



# Marion County

## Board of County Commissioners

### Workshop

### Meeting Agenda

McPherson Governmental Campus  
601 SE 25th Ave.  
Ocala, FL 34471  
Phone: 352-438-2323  
Fax: 352-438-2324

District 1 – Craig Curry, Commissioner  
District 2 – Kathy Bryant, Commissioner  
District 3 – Jeff Gold, Chairman  
District 4 – Carl Zalak III, Vice Chair  
District 5 – Michelle Stone, Commissioner

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**Tuesday, May 4, 2021**

**2:00 PM**

**McPherson Governmental  
Campus Auditorium**

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**Workshop to Discuss the Southeast Regional Water Plant Feasibility Study**

**INTRODUCTION OF WORKSHOP BY CHAIRMAN JEFF GOLD**

**PLEDGE OF ALLEGIANCE**

**ROLL CALL**

**WORKSHOP PRESENTATION**

1. [Southeast Regional Water Plant Feasibility Study - Jody Kirkman PE, Environmental Services Director](#)

**BOARD DISCUSSION AND CLOSING COMMENTS**



# Marion County

## Board of County Commissioners Workshop

### Agenda Item

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**File No.:** 2021-2917

**Agenda Date:** 5/4/2021

**Agenda No.:** 1.

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**SUBJECT:**

**Southeast Regional Water Plant Feasibility Study - Jody Kirkman PE, Environmental Services Director**

**INITIATOR:**

**Jody Kirkman, PE Environmental Services Director**

**DEPARTMENT:**

**Utilities**

**DESCRIPTION/BACKGROUND:**

Marion County is experience growth in the Southeast area of the County. The Utility Department is in need of adding treatment plant capacity to meet the needs of development and to develop an alternative water supply via construction of Lower Floridian Aquifer well(s) as alternative water supply. Staff has investigated potential locations for the new Regional Water Treatment Plant and will discuss the findings associated with each location and seek direction on the future site

**BUDGET/IMPACT:**

None

**RECOMMENDED ACTION:**

For presentation, discussion, and direction.

*Empowering Marion for Success*



# ENVIRONMENTAL SERVICES - UTILITIES

## SE REGIONAL WATER TREATMENT PLANT UPDATE

JODY C. KIRKMAN, PE – DIRECTOR OF ENVIRONMENTAL SERVICES  
KEVIN M. VICKERS, P.E. – SENIOR UTILITIES ENGINEER

# PRESENTATION OVERVIEW

- Motivation for the Project.
- Scope of the Project.
- History of the Project.
- Comparison of the Locations.
- Request for consensus on direction from Board.

# MOTIVATION FOR THE PROJECT

- Marion County is experiencing growth in the SE Region.
- Marion County Utilities provides water service to the region.
- The community has a need to increase Water Treatment Plant capacity.
- Minimum Flow and Level established for Silver Springs.
- Minimum Flow and Level being developed for Lake Weir.
- The community has a need to develop an alternative water supply.





