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OSTDS Remediation Feasibility Analysis Report

Hernando County Utilities Department | June 2020

OSTDS Remediation Feasibility Analysis Report

Prepared for

Hernando County Utilities Department

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and

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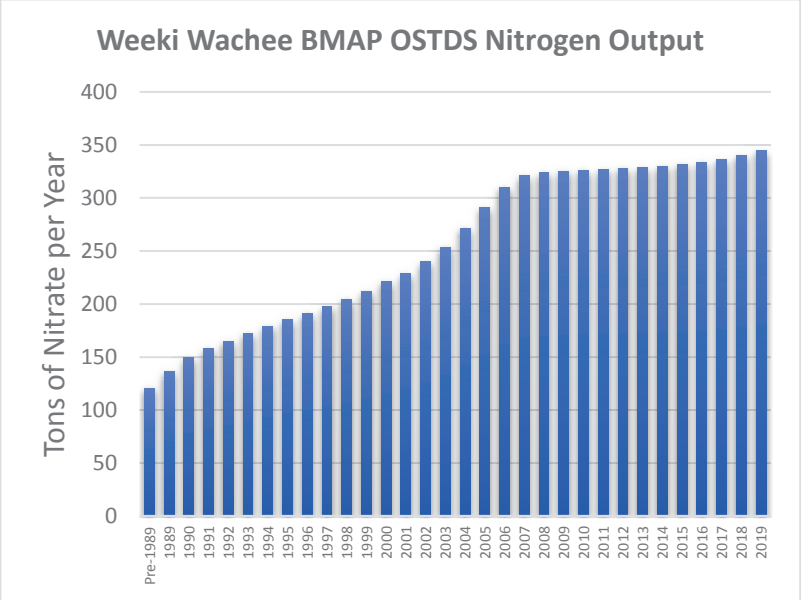
INTRODUCTION

In 2016, the Florida Legislature identified 33 Outstanding Florida Springs (OFSs) in the Florida Springs and Aquifer Protection Act. The Act requires additional protections to ensure the springs conservation and restoration for future generations. These protections are included in the Basin Management Action Plans (BMAPs), which were developed in response to the Total Maximum Daily Load (TMDL) requirements for each spring group. In 2018, the Florida Department of Environmental Protection (FDEP) approved the Weeki Wachee Spring BMAP and Homosassa and Chassahowitzka Group BMAP. These documents provide a road map to address the nutrient reduction plan for protection of these natural treasures.

Under the Florida Springs and Aquifer Protection Act, FDEP is required to engage with stakeholders and adopt septic system remediation plans for OFSs where the nutrients from septic tanks were found to be greater than 20 percent of the contributing sources.

Hernando County is one of the stakeholders as it encompasses portions of the Weeki Wachee Preserve and the Chassahowitzka National Wildlife Refuge, which have springs groups with the OFS designation. Additionally, based on FDEP's Nitrogen Source Inventory and Loading Tool (NSILT) modeling conducted for the 2018 BMAP, 30 percent of all nitrates in the Weeki Wachee BMAP area are attributable to septic tanks or onsite sewage treatment and disposal systems (OSTDS) and 16 percent of all nitrates in the Homosassa/Chassahowitzka BMAP area are attributable to OSTDSs.



Additionally, the water quality in the Weeki Wachee Group, the Homosassa/Chassahowitzka Group, and the Upper Floridan Aquifer (UFA) has a significant impact on the community. The UFA provides almost all the area's drinking water. The springs and associated rivers provide recreational and aesthetic benefits to residents and visitors, economic opportunities, and essential habitat for fish and other wildlife. This Report is part of an effort to improve and protect this crucial natural resource, which impacts ecosystems, fisheries, marine and wildlife habitats, wetlands, tourism, home values, drinking-water quality, and overall quality of life.

To accelerate the development of the information essential for implementing an effective plan, FDEP provided the County with grant funding to perform a wastewater treatment feasibility analysis and produce a report documenting the analysis.

This Feasibility Analysis Report (FAR) documents the County-wide analysis including the following elements:

- An inventory of Hernando County OSTDSs
- The wastewater infrastructure needed to meet the BMAP requirements
- The OSTDS within the Priority Focus Areas (PFA) or BMAP that require remediation
- A cost comparison of alternative strategies to achieve remediation
- The proposed project service areas with recommendation of alternative and timeline
- The records of public meeting(s) to explain proposed projects
- Discuss the decision-making rationale for the recommended alternative and public acceptance for sewering projects.
- An estimate of project capital costs, operations and maintenance costs, and repair and replacement costs
- The potential financing options for recommended projects
- The environmental and economic impacts and benefits of the proposed projects
- The options for financial assistance to property owners required to install new system or connect to centralized sewer
- The sites needed for recommended projects
- A list of agreements and contracts need to implement selected projects

1 BACKGROUND

The Weeki Wachee, Homosassa, and Chassahowitzka Springs Groups are all first-magnitude OFSs that FDEP has assessed as impaired for Nitrate-N. The BMAP areas share a boundary that cuts across Hernando County, with the Weeki Wachee BMAP area to the south and the Homosassa/Chassahowitzka BMAP area to the north. Both BMAPs lie wholly within the Southwest Florida Water Management District (SWFWMD).

In 2014, FDEP adopted nutrient TMDLs for the Weeki Wachee Spring Group, the Magnolia-Aripeka Springs Group, the Wilderness-Mud-Salt Spring Group, the Jenkins Creek Spring, and the Weeki Wachee River. FDEP also adopted the Homosassa and Chassahowitzka Springs Group and Chassahowitzka River TMDLs. Each of these waters were determined to be impaired for nutrients based on consistent Nitrate-N concentrations over 0.6 milligrams per liter (mg/L) and evidence of an imbalance of flora and fauna caused by algal smothering.

