Empowering Marion for Success

ENVIRONMENTAL SERVICES - UTILITIES

SE REGIONAL WATER TREATMENT PLANT UPDATE

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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.

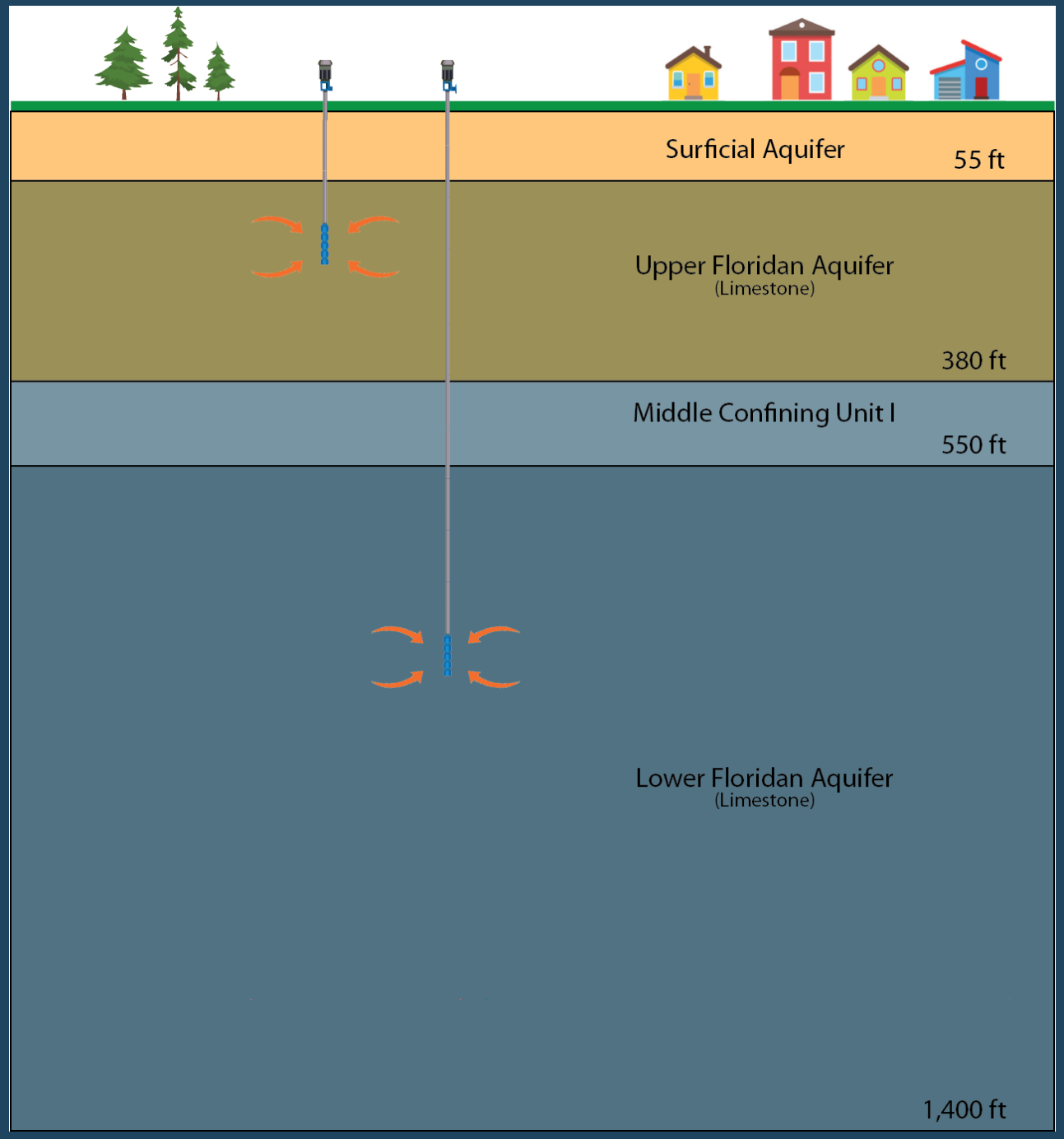
MOTIVATION FOR THE PROJECT

- 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

