Advancing the Sapphire Necklace Restoration Concept

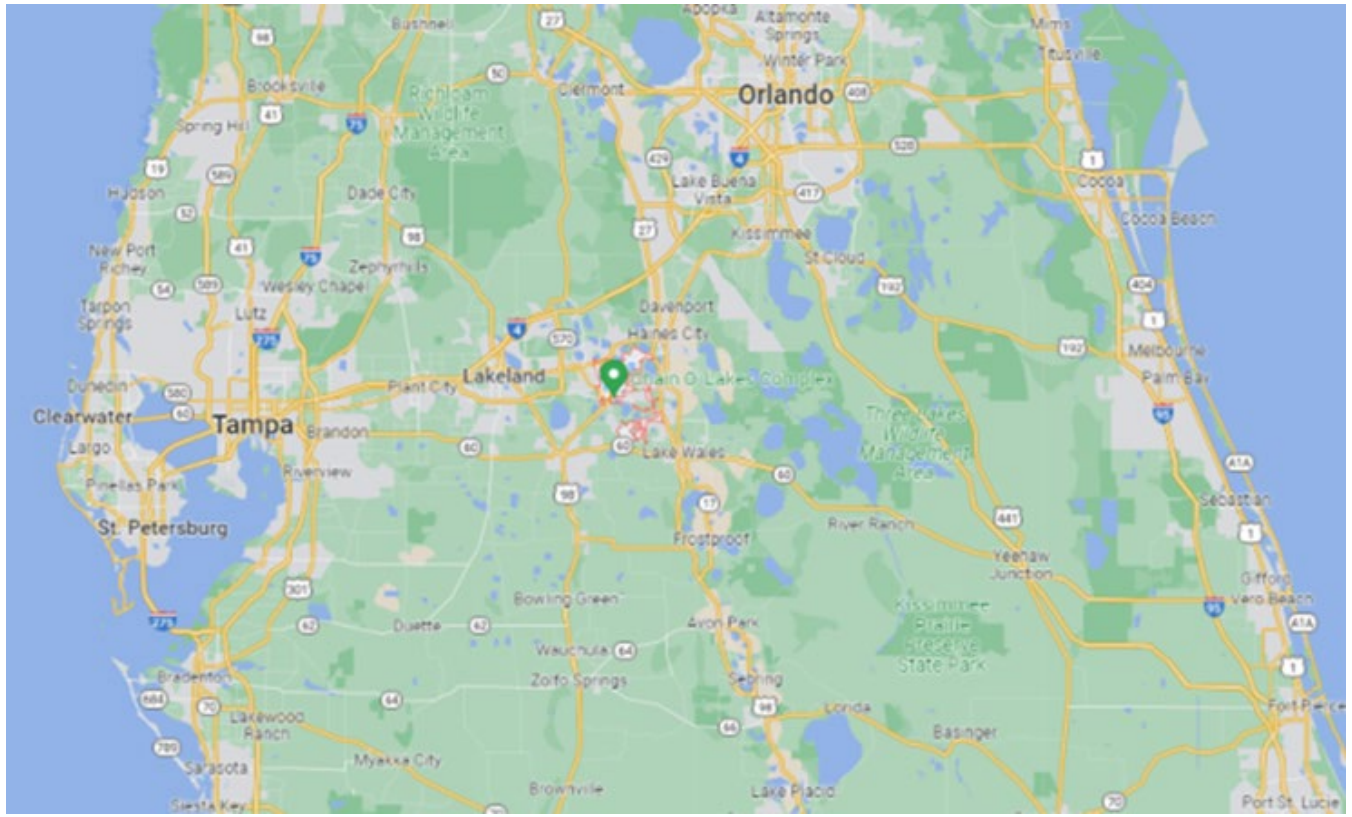
SESWA 17th Annual Conference, October 6, 2022

Jeff Herr, PE, Brown and Caldwell

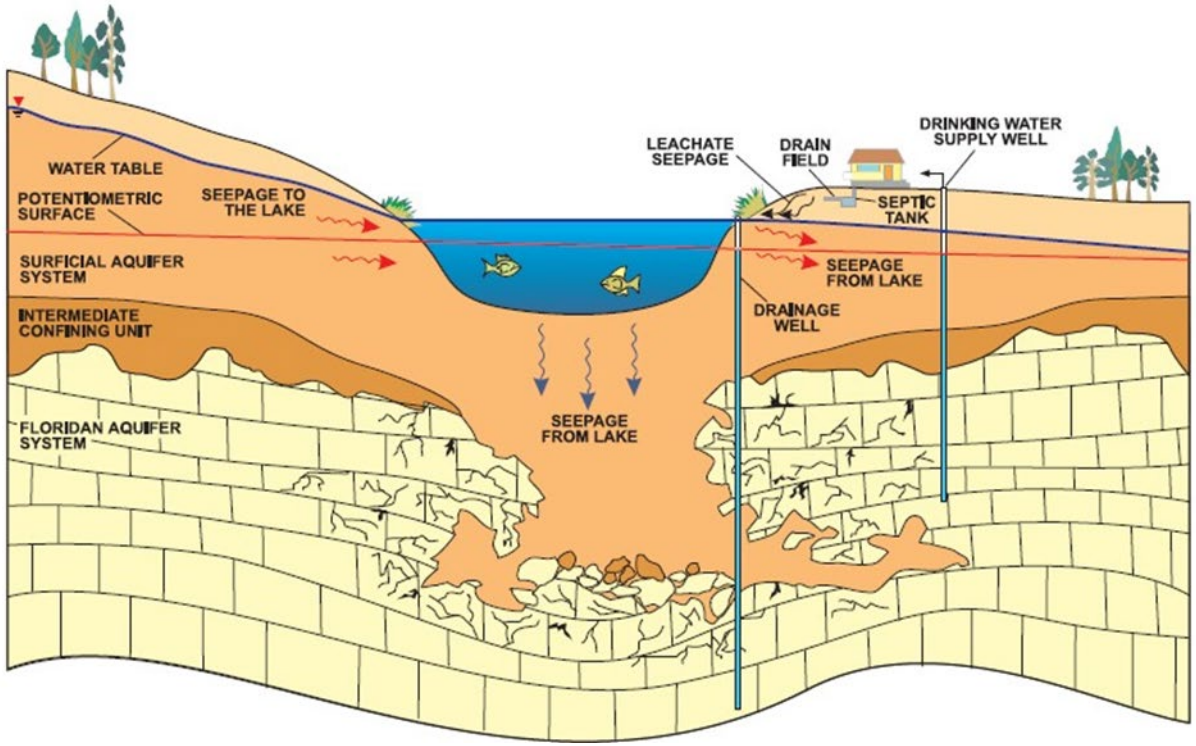
Acknowledgements

- City of Winter Haven
  Mike Britt, Project Manager
- Black and Veatch
  Jon Dinges, Project Manager

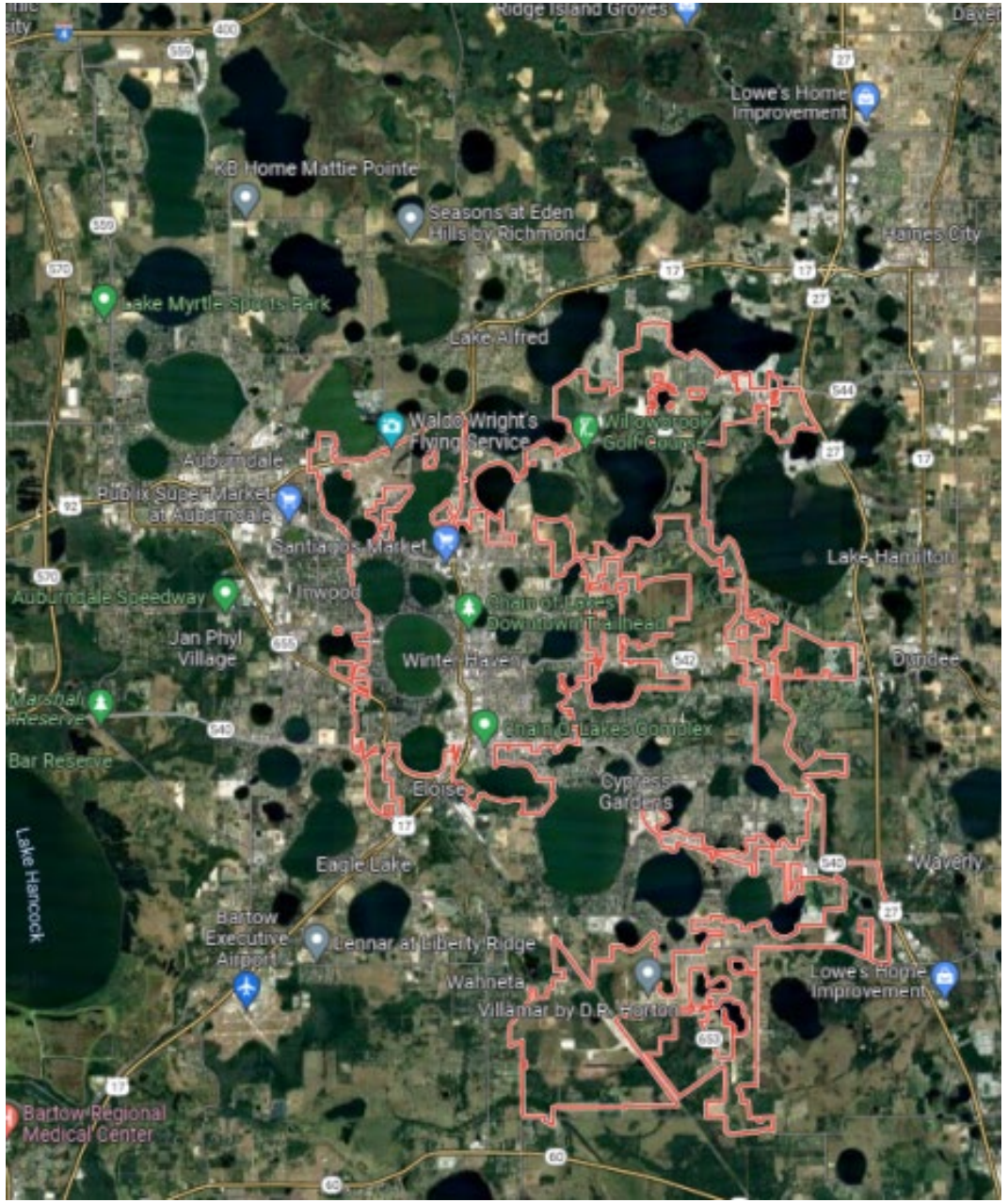
“Chain of Lakes City”