Based on the TMDL, FDEP developed and adopted one BMAP for the Weeki Wachee Group, the Magnolia-Aripeka Springs Group, and the Weeki Wachee River, and another BMAP for the Homosassa and Chassahowitzka Springs Group in June 2018.

Each BMAP includes the designation of PFAs, areas of the basin identified as most vulnerable to pollutant loading. Figure 1 presents the locations of the springs within the Weeki Wachee and the Homosassa/Chassahowitzka BMAPS as well as the associated BMAP and PFA boundaries.

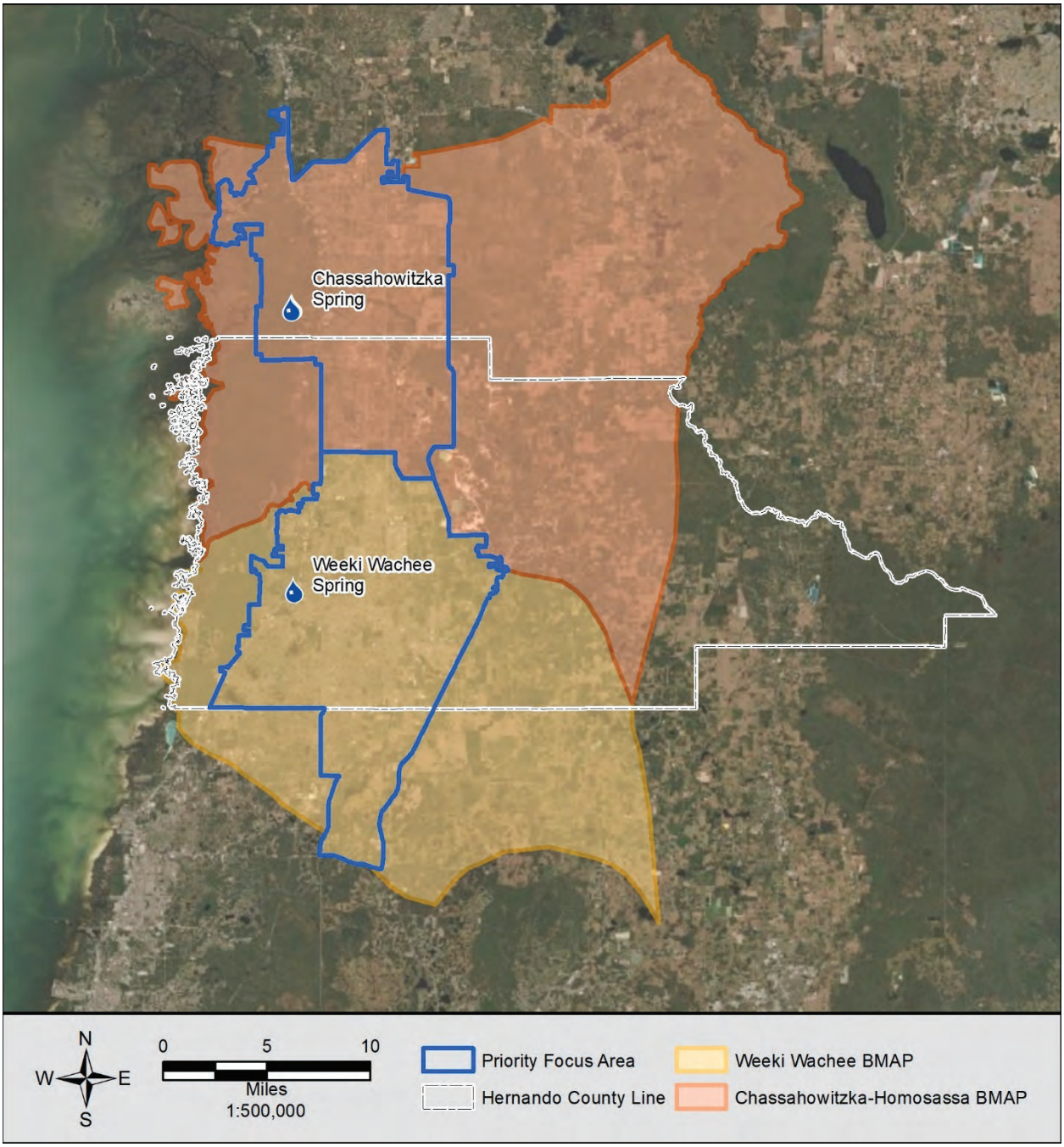
The Weeki Wachee and Homosassa/Chassahowitzka Groups' BMAP areas extend outside Hernando County. The portion of the BMAPs within Hernando County include 95 percent of the residential and commercial population of Hernando County – approximately 145,200 people in the Weeki Wachee BMAP area and approximately 27,200 people in the Homosassa/Chassahowitzka Group BMAP area.

Within the Homosassa/Chassahowitzka PFA, central sewer collection is provided to a small service area by the Hernando County Utilities Department (HCUD) with the remaining developed parcels served by septic systems. Approximately 1,618 septic systems are within the PFA.

In the Weeki Wachee PFA, HCUD provides central sewer collection and treatment to approximately 40 percent of residents and businesses with the remaining area served by approximately 35,912 septic systems.