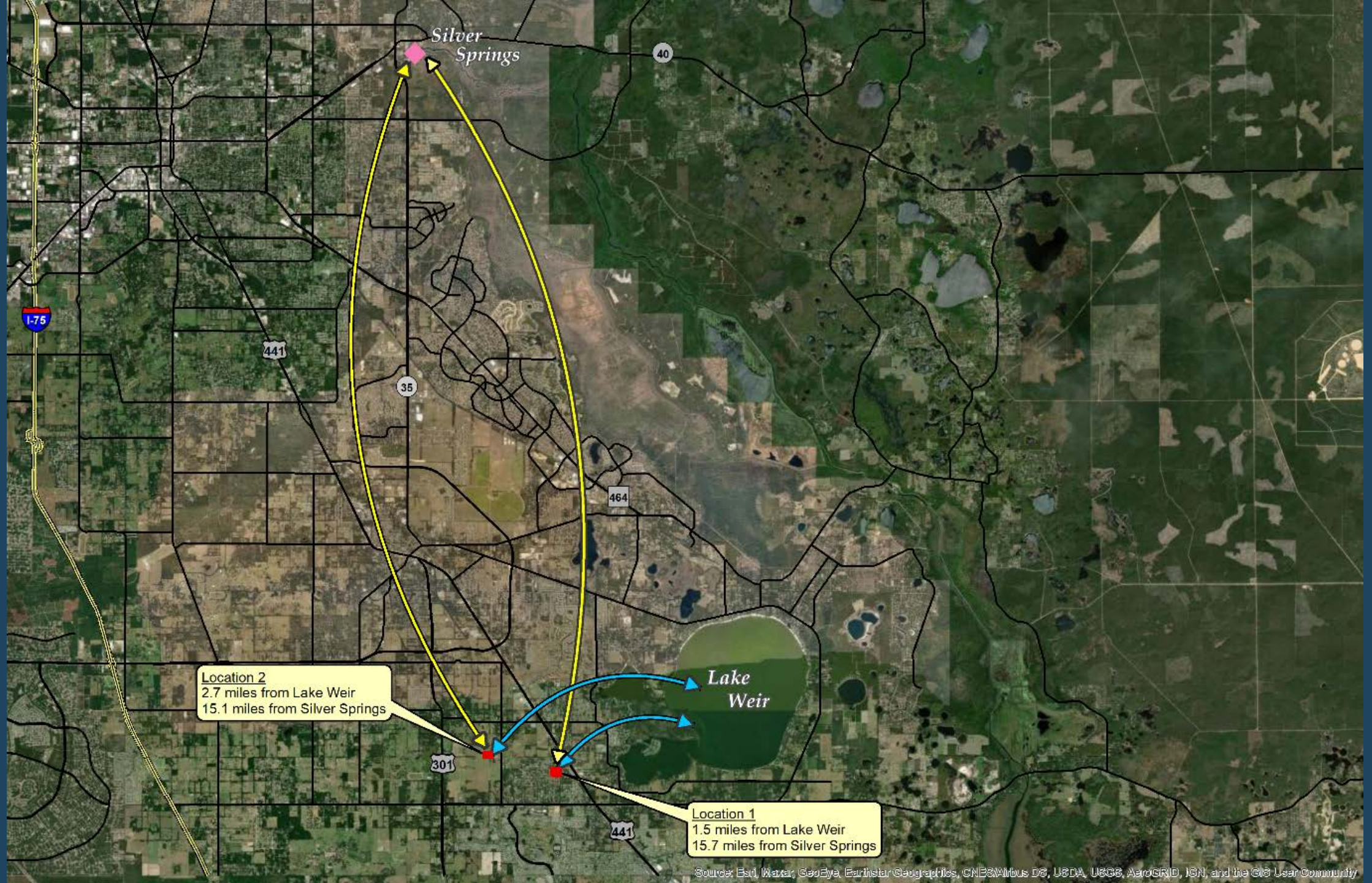
- Lower Floridan Aquifer (LFA)
  - Deeper relative to UFA – 500 ft + BLS
  - Separated from UFA by impervious rock layer (must be verified for each site)
  - Less potential to interact with surface waterbodies
  - Deemed an alternative water supply source
  - Too deep for private wells