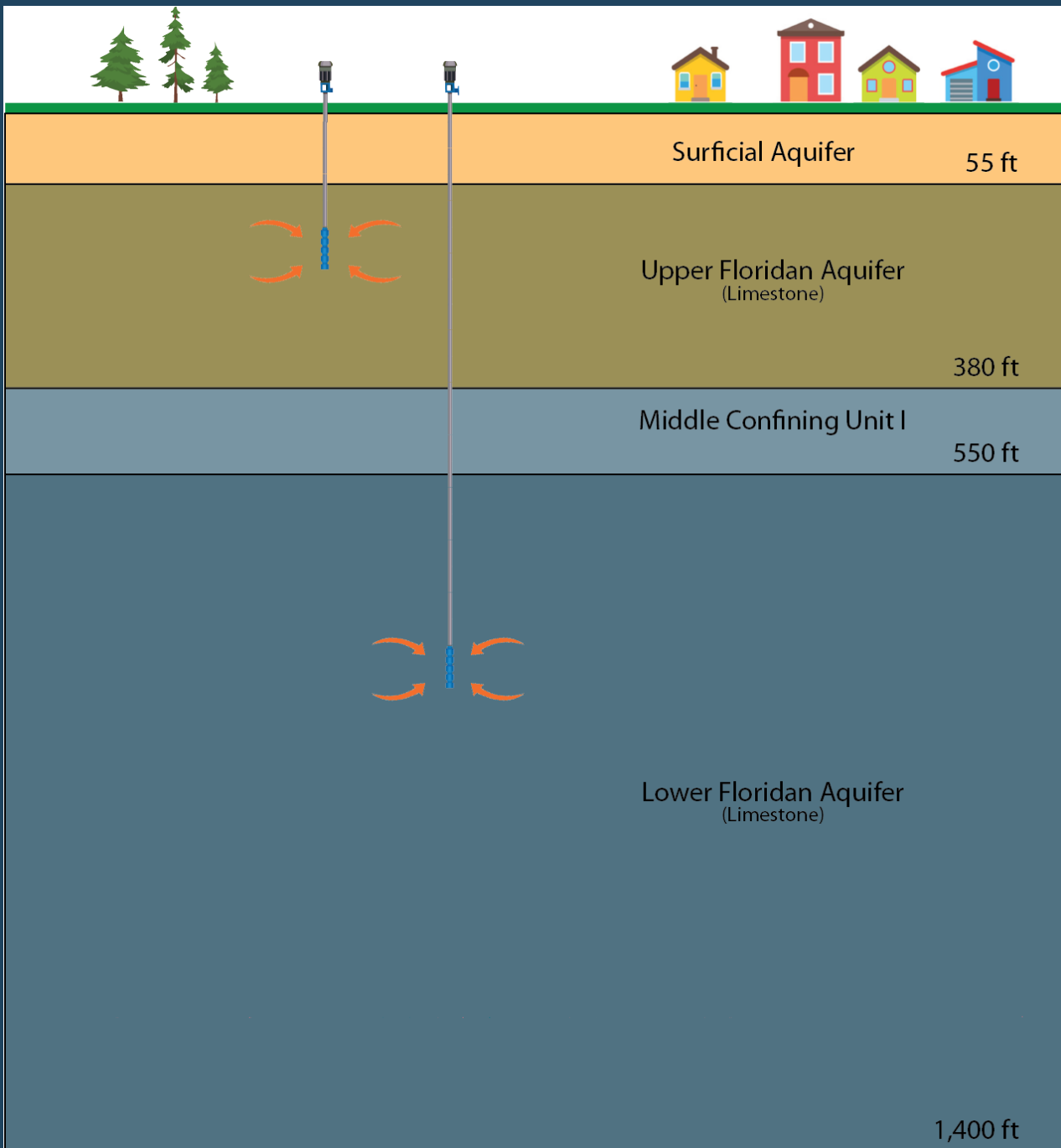
# SCOPE OF PROJECT



- Proposed Regional Drinking Water Plant
  - Wells
  - High Service Pump Building
  - Ground Storage Tank(s)
  - Treatment Equipment

- Develop Alternative Water Source via Lower Floridan Aquifer (LFA) Wells.
- Offsite transmission water mains.





- Upper Floridan Aquifer (UFA)
  - Relatively shallow – 50 ft. – 400 ft. BLS
  - Potential to interact with surface waterbodies like lakes and rivers
  - 100% of County wells utilize this source
  - Private wells utilize this source
- Lower Floridan Aquifer (LFA)
  - Deeper relative to UFA – 500 ft + BLS
  - Separated from UFA by impervious rock layer (must be verified for each site)
  - Less potential to interact with surface waterbodies
  - Deemed an alternative water supply source
  - Too deep for private wells