The Weeki Wachee BMAP set out a target to reduce nitrate at the spring vents in an effort to fulfill the TMDL. The total load reduction to meet the TMDLs is a total yearly reduction of 195,200 pounds of Total Nitrogen (Total-N). To avoid additional damage to the springs created by the dense use of septic systems, FDEP has provided grant funding to the County to undertake the FAR evaluation to develop options for removing septic systems, providing additional centralized sewer collection with centralized treatment, and identifying enhanced on-site septic treatment options.

Figure 1 BMAP and PFA Areas



2 EXISTING SEPTIC SYSTEM INVENTORY

This section details the inventory of Hernando County OSTDS as well as the development of OSTDS remediation Study Districts and the nutrient load reduction estimates for each district.

2.1 HERNANDO COUNTY OSTDS INVENTORY

Hernando County consists of over 105,000 individual parcels, of which 71 percent are developed and require wastewater treatment and disposal. Last updated in August 2018, the Florida Department of Health's (FDOH) OSTDS Inventory geographic information system (GIS) database, the Florida Water Management Inventory (FLWMI), reported approximately 46,090 known, likely, or somewhat-likely septic systems within Hernando County.

Of those septic systems, 36,749 are in the Hernando County section of the Weeki Wachee BMAP area and approximately 36,743 of which are in unincorporated Hernando County. In the Weeki Wachee PFA, almost 98 percent of the 35,912 septic systems are within the unincorporated portion of the County. The Hernando County section of the Homosassa/ Chassahowitzka BMAP area has 6,270 septic systems, approximately 6,230 of which are in unincorporated Hernando County. Figure 2 presents graphic imagery of the locations of the OSTDS within the Weeki Wachee and the Homosassa/Chassahowitzka BMAPs with the PFA boundaries. See Appendix A for the full-size figure.

Figure 3 presents the Hernando County septic systems constructed from 1989 through 2019. The OSTDS shown below account for 23,856 or 52 percent of the 46,090 known septic tanks. The graph is based on a detailed analysis of the available FDOH OSTDS permits, Hernando County Property Appraiser actual-year built data, and Hernando County OSTDS permitting data.