Lake Wales Ridge



Sometimes referred to as the Mid-Florida Ridge, is **a sand ridge running for about 150 miles south to north in Central Florida.**



WE ARE A WATER-CENTRIC COMMUNITY

From water skiing to Bluegill fishing, "The Chain of Lakes City" embodies a culture connected to water.

Our community's culture, economy, and way of life has been and will continue to be shaped by water. There are 50 lakes within or adjacent to Winter Haven's City limits, and many other lakes in the local area. Our lakes are one of the most valuable social, economic, and environmental resources for the community. The lakes are a defining feature of Winter Haven and have shaped much of the local character and culture. A notable example is Cypress Gardens, which opened in the 1930s and was known as the "Water Ski Capital of the World" and depended on Lake Eloise to sustain its operations. To this day, Legoland Florida continues its successful business in that same location.

Our Chain of Lakes generates

$120M

annually in economic impact to the area

The health of our lakes correlates with the quality of life, economic opportunity, and cultural identity of Winter Haven.

VOICES & VALUES OF ONE WATER

Legacy Landowner

Values family heritage and fair price of land

"My family have been stewards of this land for generations. My heirs are anxious to develop but I'm willing to have a conversation about the right project to ensure ongoing stewardship."

Builder / Developer

Values time and efficiency of development

"I see that Winter Haven is growing and demand for housing is intense. I'm taking on costs and risks to meet demand and need project approval and construction to run smoothly."

Existing Resident

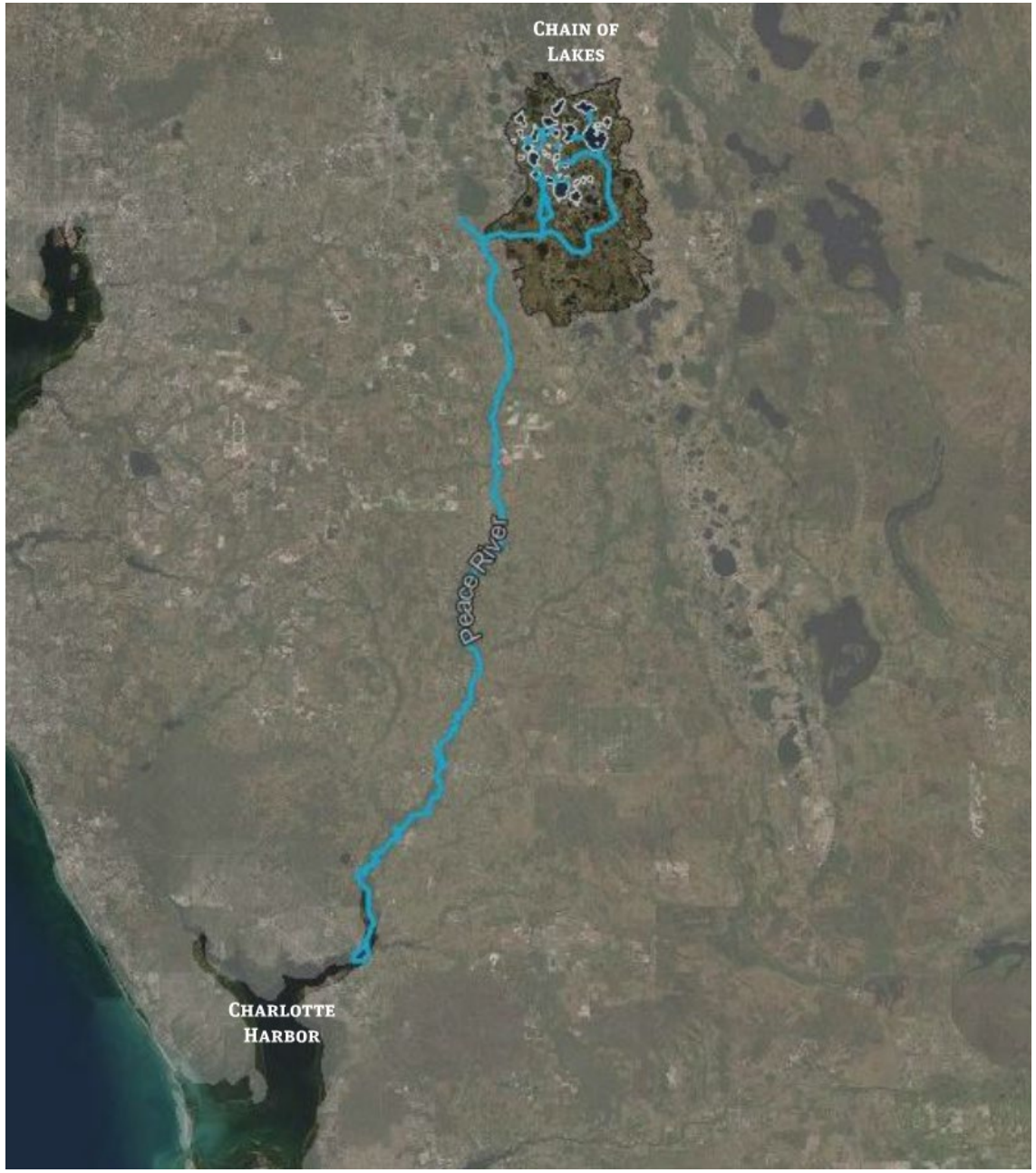
Values quality of life and low utility rates

"Our family enjoys seeing wildlife, fishing, and sunset dinners with friends on a day out on the lakes - we love our Chain Life."

Future Resident

Values quality of life and low utility rates

"My partner and I work from home and are looking for an affordable place to live that has great recreational amenities for our families to explore."



Winter Haven is situated at the headwaters of the Peace River, in the Peace Creek watershed,

and is a critical part of maintaining healthy flows of water to the Peace River and the Charlotte Harbor Estuary, an estuary of national significance. In addition, recharge to the Floridan Aquifer System, our primary source of drinking water, occurs in the Winter Haven area. The Floridan Aquifer system also sustains lakes, springs, and rivers throughout Florida and is essential to our quality of life.

Peace Creek's Water Budget

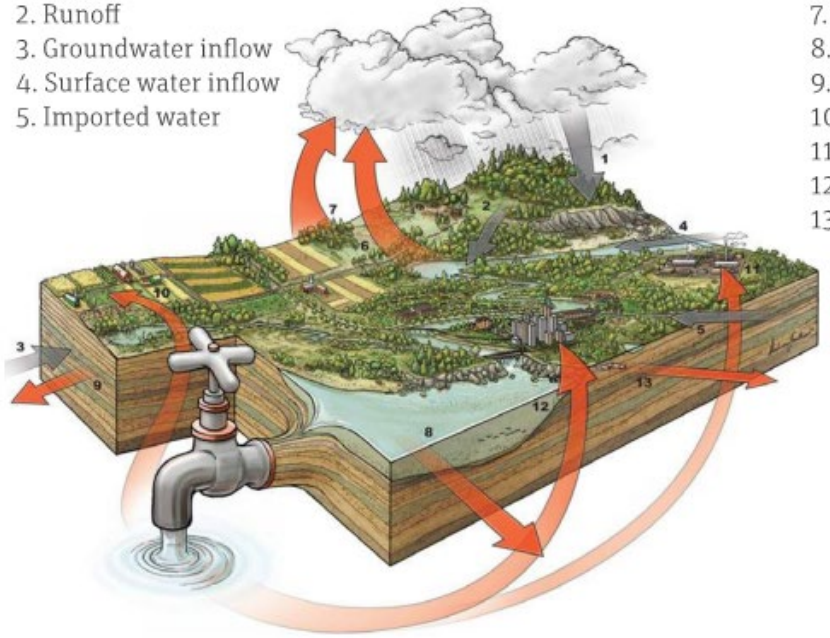
The total rainfall in the region is our water budget. We begin depleting our aquifer resource when we use more water than what is stored from rainfall.

Inputs

1. Rainfall
2. Runoff
3. Groundwater inflow
4. Surface water inflow
5. Imported water

Outputs

6. Evaporation
7. Transpiration
8. Surface water outflow
9. Groundwater outflow
10. Irrigation
11. Industrial uses
12. Residential uses
13. Waste water outflow



Balancing the Water Budget

We can draw water from the aquifer, but we will need to find ways to add it back in order to "balance our water budget."