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.

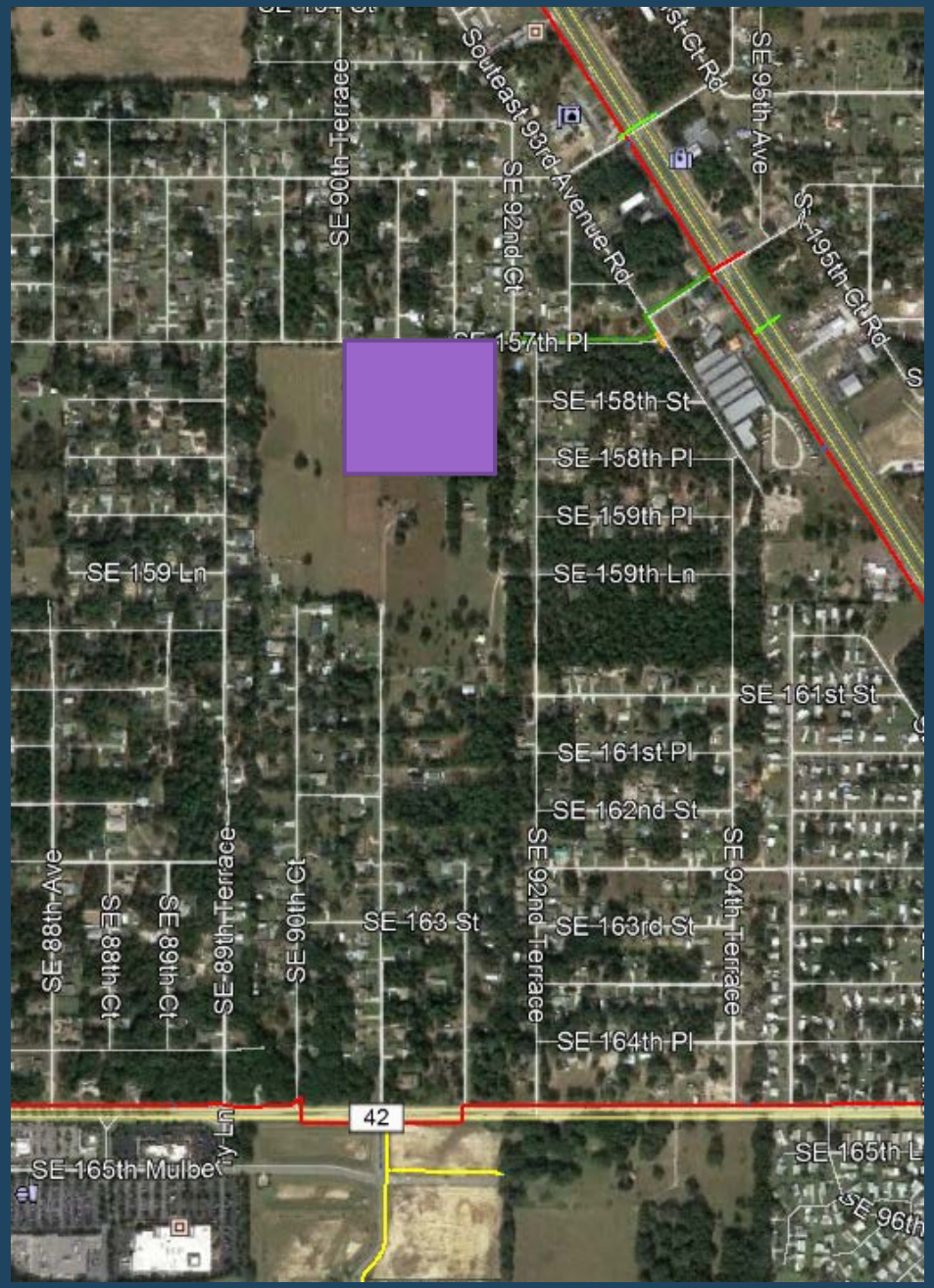
ANALYSIS OF LOCATIONS

- 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.


Silver Springs
40
I-75
441
35
464
Lake Weir
Location 2
2.7 miles from Lake Weir
15.1 miles from Silver Springs
301
441
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