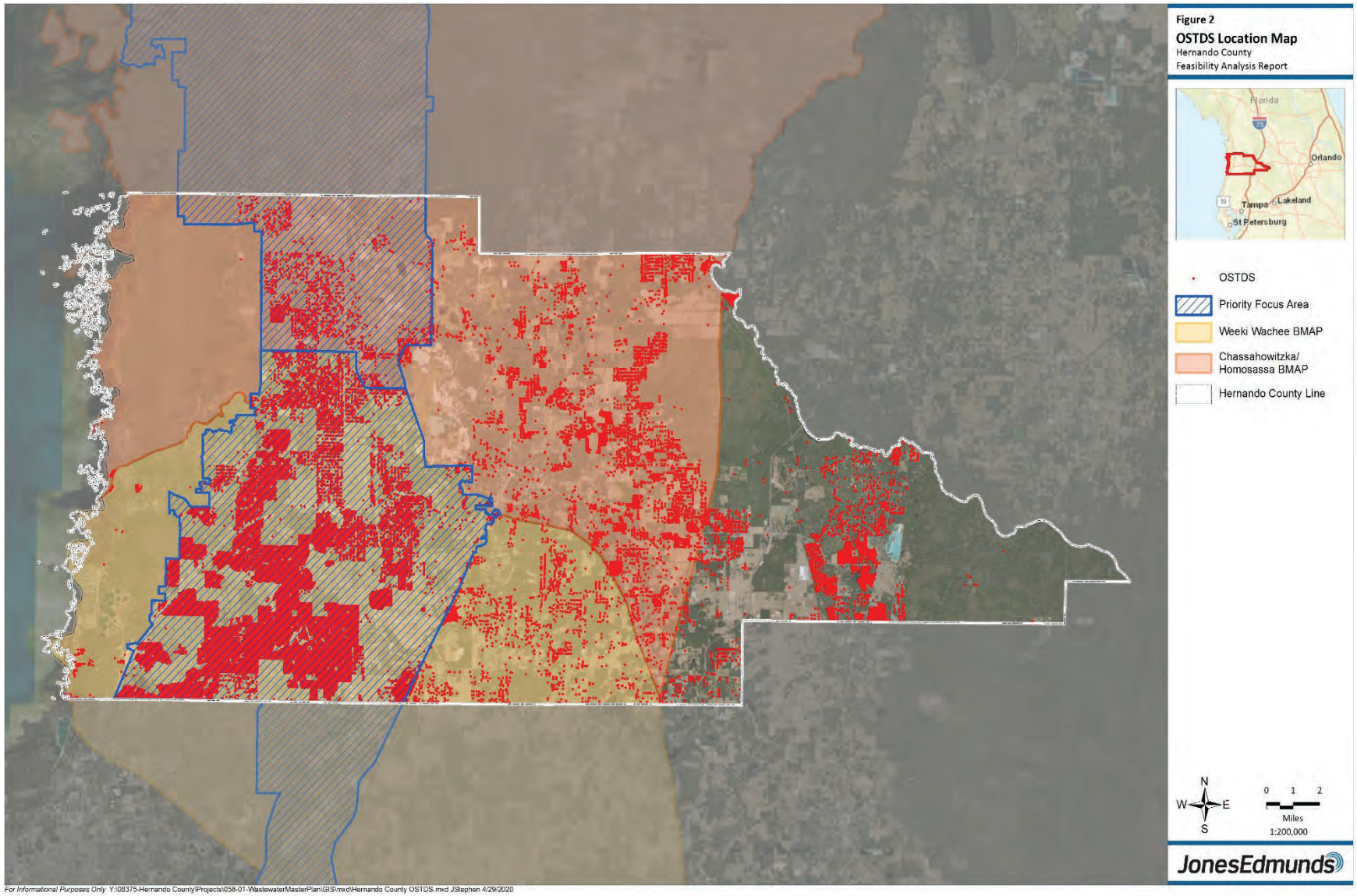


Figure 2
OSTDS Location Map
Hernando County
Feasibility Analysis Report
Florida
Orlando
Tampa
Lakeland
St Petersburg
OSTDS
Priority Focus Area
Weeki Wachee BMAP
Chassahowitzka/
Homosassa BMAP
Hernando County Line
N
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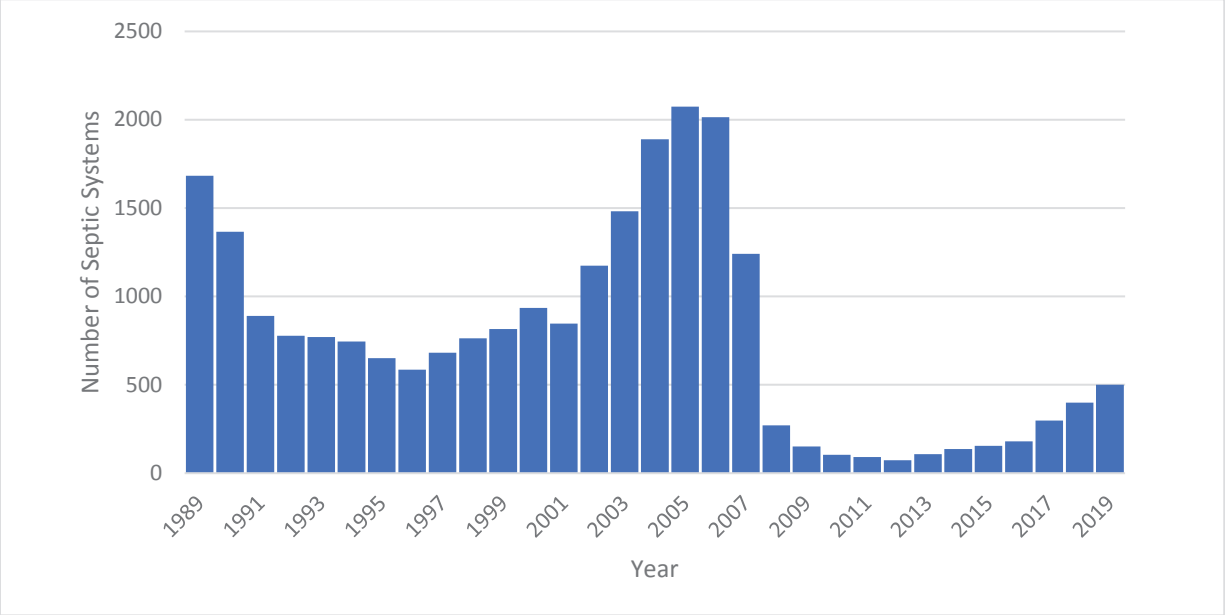
Figure 3 Hernando County Septic System Construction, 1989–2019



Typically, septic tanks constructed from steel have a 20- to 30-year useful life. Septic tanks constructed from concrete or plastic may last 30 to 40 years. On average, FDOH data appear to indicate an overall 20- to 30-year lifespan for septic tanks, with differences stemming from the amount of use, type of use, level of maintenance, and soil and groundwater characteristics.

Additionally, OSTDSs built before 1983 did not have to meet Florida's current requirements for groundwater separation and surface water setbacks and therefore can be thought of as generally having less reliable Nitrogen removal compared to more contemporary systems. Table 1 presents the OSTDS data with in the BMAPs, PFAs, and the County by parcel size (less than or greater than or equal to 1 acre) and by built date (pre- or post-1983) data. Most of the septic tanks (27,704) on less than 1 acre were built after 1983 as shown in Table 1. The average date built was used as an estimate for OSTDS install date.

Table 1 OSTDS of Hernando County

Area	OSTDS < 1 Acre		OSTDS ≥ 1 Acre	
	Built prior to 1983	Built after 1983	Built prior to 1983	Built after 1983
Weeki Wachee PFA	5,977	25,597	941	3,407
Weeki Wachee BMAP	6,173	25,713	1,275	4,213
Homosassa/Chassahowitzka PFA	15	709	166	728
Homosassa/Chassahowitzka BMAP	582	1,192	1122	2,751
County	7,714	27,704	2,866	7,973

2.2 Study Districts

The County was divided into Study Districts with the divisions based on geographic features. Features considered include areas with existing central sewer, large undeveloped areas,

roadways, existing subdivisions, and PFA boundaries. The 2016 Septic to Sewer Conversion Study commissioned by Hernando County used study areas for a portion of the County within the BMAP area. The methodology for creating districts in that Study used an approach to the planning analysis to define projects that included the following:

- Identifying clusters of homes that may comprise one or more subdivisions in a central collection system.
- Determining the different methods to convert from septic to sewer with identifiable advantages and disadvantages from an initial investment and long-term maintenance cost standpoint, i.e. community systems, or individual systems.
- Planning-level estimating each district considering the direct and indirect costs associated with design and construction of collection systems and the expansion of treatment plants as needed.