Peace Creek Watershed lost

27

billion gallons of water storage capacity over the last 100 years.

Factors Stressing Our Water Supply

Population Growth

Our growing population is consuming more water.

Urbanization

Roads and buildings are preventing water from infilltrating the aquifer.

Lake & Wetland Degradation

Human activities are degrading the storage capacity of lakes and wetlands.

Limited Natural Supply

We are limited in the amount of water we can draw from the aquifer and natural systems.

Aging Infrastructure

Antiquated infrastructure increases cost and decreases efficient use of water resources.

Climate Change

Variations in our climate impacts the frequency of rainfall, our primary source of water supply.

WHAT IS THE ONE WATER APPROACH?

One Water is a *SHIFT* in community water management: from managing water as waste to *MANAGING WATER AS RESOURCE*. Every drop matters for the health of our regional economy, communities, and environment.

FROM

DEGRADED WATERSHED


OVERTAPPED SUPPLY


GREY CITY

TO


RESTORED WATERSHED


SUSTAINABLE SUPPLY


GREEN CITY

Restore
restoring lakes and wetlands that provide natural water storage.

Reclaim
modernizing wastewater reclamation technology.

Recharge
replenishing the natural aquifers using nature-based solutions.

Reuse
increasing the life cycle of water as a renewable resource in Winter Haven.

WINTER HAVEN'S ONE WATER BLUEPRINT PROVIDES THE GOALS, STRATEGIES, AND TACTICS TO HELP SUSTAIN OUR WATER SUPPLY OVER THE NEXT GENERATION OF WINTER HAVEN'S GROWTH.

Winter Haven's One Water Game Plan

VISION: THE SAPPHIRE NECKLACE

Winter Haven's Sapphire Necklace is the most significant for 'Nature-Based Solutions' in the Heartland Region, providing a strategy for restored water resources and added community value for a sustainable future.

This approach will help replenish much of the estimated 27 billion gallons of water lost from our area's wetlands and aquifers over the past century, yielding benefits locally and across a 13-county region.

FLAGSHIP PROJECTS

Nature-Based Solutions to Restore Peace Creek

Working with public agencies and future development to restore 5,000 acres of wetlands to store 4 billion gallons of water for local and regional benefits to lakes, streams, rivers, and aquifer systems.

Water Reuse to reduce future demand

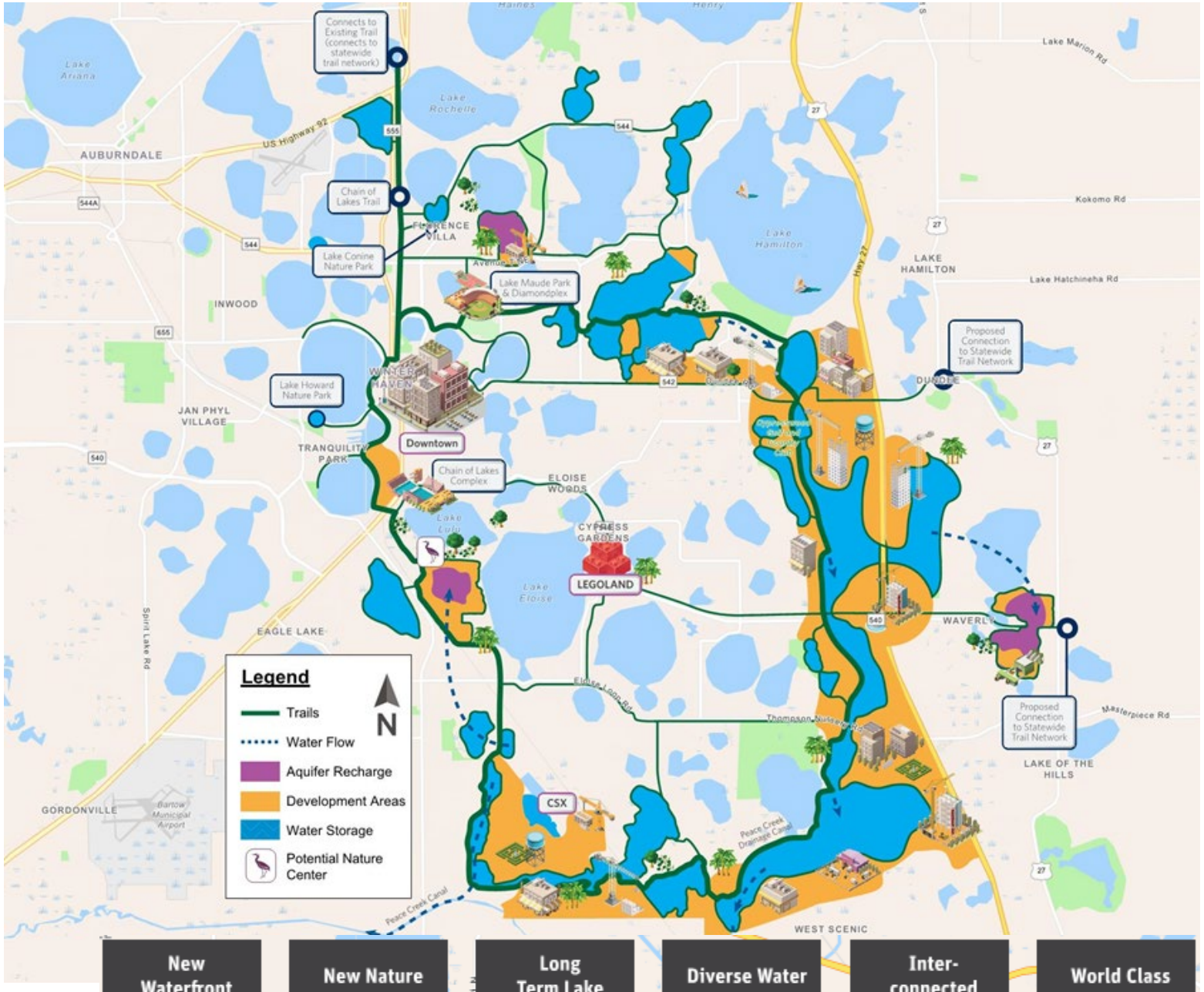
Connecting thousands of septic tanks to public sewer systems to improve water quality of lakes and streams, and beneficially reuse the water.

Upper Floridan Aquifer Recharge Demonstration Project

Implementing a nature-based solutions project by retrofitting a stormwater pond into a reclaimed water recharge park for recreational, groundwater, and lake-level benefits.

Reclaim the Lake Conine Wetland Park

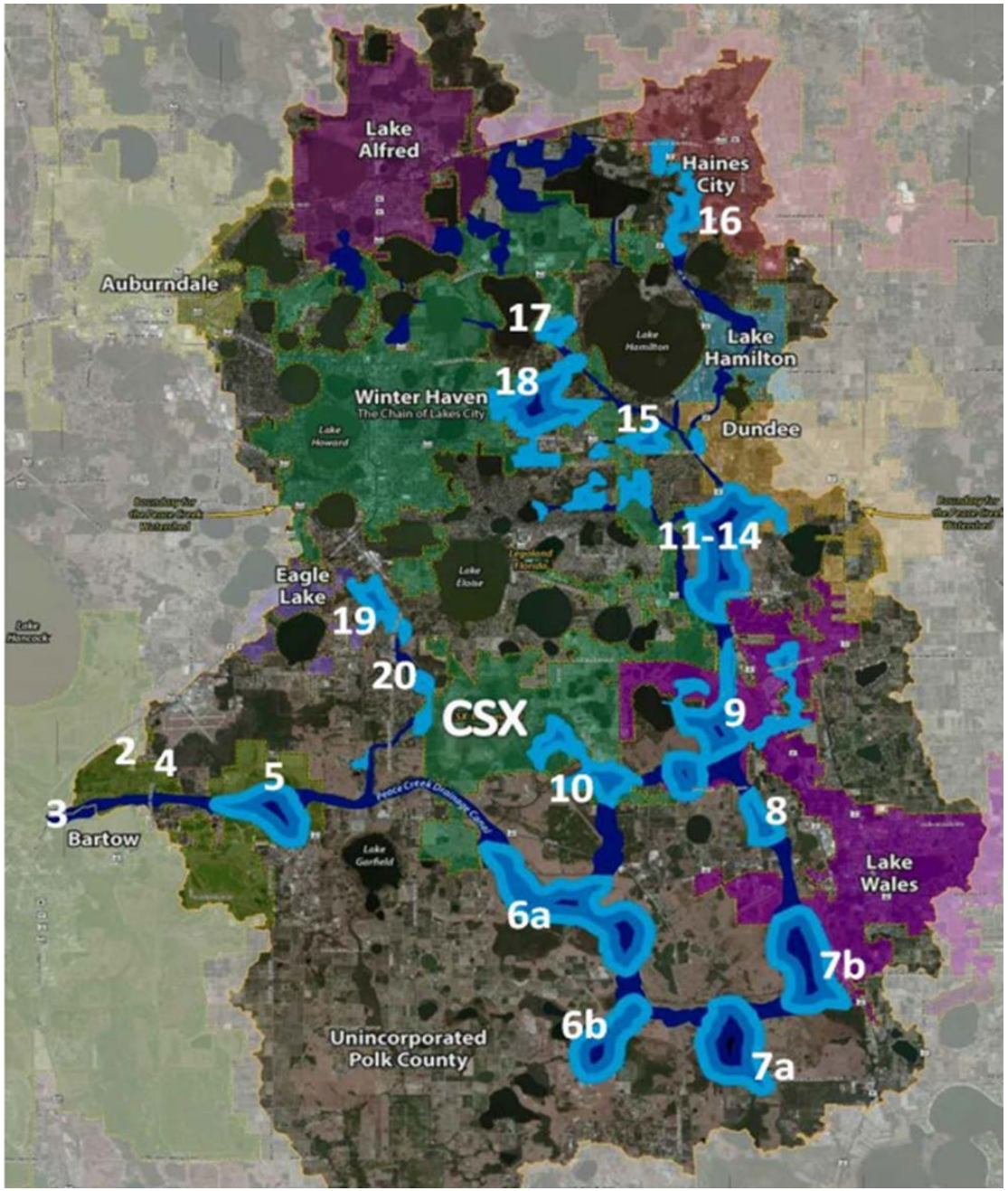
Constructing the City's 4th wetland treatment nature park to improve water quality and reduce flooding, while adding trails and other recreational amenities in a disadvantaged neighborhood.