# PROJECT HISTORY

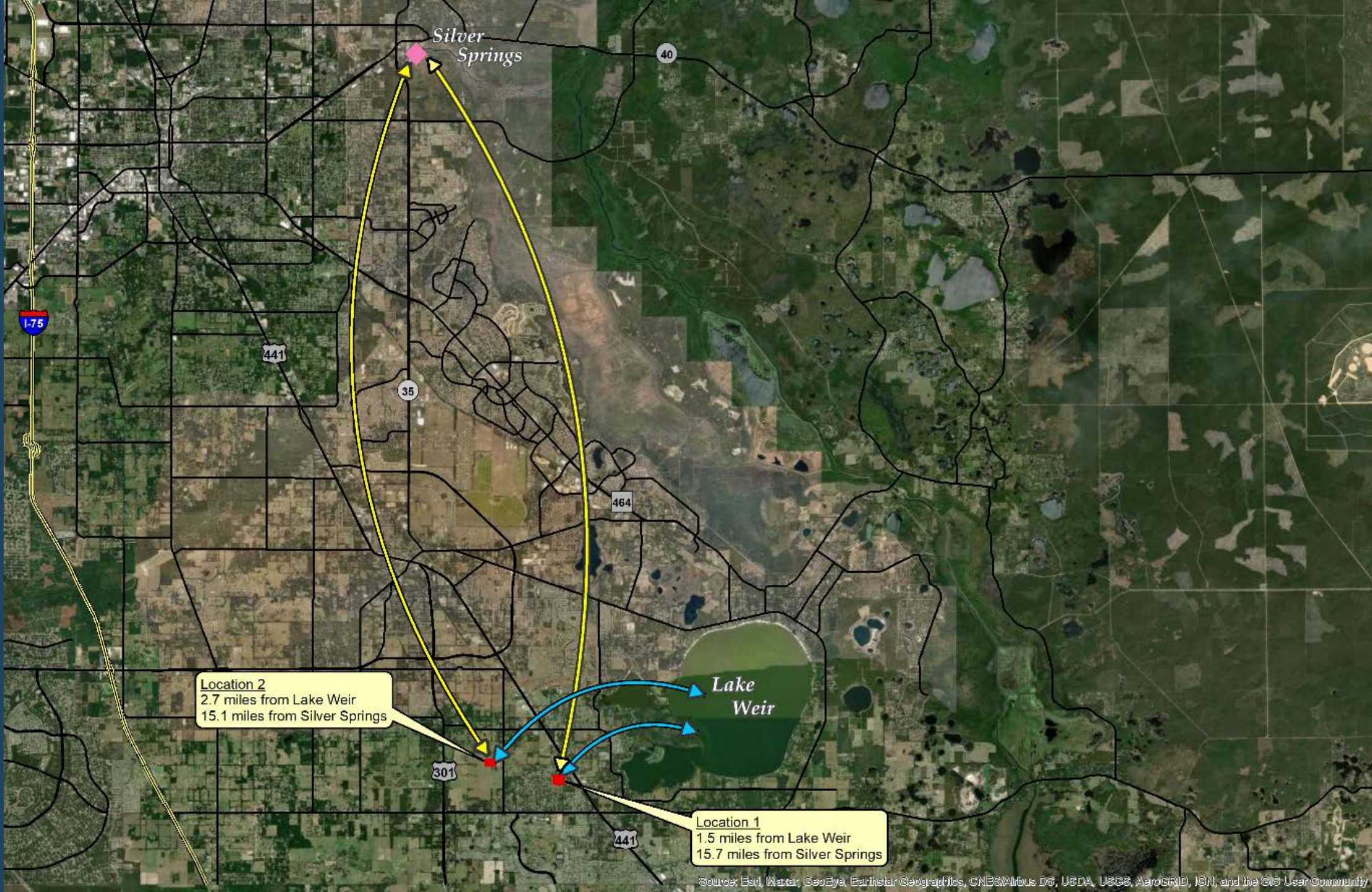
- 2017 Study performed that identified need for capacity.
- 2017 – 2018 Utilities staff began investigating potential sites.  
Identified Park owned property.
- 2018 – 2019 Performed Site Due Diligence for Park owned property.
- 2019 Special Use Permit process started for Park owned property.
- 2020 – 2021 Staff investigated alternative site and performed additional modeling and analysis to evaluate and compare two locations.
- 2021 Board Workshop to discuss findings.



# ANALYSIS OF LOCATIONS

- Two locations considered:
  - Location 1 – Existing Marion County Parks owned property.
  - Location 2 - Approved PUD WTP location.
- For each location staff and consultant analyzed:
  - Hydraulic (pipe) network to identify capacity of WTP.
  - Hydraulic (pipe) network to identify system improvements.
  - Hydrogeologic (groundwater) impacts.