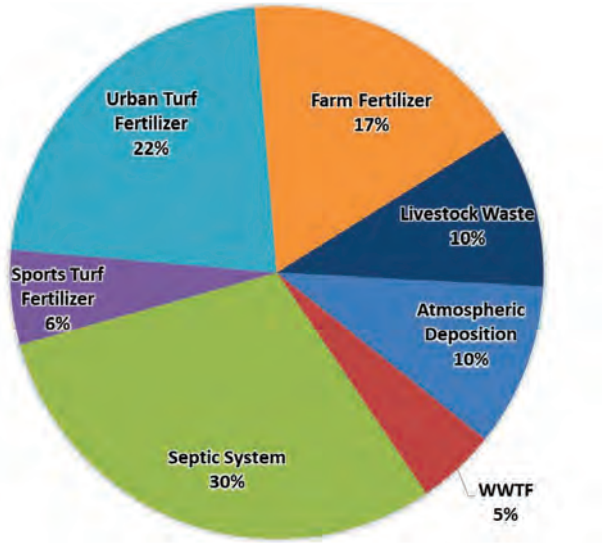
The current analysis encompasses the entire of the County in the interest of creating a county wastewater master plan. Figure 4 presents the Study District boundaries along with the numbered (lettered) identifier. A letter identifier was used in the 2016 Study. See Appendix A for the full-size figure.

Study Districts were each evaluated for specific OSTDS remediation alternatives based on OSTDS density, land use type, closeness to existing infrastructure, development potential, and stakeholder input. FDEP's (NSILT) was used to perform a NSILT analysis for each Study District within the BMAP areas to determine the estimated Nitrogen loading measured in lb/yr within each district boundary. Estimated Nitrogen load reduction through OSTDS remediation was used to prioritize projects for future planning.

2.3 NSILT CALCULATIONS

The NSILT model quantifies all sources of Nitrogen entering an impaired body of water with an estimate of the number of pounds attributable to each source including the following:

- Septic Systems
- Urban Turfgrass Fertilizers
- Farm Fertilizers
- Livestock Waste
- Atmospheric Disposition
- Sports Turfgrass Fertilizers
- WWTFs

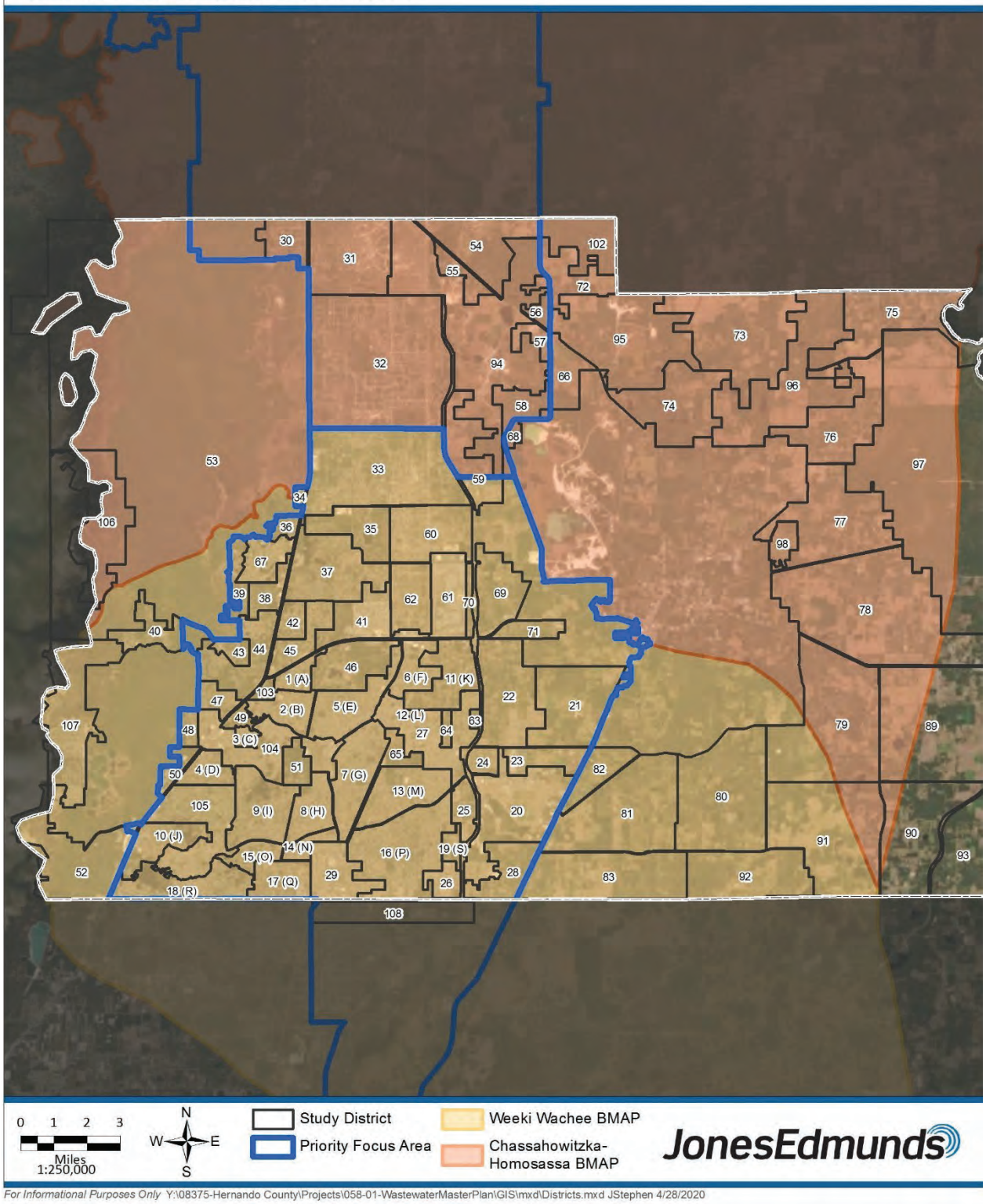


To calculate the Nitrogen sources, the NSILT model uses ArcGIS and spreadsheets to estimate the various sources of Nitrogen spatially. The tool not only quantifies the initial pounds of source Nitrogen as in the 2016 conversion study, but it also updates those values as the Total-N is transported and transformed (from its various forms) from the Earth's surface to the UFA. The UFA then transfers this quantity of Nitrogen to the impaired water bodies, in this case the Weeki Wachee Springs Group and the Homosassa and Chassahowitzka Springs Groups.