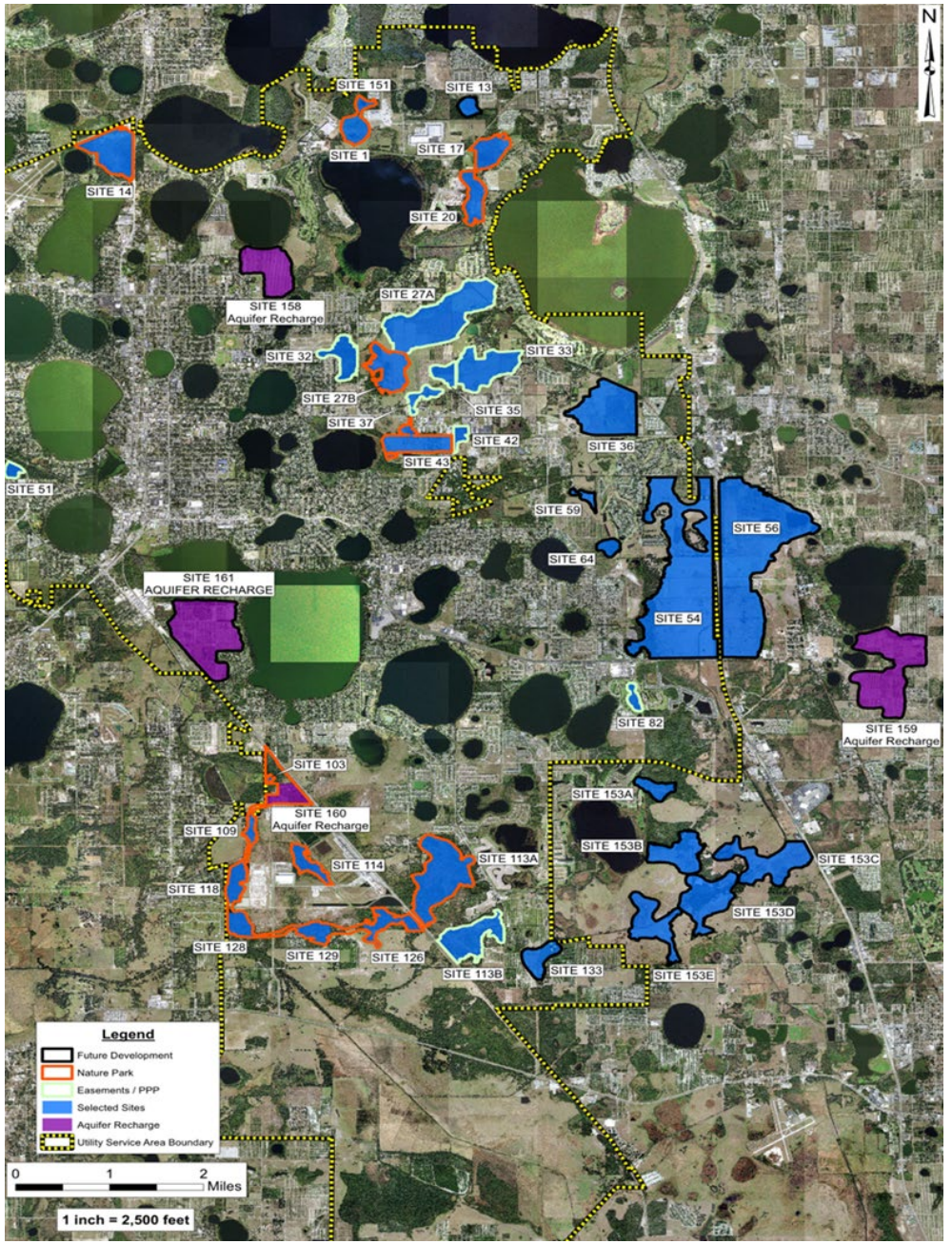


- Natural systems restoration
- Surface water storage
- Surficial and Floridan aquifer recharge
- Water quality enhancement
- Interconnected greenway
- Recreational and educational amenities

Phase 2 Sapphire Necklace Evaluation Scope

- Data collection and analysis
- Analyze ~40 potential restoration sites
- Quantify primary benefits
- Develop conceptual land, capital, annual O&M, and life cycle costs
- Calculate cost effectiveness (Cost per unit of primary benefit)
- Prioritize based on cost effectiveness, location, connectivity with other sites and other qualitative site factors
- Group adjacent projects to phase implementation of segments
- Cost effectiveness tool provided for future city analyses


Lake Alfred
Haines City
16
Auburndale
17
Lake Hamilton
18
Winter Haven
The Chain of Lakes City
15
Dundee
11-14
Eagle Lake
19
20
CSX
9
2
4
5
10
8
3
Bartow
Lake Wales
6a
7b
6b
Unincorporated Polk County
7a

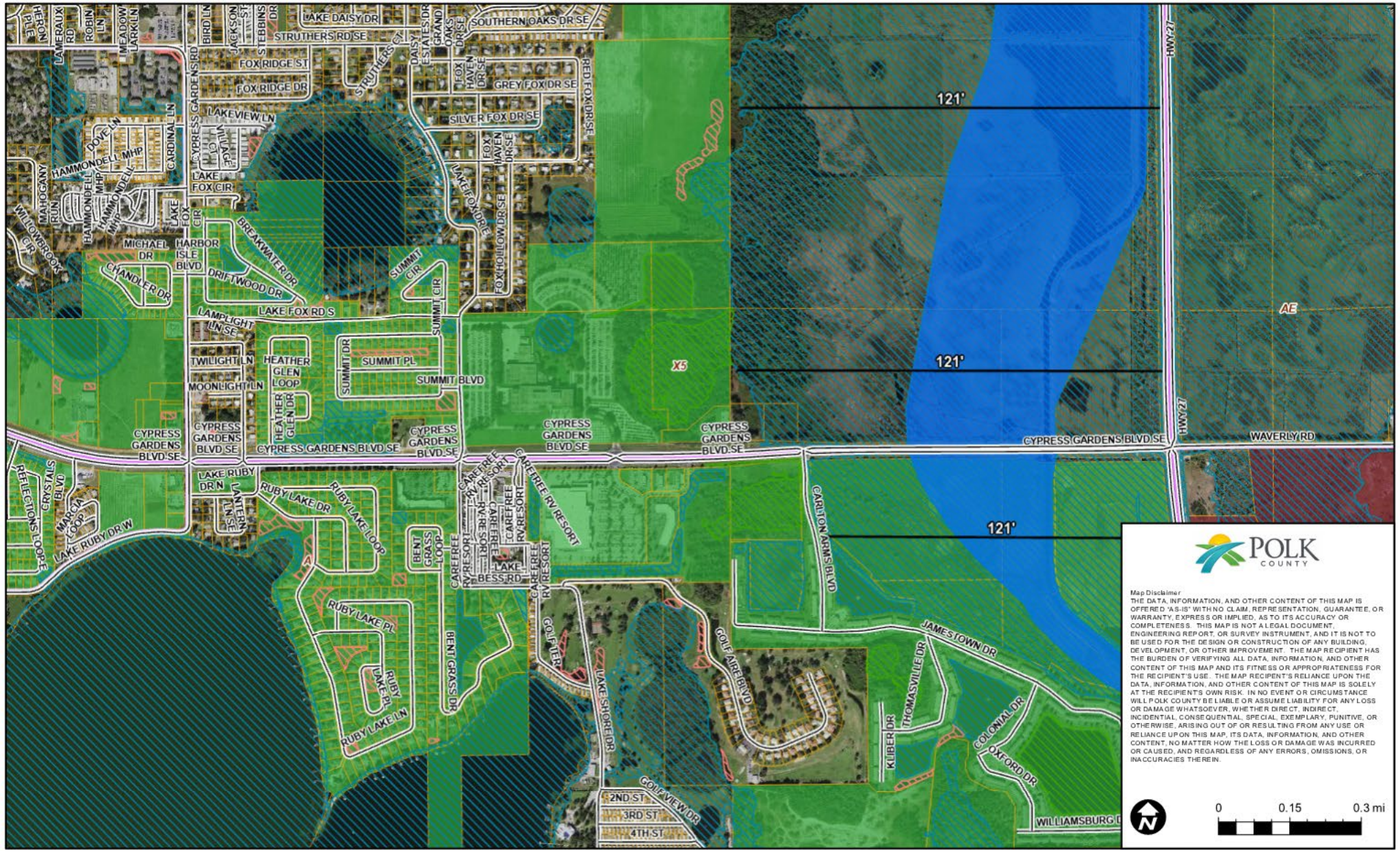

N
SITE 151
SITE 13
SITE 1
SITE 17
SITE 14
SITE 20
SITE 158 Aquifer Recharge
SITE 27A
SITE 32
SITE 33
SITE 27B
SITE 35
SITE 37
SITE 42
SITE 36
SITE 43
SITE 51
SITE 59
SITE 56
SITE 64
SITE 161 AQUIFER RECHARGE
SITE 54
SITE 82
SITE 159 Aquifer Recharge
SITE 103
SITE 153A
SITE 160 Aquifer Recharge
SITE 109
SITE 153B
SITE 153C
SITE 114
SITE 113A
SITE 118
SITE 153D
SITE 128
SITE 129
SITE 126
SITE 113B
SITE 133
SITE 153E
Legend
Future Development
Nature Park
Easements / PPP
Selected Sites
Aquifer Recharge
Utility Service Area Boundary
0
1
2
Miles
1 inch = 2,500 feet