**Location 2**  
2.7 miles from Lake Weir  
15.1 miles from Silver Springs

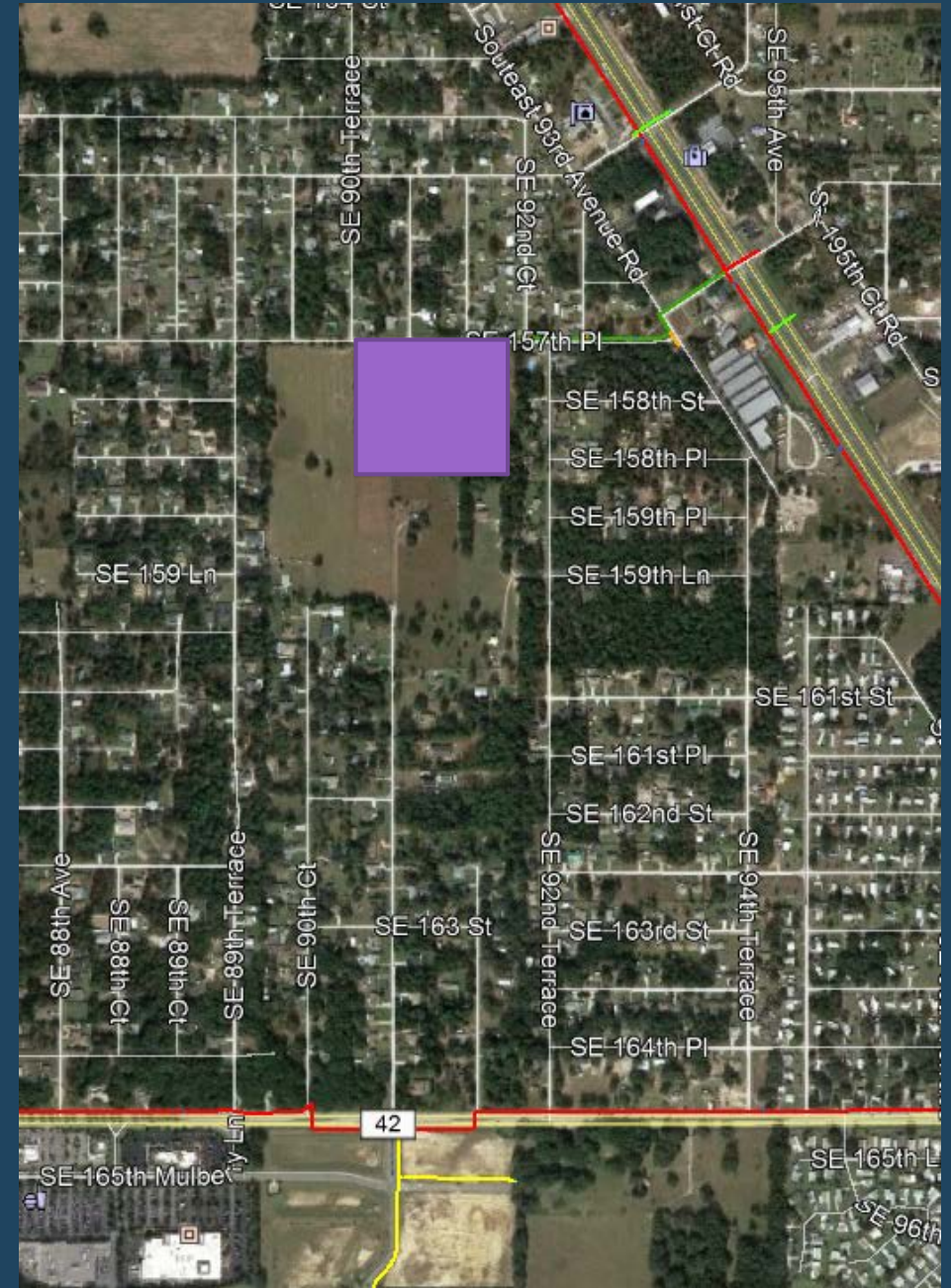
**Location 1**  
1.5 miles from Lake Weir  
15.7 miles from Silver Springs