Figure 4

Study District Map

Hernando County Feasibility Analysis Report



Based on the FDEP's modeling conducted for the 2018 BMAP, 30 percent of all nitrates in the Weeki Wachee BMAP area are attributable to OSTDSs and 16 percent of all nitrates in the Homosassa/Chassahowitzka BMAP area are attributable to OSTDSs.

For the FAR, available data from the US Census Bureau, the Hernando County Property Appraiser, HCUD, SWFWMD, and FDEP were used to develop detailed wastewater flow estimates, and Nitrogen discharges from OSTDSs. Nitrogen loads from OSTDSs within the BMAPs and PFAs were calculated with the following NSILT formula:

$$\boldsymbol{L = N * P * I * (1 - D) * R}$$

where:

- L is the Total-N load reaching the UFA.
- N is the number of OSTDSs in the springshed.
- P is the number of persons per household (PPH).
- I is the per capita Nitrogen load.
- D is the soil attenuation rate.
- R is the Floridan aquifer recharge factor.

The number of OSTDSs were obtained from the FDOH Florida Water Management Inventory (FLWMI) database for Hernando County.

The PPH was census data reduced to account for residents with access to a facility connected to a sewer system or non-residential septic system during their weekly routine (i.e., work, school, etc.). In FDEP NSILT analyses, common practice is to discount the residential Nitrogen loading estimate to account for this difference. The effective household population yielded an adjusted P of 2.08 for all residential parcels. An equivalent PPH was also calculated for non-residential properties. Wastewater flow estimates for each non-residential parcel were calculated and divided by the per capita wastewater estimate for Hernando County of 84 GPCD ADF to achieve an equivalency. These values were used as P for non-residential properties.

The US Environmental Protection Agency (US EPA) has reported the per capita Nitrogen load (I) from OSTDSs as 9.012 lb-N/yr. The soil attenuation rate accounts for natural Nitrogen removal in the soil profile and varies throughout Hernando County with literature values ranging from 10 to 50 percent. The value used by FDEP for all NSILT analyses is 50 percent; therefore, a value of 0.5 was used for D.

The Floridan aquifer recharge factor is based on the recharge rates at each septic tank location, accounting for reactive nitrogen losses along the travel path to and from the OSTDS to the UFA. FDEP developed the UFA recharge assessment that identifies areas of:

- High recharge, greater than or equal to 10 inches per year, indicating a low Nitrogen attenuation (R equal to 0.9)
- Medium recharge, 3 to 10 inches per year (R equal to 0.5)
- Low recharge, 0 to 3 inches per year (R equal to 0.1)
- Discharge zones where the UFA is artesian (R equal to 0)

Each value was input into the formula above to achieve a final L. Table 2 estimates the Nitrogen loading from OSTDSs in the Weeki Wachee and Homosassa/Chassahowitzka BMAPs

and PFAs. The County was divided into districts with similar land use using neighborhoods, major roads, and water bodies as naturally occurring dividing lines.

Table 2 Estimated NSILT OSTDS Loading

Springs Group	Estimated Nitrogen Loading (lb/yr)	
	BMAP	PFA
Weeki Wachee	303,641	156,056
Homosassa and Chassahowitzka	46,534	13,506

Note: lb/yr = pounds per year.

The values in this table are higher than the values calculated by FDEP due to the separate calculation of commercial properties based on land use and assumed wastewater generation rates.

Tables 3 and 4 present each Study District within the Weeki Wachee BMAP and Homosassa/Chassahowitzka BMAP, respectively, along with the number of total lots, estimated number of lots with OSTDSs, BMAP, PFA, average year built, and NSILT-estimated Nitrogen. The number of lots and average year built were gathered from the Hernando County Property Appraiser, and the number of septic systems is from the FLWMI database based on parcel attributes of “known septic,” “likely septic,” and “somewhat likely septic.”

Table 3 Weeki Wachee BMAP Study District with Number of Parcels and OSTDSs, BMAP, PFA, Average Year Built and NSILT Estimated Nitrogen

Study District	Total Parcels	OSTDS			Average OSTDS Age	NSILT (lb/year)
		Built Prior to 1983	Built After 1983	Total		
1 (A)	933	38	689	727	1994	6,835
2 (B)	1,373	130	984	1,114	1992	11,035
3 (C)	467	29	371	400	1992	3,374
4 (D)	1,464	549	575	1,124	1984	11,058
5 (E)	4,192	169	3,422	3,591	1993	30,837
6 (F)	1,244	68	945	1,013	1992	9,182
7 (G)	4,003	349	3,058	3,407	1993	29,931
8 (H)	2,299	350	1,645	1,995	1991	17,899
9 (I)	2,977	881	1,776	2,657	1988	23,167
10 (J)	1,411	710	506	1,216	1984	4,633
11 (K)	509	64	257	321	1993	3,181
12 (L)	44	0	32	32	2001	270
13 (M)	2,993	238	2,281	2,519	1994	22,922
14 (N)	1,084	309	655	964	1989	8,395
15 (O)	1,117	379	619	998	1987	9,016
16 (P)	4,482	274	3,477	3,751	1994	33,100
17 (Q)	219	35	95	130	1991	1,824
18 (R)	2,403	644	1,407	2,051	1989	34