Specific Site Characteristics

- Site area (acres)
- Area of identified National Wetlands Inventory (NWI) wetland (acres)
- Area of hydric/muck soils (acres)
- Area of 100-year floodplain (acres)
- 100-year Base Flood Elevation (BFE, ft. NAVD88)
- Average site existing ground surface elevation (ft. NAVD88)
- Potential Upper Floridan Aquifer (UFA) recharge with wells (MGD)
- Adjacent to major drainage feature (channel, yes or no)
- Provides connectivity to other sites (yes or no)
- Provides direct public right-of-way access (for easy public access, yes or no)
- Adjacent to a public park (public park = destination, yes or no)
- Adjacent to a lake (yes or no)
- Land cover, Pasture (P), Forested/Shrub (F/S), Emergent (E), and Open (O)

Quantified Benefits and Qualitative Factors

- Surface water storage volume
- Wetland restoration/creation
- Wetland enhancement
- UFA recharge with wells
- Adjacent to major drainage feature
- Provides greenway connectivity
- Direct R/W access
- Adjacent to public park
- Adjacent to lake


LAKE DAISY DR
STRUTHERS RD SE
SOUTHERN OAKS DR SE
FOX RIDGE ST
FOX RIDGE DR
GREY FOX DR SE
SILVER FOX DR SE
LAKEVIEW LN
LAKE FOX CIR
BREAKWATER DR
DRIFTWOOD DR
LAKE FOX RD S
SUMMIT CIR
SUMMIT PL
SUMMIT BLVD
LAMPLIGHT LN SE
TWILIGHT LN
MOONLIGHT LN
HEATHER GLEN LOOP
HEATHER GLEN DR
CYPRESS GARDENS BLVD SE
LAKE RUBY DR N
RUBY LAKE DR
RUBY LAKE LOOP
RUBY LAKE PL
RUBY LAKE LN
BENT GRASS LOOP
BENT GRASS DR
LAKE BESS RD
CAREFREE RV RESORT
GOLF TER
LAKE SHORE DR
GOLF AIRE BLVD
CARLTON ARMS BLVD
JAMESTOWN DR
THOMASVILLE DR
KLIBER DR
COLONIAL DR
OXFORD DR
GOLF VIEW DR
2ND ST
3RD ST
4TH ST
WILLIAMSBURG D
HWY 27
WAVERLY RD
121'
121'
121'
AE
X5
POLK COUNTY
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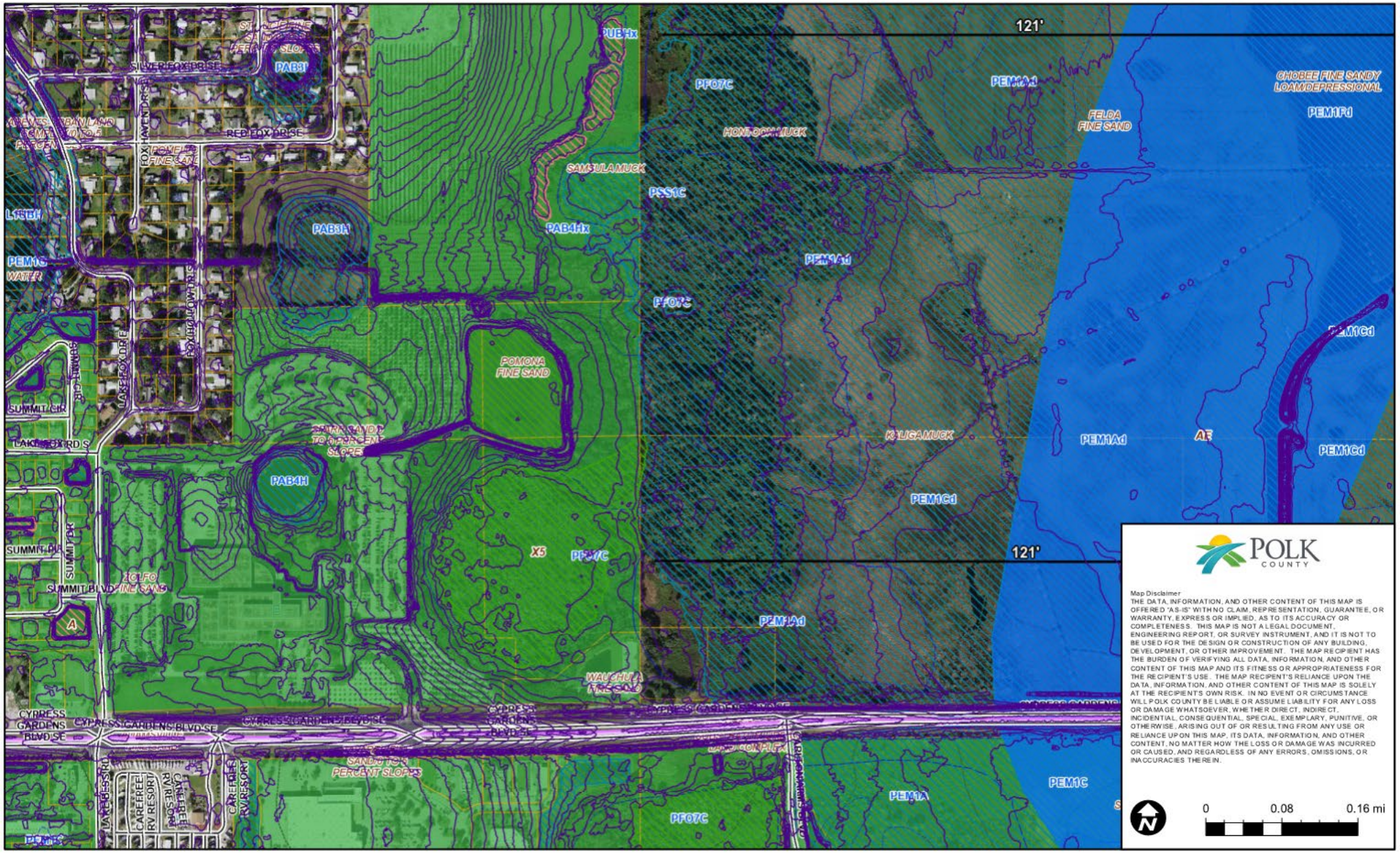
121'
PUBHx
PAB3H
PFO7C
PEM1Ad
CHOBEE FINE SANDY LOAM/DEPRESSIONAL
PEM1Fd
FELDA FINE SAND
HONTOON MUCK
SAMSULA MUCK
PSS1C
PAB4Hx
PAB3H
PEM1Ad
PEM1C
WATER
PFO7C
PEM1Cd
POMONA FINE SAND
SUMMIT CIR
LAKE FOX RD S
PAB4H
KALIGA MUCK
PEM1Ad
AE
PEM1Cd
X5
PFO7C
121'
SUMMIT DR
SUMMIT BLVD
TOLFO FINE SAND
PEM1Ad
WAUCHULA FINE SAND
CYPRESS GARDENS BLVD SE
SANDY FLOOR PERCENT SLOPES
PEM1C
PEM1A
PFO7C
POLK COUNTY
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Summary Results for Sapphire Necklace Selected Sites