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



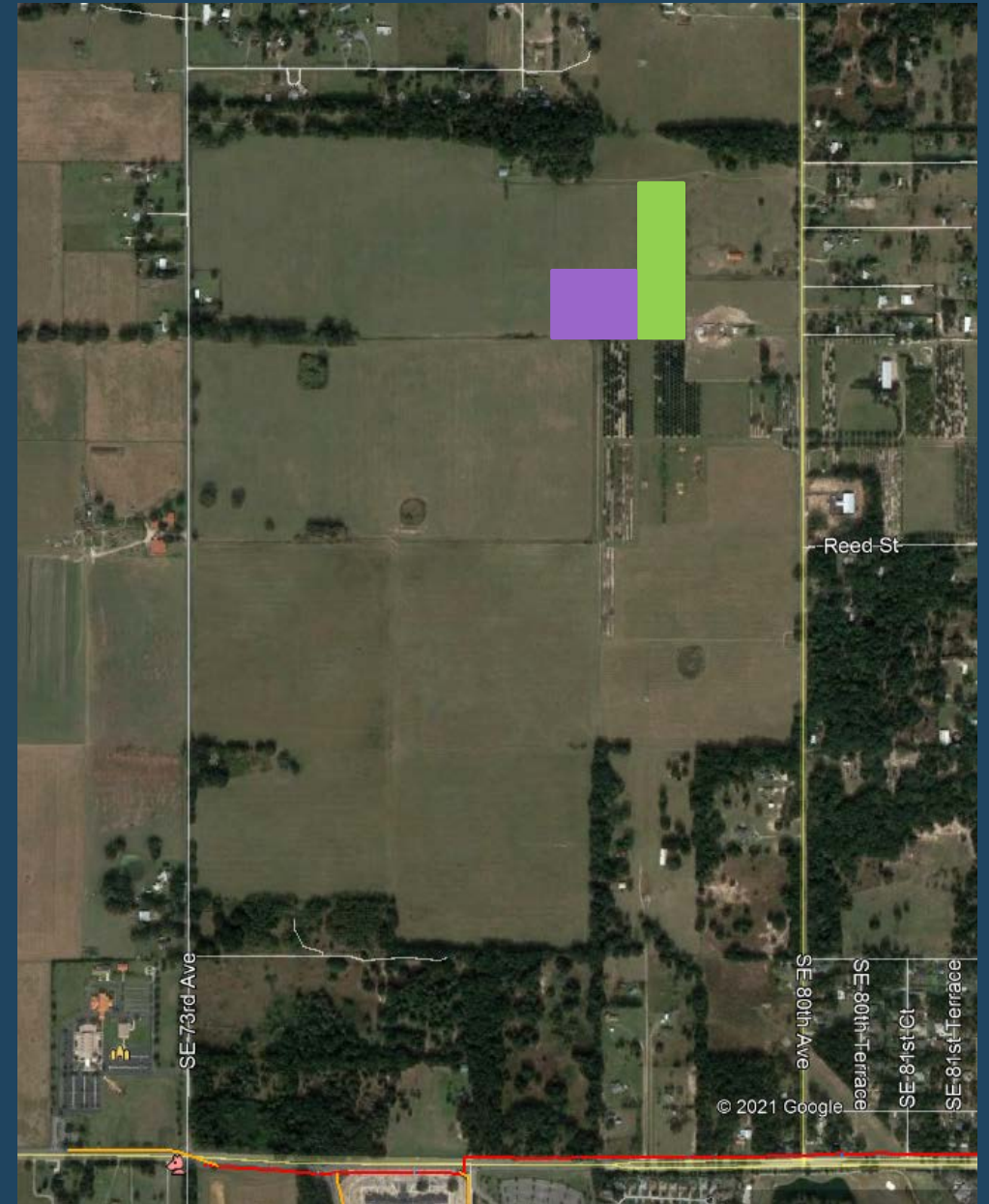
# LOCATION 1

- Park property owned on SE 157<sup>th</sup> Place.
- Due diligence performed.
- UFA ground water quality is good.
- LFA ground water quality is good but requires treatment.
- Special Use Permit will be required.
- Water main is stubbed to property.
- Located within developed neighborhood.
- Opportunity to construct park for community.