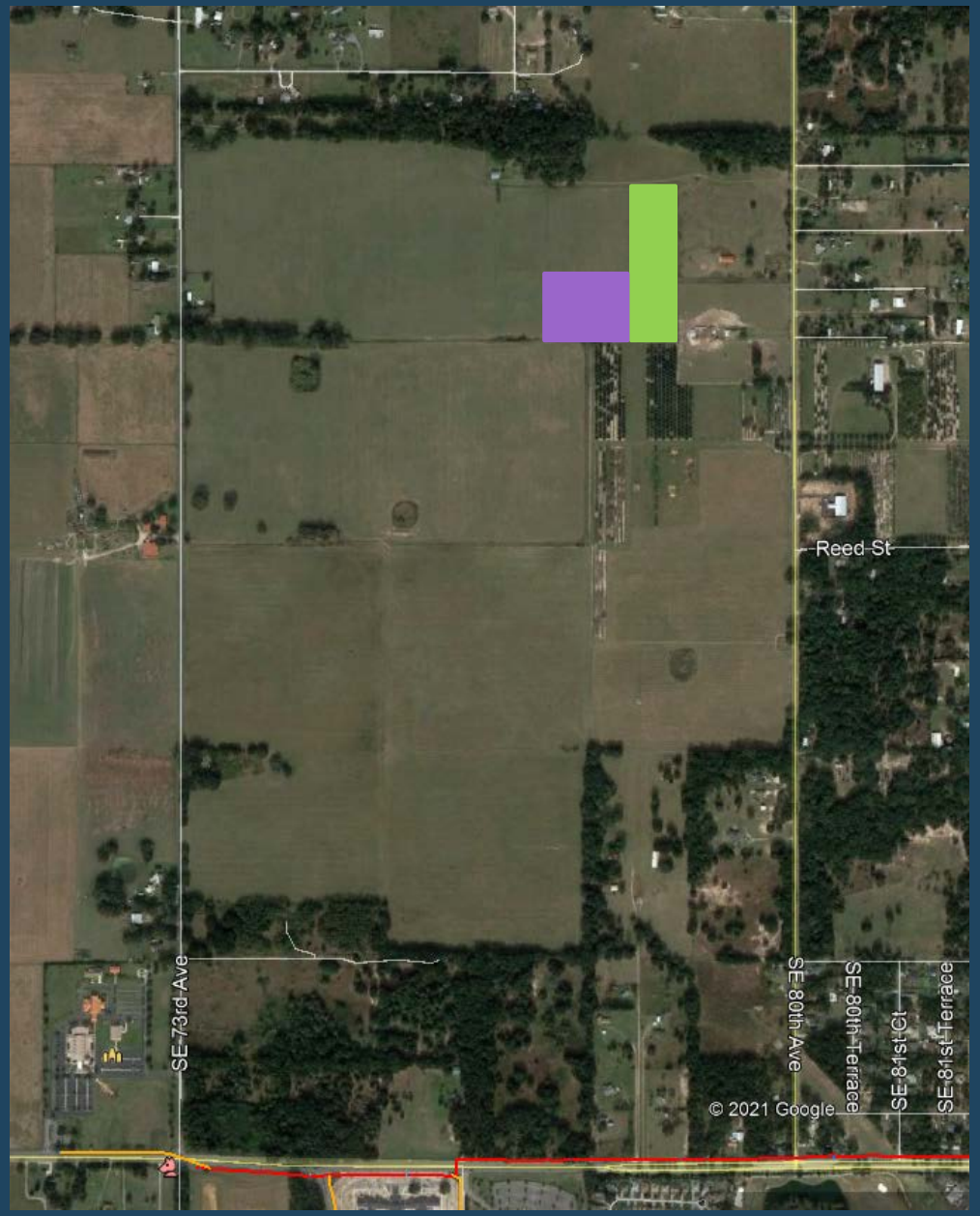
LOCATION 1

- Park property owned on SE 157th 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 80th 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.