Initial Sites	2019 Site Number	Site Area (ac)	Identified Open Water/ NWI Wetland Area (ac)	Muck Soils Area (ac)	100-Year Floodplain Area (ac)	Estimated Water Storage Depth (ft)	Potential Surface Water Storage (ac-ft)	Potential Wetland Restoration/ Creation (ac)	Potential Wetland Enhancement (ac)	Sum Wetland Area (ac)	Potential UFA Recharge with Wells (MGD)	Adjacent to Major Drainage Feature (1)	Provides Connectivity (1)	Direct R/W Access (2)	Adjacent to Park (3)	Adjacent to Lake (3)	Average Site Ground Elev. (ft NAVD88)	100 Yr BFE (ft NAVD88	100 YR BFE – Average Site Ground Elev. (ft NAVD88)	Land Cover
# 1	27, 35, +	372	188	354	300	1.1	419	0	354	354	2.5	X	X	X	X		122.5	124	1.5	P, F/S, E
# 2	36	233	77	123	233	2.3	435	98	123	221	2.5	X		X			120	123	3	P, E, O
# 3	54, -	650	383	159	640	2.3	1,273	235	383	618	5	X	X	X			118	121	3	P, F/S, E, O
# 4	113A, +	512	261	217	325	1.5	768	225	261	486	5		X	X			117	119	2	F/S, E
# 5 (Mann)	59, 64, +	311	148	224	264	1.5	467	71	224	295	2.5	X	X	X			122	124	2	P, F/S, E, O
Kerr	14, +	142	132	125	140	1.5	213	3	132	135	2.5		X	X	X	X	128	130	2	F/S
Additional Sites																				
126	126	114	42	44	55	0.8	86	64	44	108	1		X	X			117	118	1	F/S
1 + 151	1 + 151	80	52	72	15	2.3	180	4	72	76	1		X	X		X	130	133	3	F/S
133, +	133, +	105	48	51	79	2.6	276	49	51	100	1	X	X				113.5	117	3.5	E, O
153A, +	153A, +	143	96	65	100	0.8	107	40	96	136	1.5		X	X			118	119	1	F/S
153B, +	153B, +	276	96	51	193	0.8	207	166	96	262	2.5	X	X			X	118	119	1	F/S, O
153C, +	153C, +	225	15	68	191	1.5	338	146	68	214	2.5	X		X			118	120	2	E, O
153D, +	153D, +	160	76	68	144	1.1	180	76	76	152	1.5	X	X				117	118.5	1.5	E, O
153E, +	153E, +	124	43	15	105	1.5	186	75	43	118	1	X	X				116	118	2	E, O
17, 20, +	17, 20, +	336	215	186	320	2.3	756	104	215	319	2.5	X	X	X		X	121	124	3	F/S, E
1A + 1B (5 sites)	27 A	216	48	145	195	3.0	648	60	145	205	2	X	X	X			120	124	4	F/S, E
33, +	33, +	278	28	250	245	2.3	626	14	250	264	2.5	X		X		X	121	124	3	E
42, 43, +	42, 43, +	225	150	180	185	1.1	253	34	180	214	2	X	X	X		X	124.5	126	1.5	E, O
4C (5 sites)	113 B	212	57	60	142	1.1	239	141	60	201	2.0		X	X			117.5	119	1.5	F/S, O
4D (5 sites)	133	64	31	31	45	1.5	96	30	31	61	1	X	X	X			114	116	2	F/S, E
56, 67	56, 67	919	484	351	890	3.8	3,446	389	484	873	7.5	X	X	X	X	X	116	121	5	E, O
New 1	na	257	154	160	240	1.5	386	84	160	244	2.5		X	X		X	128	130	2	F/S
New 2	na	63	44	16	58	1.5	95	16	44	60	1		X	X		X	125	127	2	F/S
New 3	na	364	173	252	350	1.5	546	94	252	346	2.5	X	X	X			122.5	124.5	2	F/S, E, O

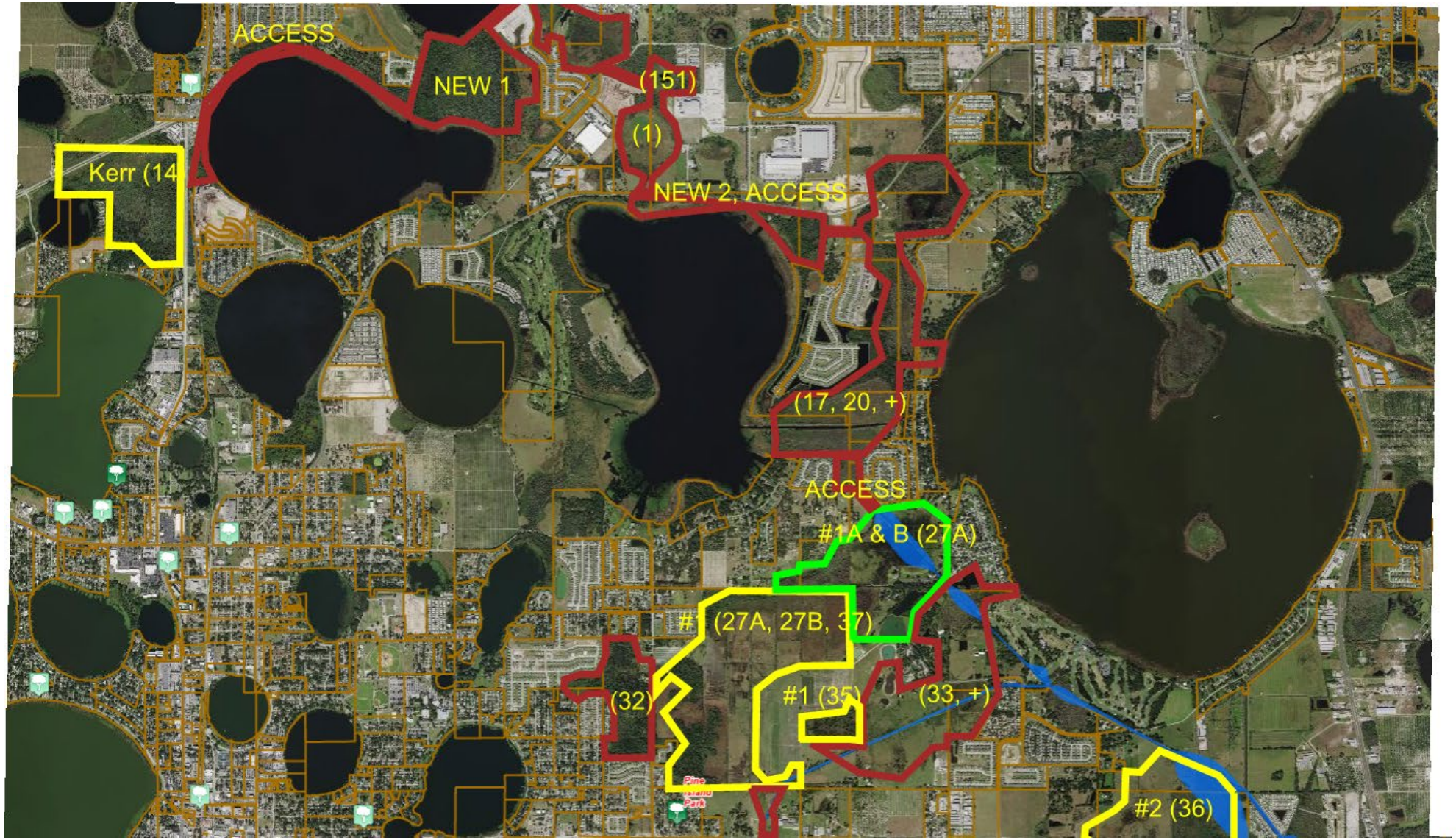
Estimated Conceptual Costs and Cost Effectiveness for Sapphire Necklace Selected Sites

All Sites	Chastain Skillman 2019 Site Number	Site Area (ac)	Estimated Land Cost ($)	Hydrologic/ Wetland Restoration/ Creation Capital Cost ($)	Hydrologic/ Wetland Enhancement Capital Cost ($)	Recharge Well Capital Cost ($)	Estimated Total Capital Cost ($)	Estimated Total Capital Cost per ac-ft water storage ($)	Estimated Total Capital Cost per acre wetland ($)	Estimated Total Capital Cost per MGD Recharge ($)	Adjacent to Major Drainage Feature (1)	Provides Connectivity (1)	Direct R/W Access (2)	Adjacent to Park (3)	Adjacent to Lake (3)
56, 67	56, 67	919	25,732,000	10,115,300	7,744,000	7,500,000	**25,359,300**	7,359	29,047	3,381,240	X	X	X	X	X
New 5		234	6,552,000	2,841,800	1,808,000	2,000,000	**6,649,800**	7,578	29,914	3,324,900	X	X	X	X	
1A + 1B (5 sites)	27 A	216	6,048,000	1,565,200	2,320,000	2,000,000	**5,885,200**	9,082	28,680	2,942,600	X	X	X		
New 6		463	12,964,000	2,674,100	5,392,000	5,000,000	**13,066,100**	9,407	29,706	2,613,220	X	X	X	X	X
33, +	33, +	278	7,784,000	366,600	4,000,000	2,500,000	**6,866,600**	10,978	26,000	2,746,640	X		X		X
133, +	133, +	105	2,940,000	1,267,500	816,000	1,000,000	**3,083,500**	11,187	30,912	3,083,500	X	X			
17, 20, +	17, 20, +	336	9,408,000	2,709,200	3,440,000	2,500,000	**8,649,200**	11,441	27,096	3,459,680	X	X	X		X
1 + 151	1 + 151	80	2,240,000	104,000	1,152,000	1,000,000	**2,256,000**	12,533	29,684	2,256,000		X	X		X
# 3	54, -	650	18,200,000	6,097,000	6,128,000	5,000,000	**17,225,000**	13,531	27,895	3,445,000	X	X	X		
# 2	36	233	6,524,000	2,557,100	1,968,000	2,500,000	**7,025,100**	16,150	31,738	2,810,040	X		X		
New 3		364	10,192,000	2,438,800	4,032,000	2,500,000	**8,970,800**	16,430	25,942	3,588,320	X	X	X		
New 7		207	5,796,000	276,900	2,976,000	2,000,000	**5,252,900**	16,918	26,712	2,626,450	X	X	X	X	
# 5 (Mann)	59, 64, +	311	8,708,000	1,857,700	3,584,000	2,500,000	**7,941,700**	17,006	26,880	3,176,680	X	X	X		
New 1		257	7,196,000	2,187,900	2,560,000	2,500,000	**7,247,900**	18,801	29,686	2,899,160		X	X		X
# 1	27, 35, -, +	372	10,416,000	0	5,664,000	2,500,000	**8,164,000**	19,508	23,062	3,265,600	X	X	X	X	
153E, +	153E, +	124	3,472,000	1,944,800	688,000	1,000,000	**3,632,800**	19,531	30,839	3,632,800	X	X			
# 4	113A, +	512	14,336,000	5,860,400	4,176,000	5,000,000	**15,036,400**	19,579	30,914	3,007,280		X	X		
153C, +	153C, +	225	6,300,000	3,789,500	1,088,000	2,500,000	**7,377,500**	21,859	34,515	2,951,000	X		X		
Kerr	14, +	142	3,976,000	75,400	2,112,000	2,500,000	**4,687,400**	22,007	34,747	1,874,960		X	X	X	X
New 2		63	1,764,000	412,100	704,000	1,000,000	**2,116,100**	22,393	35,357	2,116,100		X	X		X
42, 43, +	42, 43, +	225	6,300,000	877,500	2,880,000	2,000,000	**5,757,500**	22,746	26,936	2,878,750	X	X	X		X
4D (5 sites)	133	64	1,792,000	774,800	496,000	1,000,000	**2,270,800**	23,654	37,349	2,270,800	X	X	X		
153D, +	153D, +	160	4,480,000	1,976,000	1,216,000	1,500,000	**4,692,000**	26,067	30,868	3,128,000	X	X			
New 4		223	6,244,000	3,038,100	1,520,000	2,000,000	**6,558,100**	26,141	30,956	3,279,050		X	X		X
4C (5 sites)	113 B	212	5,936,000	3,676,400	960,000	2,000,000	**6,636,400**	27,826	32,951	3,318,200		X	X		
153A, +	153A, +	143	4,004,000	1,036,100	1,536,000	1,500,000	**4,072,100**	37,968	29,975	2,714,733		X	X		
126	126	114	3,192,000	1,671,800	704,000	1,000,000	**3,375,800**	39,483	31,171	3,375,800		X	X		
153B, +	153B, +	276	7,728,000	4,321,200	1,536,000	2,500,000	**8,357,200**	40,373	31,873	3,342,880	X	X			X