Study District	Total Parcels	OSTDS			Average OSTDS Age	NSILT (lb/year)
		Built Prior to 1983	Built After 1983	Total		
19 (S)	94	22	47	69	1992	641
20	1,388	11	6	17	1865	417
21	565	20	14	34	1972	501
22	1,734	285	756	1,041	199E	8,932
23	45	11	1	12	1972	55
24	432	10	355	365	1997	3,079
25	74	3	1	4	1980	21
26	1,053	5	10	15	1988	127
27	3,978	1	3	4	2002	25
28	658	253	179	432	1976	3,709
33	3,710	84	1,287	1,371	2003	11,915
34	45	10	13	23	1990	252
35	127	41	42	83	1986	666
37	1,659	28	851	879	2000	7435
38	335	21	117	138	1993	1358
39	40	5	20	25	1852	207
41	2,169	3	12	15	1991	509
42	386	118	154	272	1986	2,534
43	435	179	157	336	1982	3,365
44	848	9	7	16	1980	165
45	1,037	11	546	557	2000	5,341
46	50	1	4	5	1985	79
47	570	141	324	465	1983	4,185
48	335	1	291	292	1992	2,538
49	83	4	5	9	1988	829
50	96	13	27	40	1987	432
51	11	4	6	10	1991	101
60	694	73	340	413	1995	3,408
62	412	77	191	268	1991	2,874
63	45	0	2	2	2012	17
64	33	0	3	3	2013	17
65	23	0	2	2	2010	8
69	507	89	249	338	1990	3,007
70	88	24	38	62	1986	602
71	293	132	82	214	1978	2,690
Brooksville	—	230	194	424	1982	3,577

Table 4 Homosassa/Chassahowitzka BMAP Study District with Number of Parcels and OSTDSs, BMAP, PFA, Average Year Built and NSILT Estimated Nitrogen

Study District	Total Parcels	OSTDS			Average OSTDS Age	NSILT (lb/year)
		Built Prior to 1983	Built After 1983	Total		
31	988	1	163	164	2002	1,493
32	6,234	77	1,008	1,085	2004	9,048
33	3,710	84	1,287	1,371	2002	11,915
54	41	8	7	15	1981	141
55	45	9	16	25	1986	138
56	73	14	28	42	1982	90
57	24	7	4	11	1966	67
58	151	29	65	94	1990	734
59	315	49	181	230	1993	1,756
94	62	5	0	5	1969	442
Brooksville	—	511	489	1,000	1981	8,435

3 EXISTING WASTEWATER INFRASTRUCTURE

In addition to the 46,000 OSTDS, two public utility providers (HCUD and the City of Brooksville) and 24 private package plants serve the population of Hernando County.

3.1 PUBLIC UTILITIES WITHIN THE SERVICE AREA

The City of Brooksville serves approximately 10,000 residents with a single water reclamation facility, the William S. Smith Water Reclamation Facility (WRF). The WRF is permitted to treat up to 1.9 million gallons per day (MGD) with treated effluent discharged via land application methods. Additionally, this facility has a permitted modification to increase capacity to 3.0 MGD.

HCUD owns and operates five WRFs throughout Hernando County. Currently, HCUD provides wastewater collection, treatment, and disposal services to over 60,000 residents – nearly one-third of the countywide population – and operates five WRFs. The Airport WRF serves south-and east-County residents, the Glen WRF serves west-County residents, and the Ridge Manor Subregional Wastewater Treatment Facility (WWTF) serves east-County residents. The Brookridge Subregional WWTF and the Spring Hill WRF are planned to be decommissioned in 2020 and 2022, respectively, and their wastewater flows will be pumped to the Glen WRF and Airport WRF, with some flow shifting beginning in 2020.

Wastewater collected from commercial and residential customers within the HCUD service area flows through approximately 320 miles of gravity mains to over 300 pump stations and then through 170 miles of force mains (FMs) to one of four WRFs. The City of Brooksville maintains a utility service area in the geographic center of the County. Figure 5 shows the HCUD service area and City of Brooksville service boundary. See Appendix A for the full-size figure.