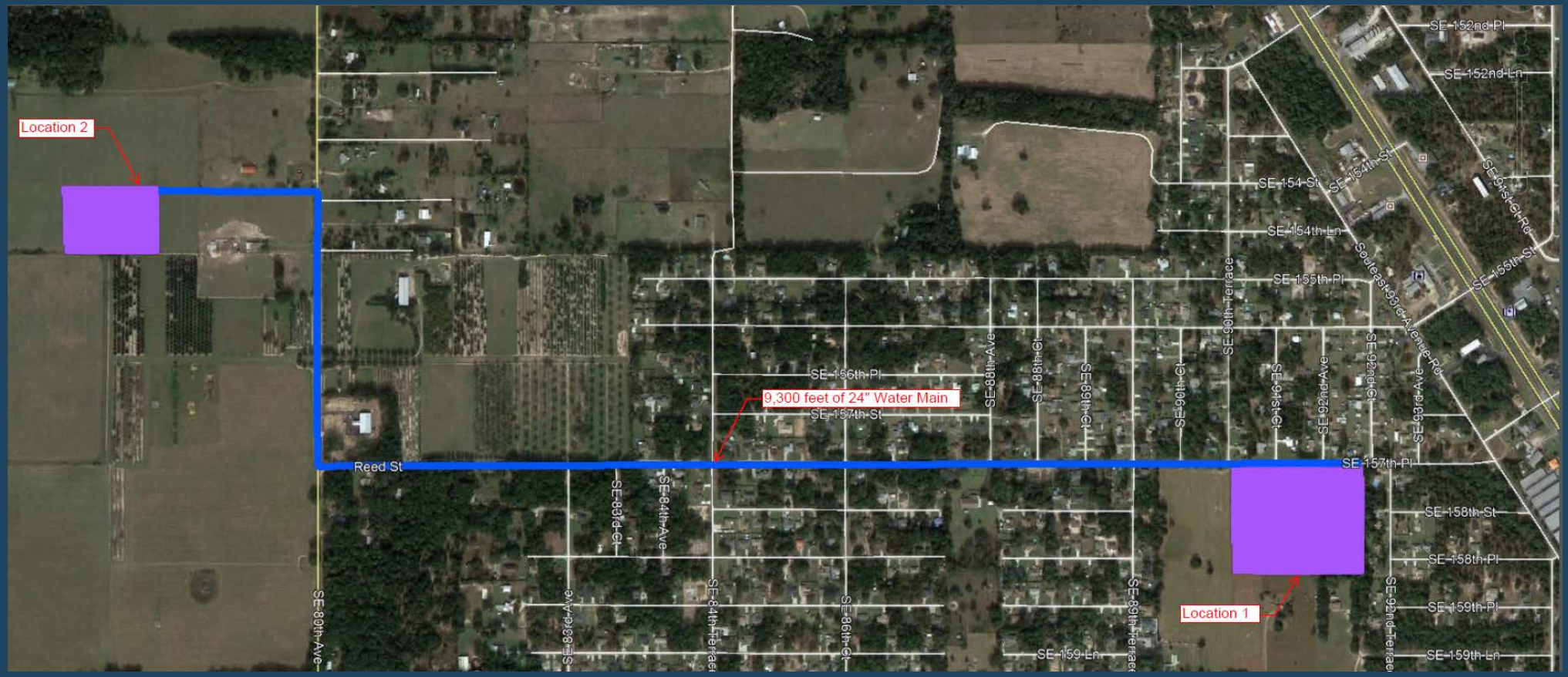
LOCATION COMPARISON – PLANT CAPACITY

	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).



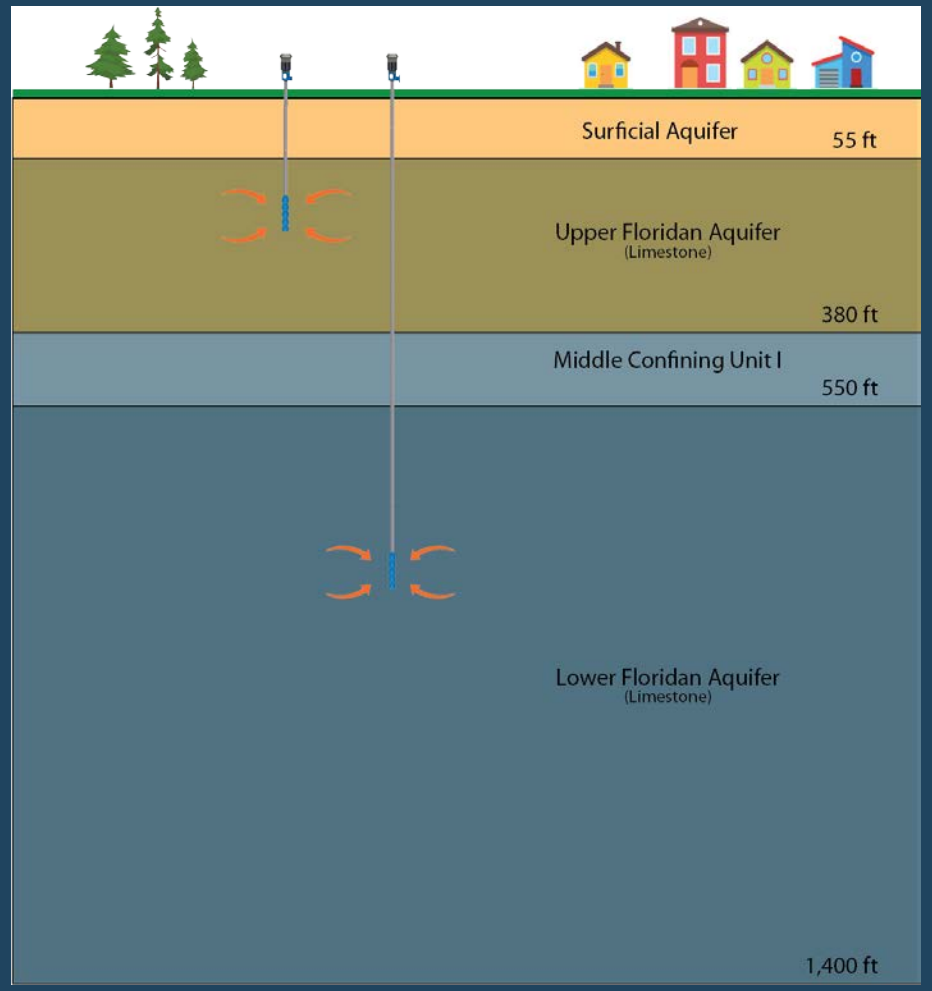
LOCATION COMPARISON – HYDROGEOLOGIC

	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.

THANK YOU FOR YOUR TIME

ANY QUESTIONS OR COMMENTS?