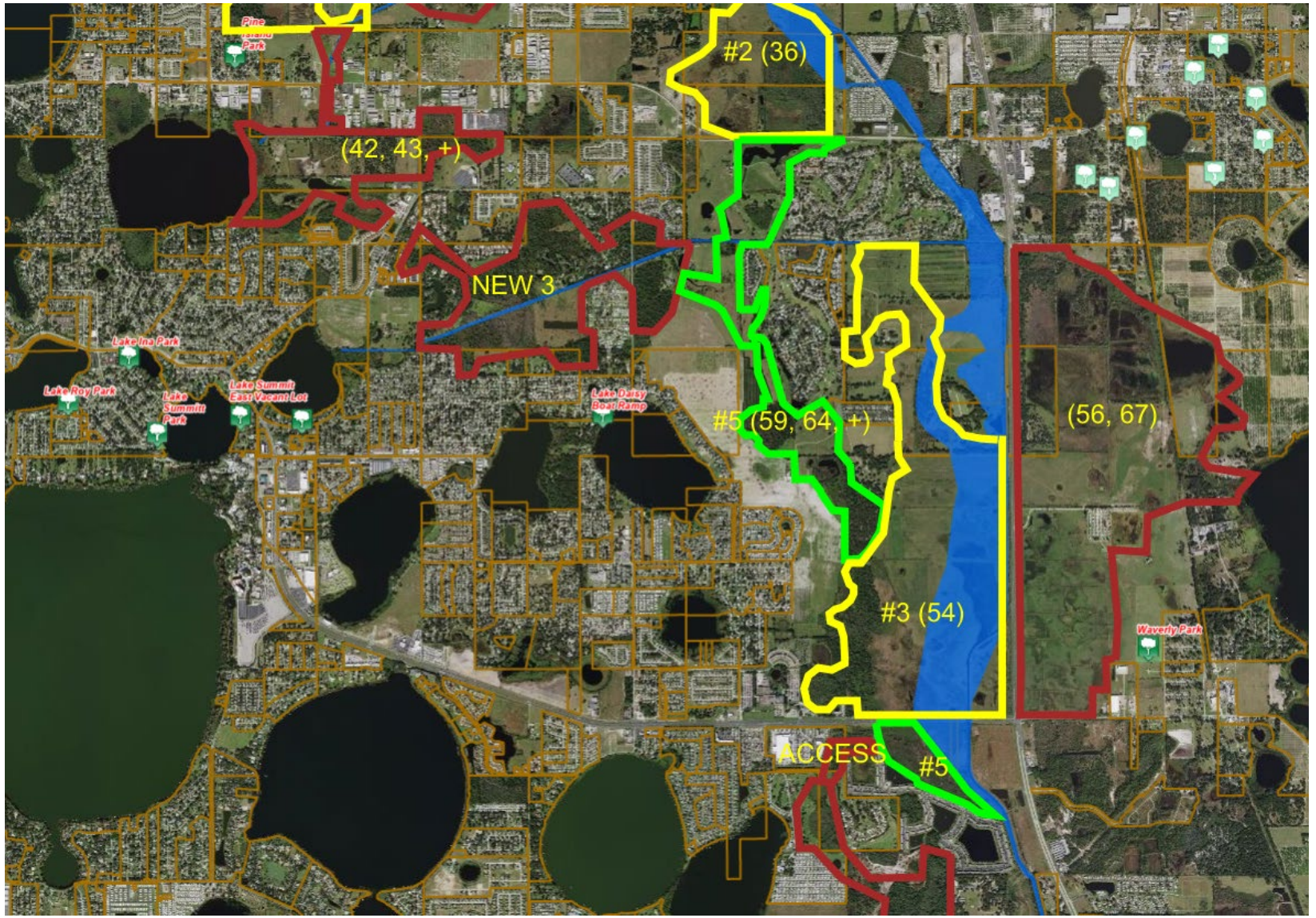
Potential Priority Grouping for Sapphire Necklace Selected Sites

Priority Group	All Sites	Chastain Skillman 2019 Site Number	Site Area (ac)	Sum Wetlands (ac)	Potential UFA Recharge with Wells (MGD)	Estimated Land Cost ($)	Estimated Total Capital Cost ($)	Estimated Total Capital Cost per ac-ft water storage ($)	Estimated Total Capital Cost per acre wetland ($)	Estimated Total Capital Cost per MGD Recharge ($)	Adjacent to Major Drainage Feature (1) X = yes	Provides Connectivity (1)	Direct R/W Access (2)	Adjacent to Park (3)	Adjacent to Lake (3)
1	**56, 67**	**56, 67**	919	873	7.5	25,732,000	**25,359,300**	7,359	29,047	3,381,240	X	X	X	X	X
1	**1A + 1B (5 sites)**	**27 A**	216	205	2	6,048,000	**5,885,200**	9,082	28,680	2,942,600	X	X	X		
1	**New 3**		364	346	2.5	10,192,000	**8,970,800**	16,430	25,942	3,588,320	X	X	X		
1	**# 5 (Mann)**	**59, 64, +**	311	295	2.5	8,708,000	**7,941,700**	17,006	26,880	3,176,680	X	X	X		
1	**# 1**	**27, 35, -, +**	372	354	2.5	10,416,000	**8,164,000**	19,508	23,062	3,265,600	X	X	X	X	
1	**42, 43, +**	**42, 43, +**	225	214	2	6,300,000	**5,757,500**	22,746	26,936	2,878,750	X	X	X		X
1	**# 3**	**54, -**	650	618	5	18,200,000	**17,225,000**	13,531	27,895	3,445,000	X	X	X		
2	**17, 20, +**	**17, 20, +**	336	319	2.5	9,408,000	**8,649,200**	11,441	27,096	3,459,680	X	X	X		X
2	**1 + 151**	**1 + 151**	80	76	1	2,240,000	**2,256,000**	12,533	29,684	2,256,000		X	X		X
2	**# 2**	**36**	233	221	2.5	6,524,000	**7,025,100**	16,150	31,738	2,810,040	X		X		
2	**New 1**		257	244	2.5	7,196,000	**7,247,900**	18,801	29,686	2,899,160		X	X		X
2	**Kerr**	**14, +**	142	135	2.5	3,976,000	**4,687,400**	22,007	34,747	1,874,960		X	X	X	X
2	**New 2**		63	60	1	1,764,000	**2,116,100**	22,393	35,357	2,116,100		X	X		X
3	**New 5**		234	222	2	6,552,000	**6,649,800**	7,578	29,914	3,324,900	X	X	X	X	
3	**New 6**		463	440	5	12,964,000	**13,066,100**	9,407	29,706	2,613,220	X	X	X	X	X
3	**New 7**		207	197	2	5,796,000	**5,252,900**	16,918	26,712	2,626,450	X	X	X	X	X
3	**126**	**126**	114	108	1	3,192,000	**3,375,800**	39,483	31,171	3,375,800		X	X		
3	**103**	**103**	32	Provides Connectivity		896,000						X			
3	**129**	**129**	59	Provides Connectivity		1,652,000						X			
3	**128**	**128**	66	Provides Connectivity		1,848,000						X			
3	**118**	**118**	91	Provides Connectivity		2,548,000						X			
3	**109**	**109**	23	Provides Connectivity		644,000						X			
4	**133, +**	**133, +**	105	100	1	2,940,000	**3,083,500**	11,187	30,912	3,083,500	X	X			
4	**153E, +**	**153E, +**	124	118	1	3,472,000	**3,632,800**	19,531	30,839	3,632,800	X	X			
4	**# 4**	**113A, +**	512	486	5	14,336,000	**15,036,400**	19,579	30,914	3,007,280		X	X		
4	**4D (5 sites)**	**133**	64	61	1	1,792,000	**2,270,800**	23,654	37,349	2,270,800	X	X	X		
4	**153D, +**	**153D, +**	160	152	1.5	4,480,000	**4,692,000**	26,067	30,868	3,128,000	X	X			
4	**New 4**		223	212	2	6,244,000	**6,558,100**	26,141	30,956	3,279,050		X	X		X
4	**4C (5 sites)**	**113 B**	212	201	2.0	5,936,000	**6,636,400**	27,826	32,951	3,318,200		X	X		
4	**153A, +**	**153A, +**	143	136	1.5	4,004,000	**4,072,100**	37,968	29,975	2,714,733		X	X		
4	**153B, +**	**153B, +**	276	262	2.5	7,728,000	**8,357,200**	40,373	31,873	3,342,880	X	X			X