# LOCATION 2

- Developer owned land north of CR 42 and west of SE 80<sup>th</sup> Avenue. Acquisition of site will require modification to existing developer's agreement.
- UFA ground water quality is good.
- Water main will need to be extended to connect to transmission system.
- 2 - 12" UFA wells constructed but not equipped.
- Located in a relatively undeveloped area.





# LOCATION COMPARISON – PLANT CAPACITY

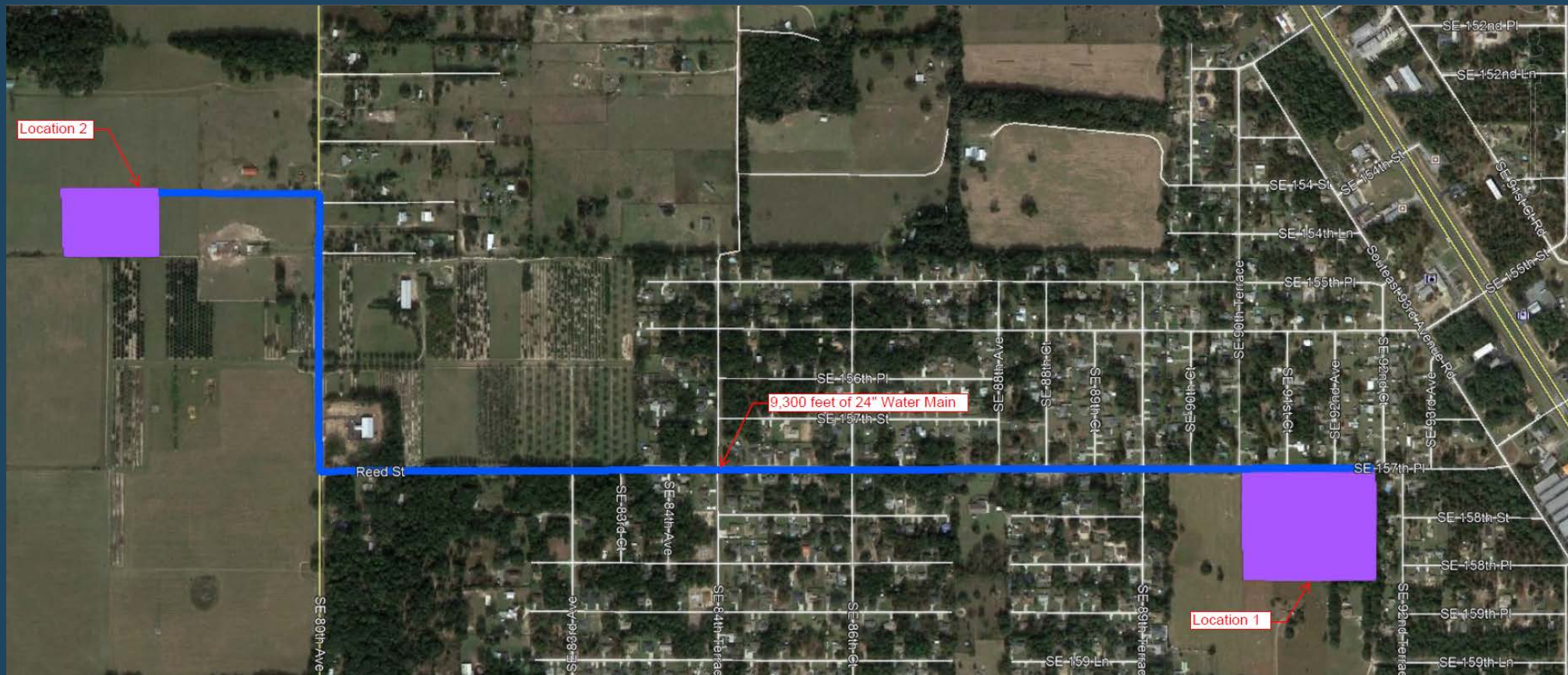
	Location 1	Location 2
Proposed Present Capacity (MGD)	2.73	2.69
Approx. Monthly Energy Cost (\$)	\$4,900	\$5,400
Proposed Future Capacity (MGD)	4.49	4.28
Approx. Monthly Energy Cost (\$)	\$9,400	\$10,200

- Both locations yield approximately the same size plant.
- Both locations reduce pumping from other existing WTPs.
- There are slight energy cost differences due to elevation differences between sites.



