE: 08/03/2009

**FIGURE
5-12**

Private Property Flood Protection

- Participation in the FEMA Flood Insurance Program.
- Elevating utilities above flood elevations or reported high water elevations following FEMA guidelines.
- Dry floodproofing measures that may include flood barriers (e.g., floodwalls with gates).
- Installing flood vents in foundation walls, etc., thus lowering the risk of structural damage.
- Elevating a residential structure above flood elevations following FEMA guidelines.
- Demolition and new construction of residential structures following FEMA guidelines.
- Buyers of property should investigate historical flooding based on observations from property owner and other pertinent sources of available flood information.

Key Study Takeaways

- Fischer Lake, Lake Nally, Mills Pond, Gotha Pond, and Lake Hugh are considered private lakes.
- There is a relationship between multiyear above average rainfall and reported flooding in the Gotha Lakes Watershed.
- Stormwater model evaluations indicate that the Braemar development, septic tank seepage, and irrigation activities have significantly less impact on water levels than rainfall.
- It is recommended that the County direct the baseflow issue on Mills Pond to the Turnpike for consideration.
- Structural improvements for lake level management range between \$5 million and \$9 million
- Elevation, Removal and/or floodproofing of flooded structures are options for property owners.
- This report does not include any opinions regarding public purpose.

Next Steps

- If, desired, County staff will meet with the six property owners with reported flooding in a group meeting to discuss the study results and address any questions.
- County staff will meet with Florida Turnpike Enterprise to discuss the study results.
- Continue to monitor the Gotha Lakes Elevations to collect data points to assist in evaluating the viability of the options presented in the report and conduct cost/benefit analysis.
- Publish a Landlocked Lake pamphlet to inform citizens on drainage concerns/issues on these type of lakes.