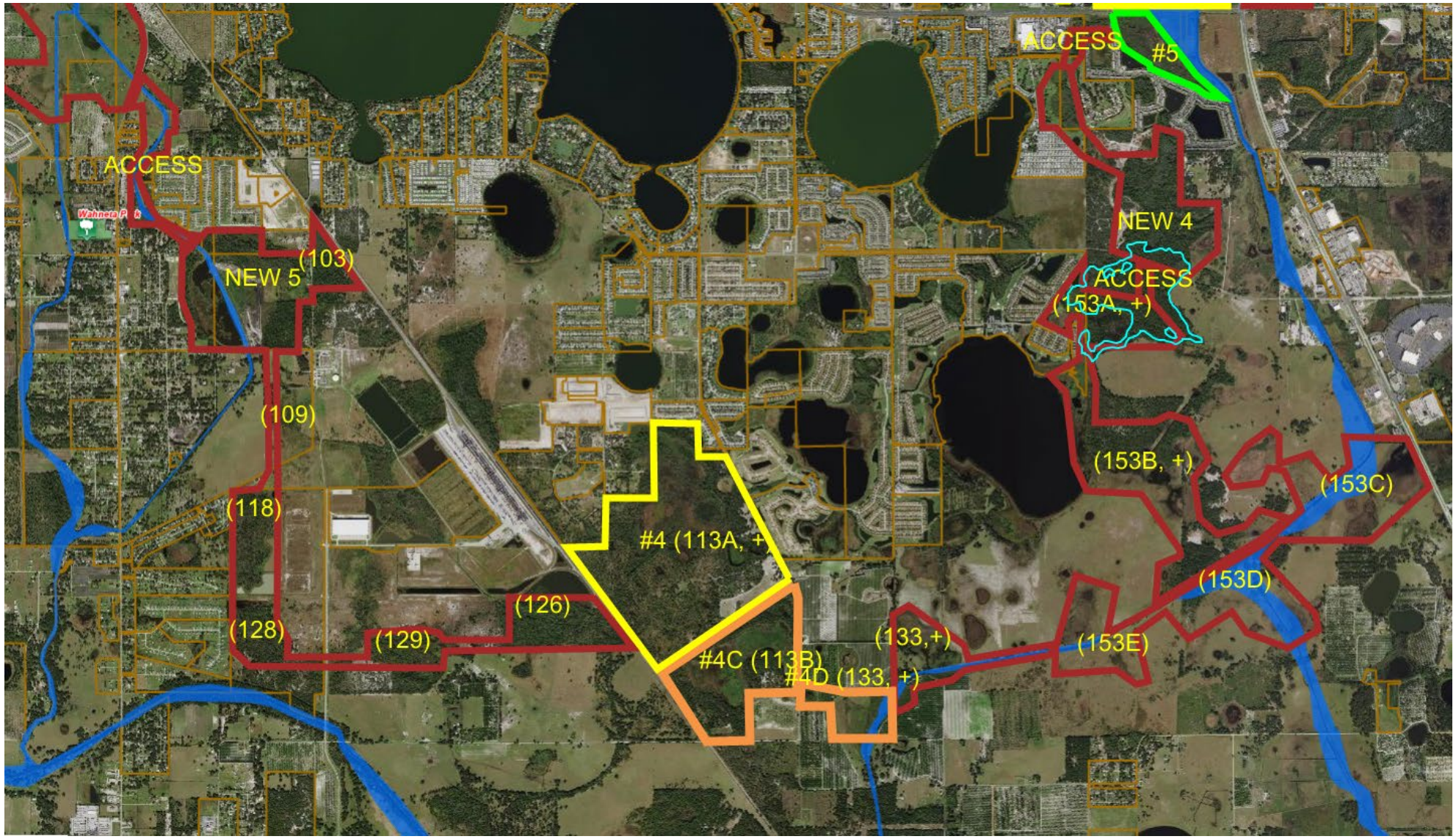
North Sapphire Necklace



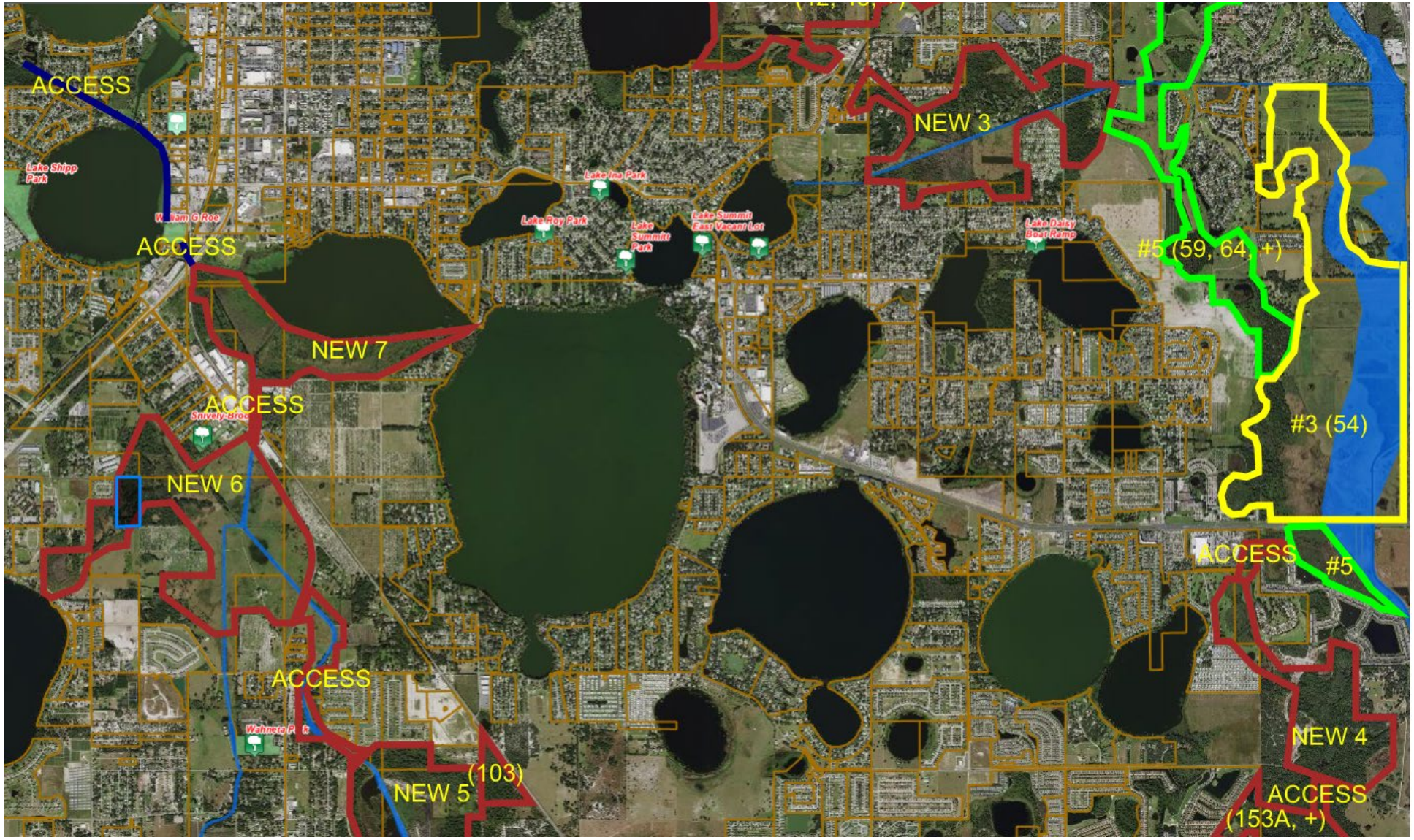
Northeast Sapphire Necklace



South Sapphire Necklace



Southeast Sapphire Necklace



Phase 3 Sapphire Necklace Draft Scope

- Advance select project sites, assess conservation easement area vs. developable property
- Estimate TN, TP, and TSS load reductions
- Refine cost effectiveness metrics
- Create 2-page summaries, concept designs, and color renderings
- Pursue public and private sector grants/funding/financing opportunities
- Develop project delivery strategy including alternative delivery
- Support conservation easement/property appraisal and acquisition
- Continue to develop interconnected trail/recreation/educational amenities, necessary easements and improvements

Questions

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