# LOCATION COMPARISON - HYDRAULIC

- At buildout, no significant difference in transmission main requirements between two sites.
- Location 2 requires watermain to be constructed (estimated cost - \$1.6 million).



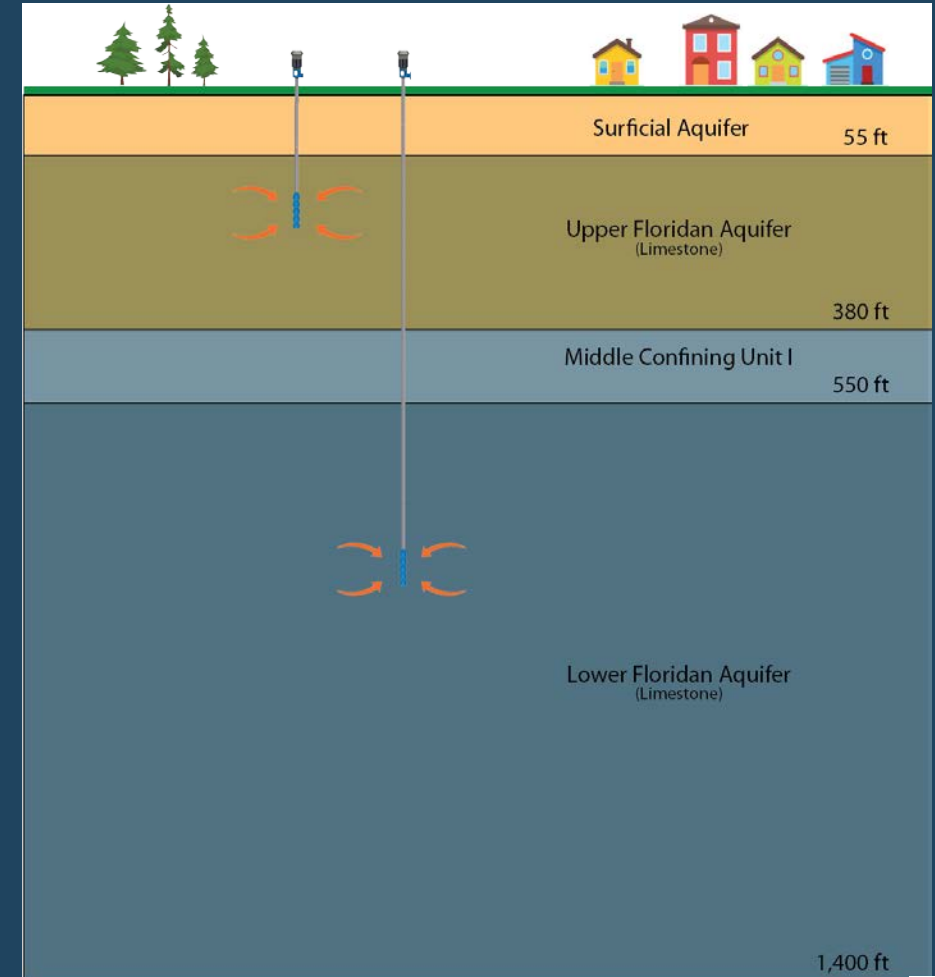
# LOCATION COMPARISON – HYDROGEOLOGIC

	Location 1	Location 2
Impact to Lake Weir	Net Positive	Net Positive
Impact to Silver Springs	Net Positive	Net Positive
Impact to Rainbow Springs	Net Positive	Net Positive

- Results above assumes that at 50% water comes from the Lower Floridan Aquifer.
- Both locations reduce water production from existing WTPs.

# LOCATION COMPARISON - LOWER FLORIDAN WELL

- Location 1 – Site specific data available.
- Location 2 – Site specific data not available.
- Reasonable to assume similar water quality between sites.



# CONSENSUS ON DIRECTION

Option 1 – Staff to pursue Location 1.

OR

Option 2 – Staff to pursue Location 2.

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THANK YOU FOR YOUR TIME



ANY QUESTIONS OR COMMENTS?