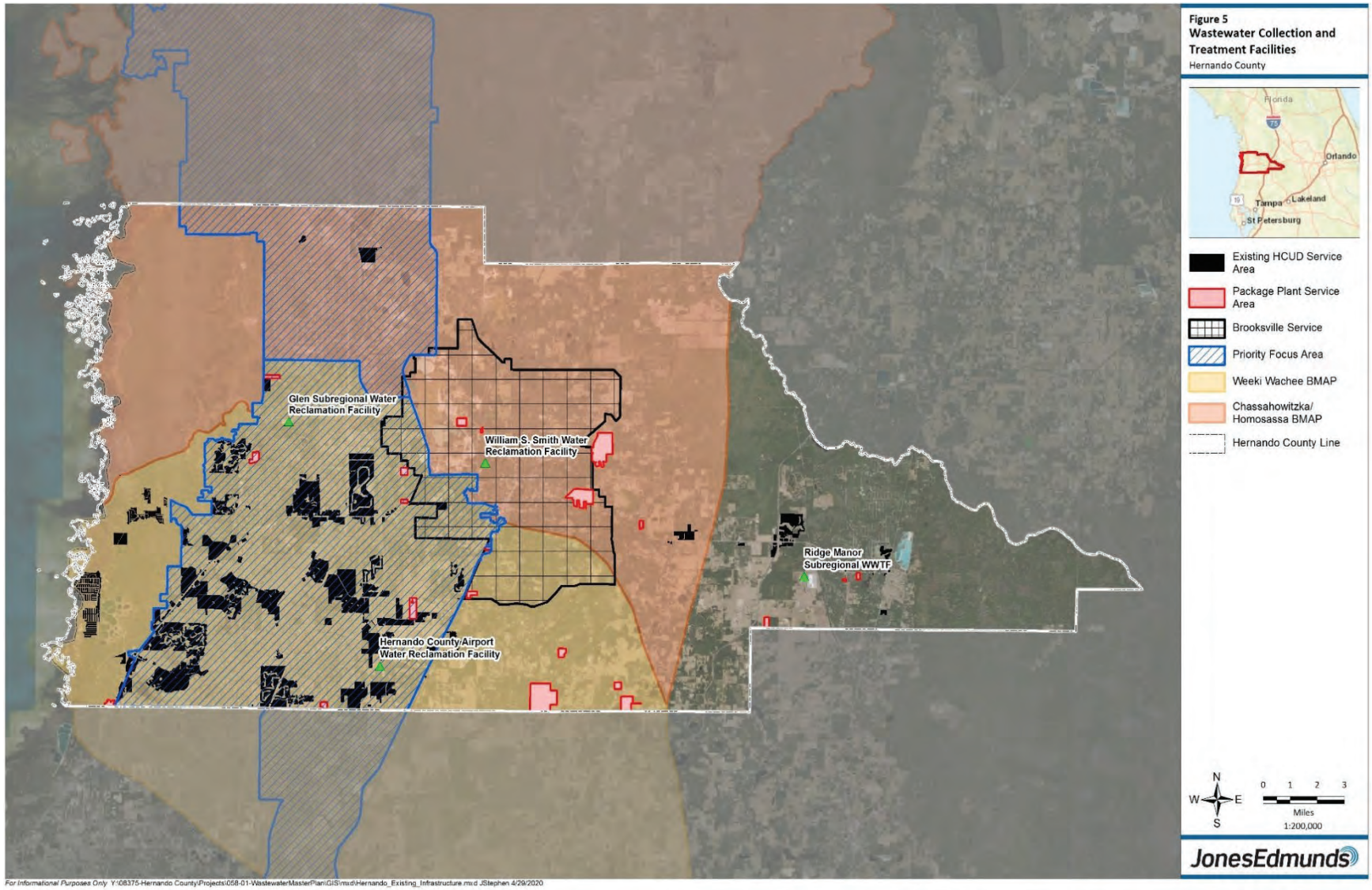


Figure 5
Wastewater Collection and Treatment Facilities
Hernando County
Florida
Orlando
Tampa
Lakeland
St Petersburg
Existing HCUD Service Area
Package Plant Service Area
Brooksville Service
Priority Focus Area
Weeki Wachee BMAP
Chassahowitzka/ Homosassa BMAP
Hernando County Line
Glen Subregional Water Reclamation Facility
William S. Smith Water Reclamation Facility
Ridge Manor Subregional WWTF
Hernando County Airport Water Reclamation Facility
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3.2 Private Utilities Within the Service Area

Twenty-four private package plants continue to operate in Hernando County. Table 5 shows 19 domestic wastewater package plants currently operating within Hernando County. Table 6 lists the number of domestic wastewater facilities within Hernando County and the BMAP or PFA boundaries.

Table 5 Private Domestic Wastewater Facilities in Hernando County

BMAP	BMAP (No. of Facilities)	PFA (No. of Facilities)
Weeki Wachee	12	5
Chassahowitzka-Homosassa	4	0

Table 6 Private Domestic Wastewater Facilities in BMAP and PFA areas

BMAP	BMAP (No. of Facilities)	PFA (No. of Facilities)
Weeki Wachee	12	5
Chassahowitzka-Homosassa	4	0

The domestic wastewater package facilities may connect into the County wastewater systems in the future.

4 WASTEWATER INFRASTRUCTURE NEEDED TO MEET REMEDIATION REQUIREMENTS

This section details the ongoing projects and programs in the County that contribute to meeting the remediation requirements. It also documents the prioritization basis of OSTDS remediation Study Districts. Initial project recommendations and expected nutrient load reduction estimates are provided for all selected projects.

4.1 Ongoing Projects and Programs

Hernando County is committed to maintaining and, where feasible, expanding and improving its wastewater collection and treatment. The County is also committed to protecting and improving the springs and associated waterbodies, focusing on sustainable future development and environmental stewardship. Each public utility's ongoing projects are briefly summarized.

4.1.1 City of Brooksville Projects

The City of Brooksville service area has 1,424 OSTDS that use the City water service; however, the majority are not within City limits. The City has a septic tank phase-out plan that includes two phases. The first phase was set to commence in 2019 and would include 75 homes in the Mountain Park subdivision. The second phase is scheduled to commence in 2027 and will include the approximately 300 homes in the area north of Fort Dade Avenue. The expected nitrogen reduction from the two City of Brooksville projects is 3,163 lb/N/yr.

4.1.2 HCUD PROJECTS

HCUD is managing several projects and planning several new projects that will impact the overall wastewater system and allow for septic to sewer projects to be implemented.

4.1.2.1 Wastewater Treatment Facility Improvements

HCUD has undertaken various planning efforts to reduce Nitrogen in the County-owned WRFs. These improvements will reduce the overall Nitrogen loading to the Springs and will significantly increase the impact of each OSTDS that can be taken out of service.

The following plant expansion, upgrades, and decommissioning are planned:

- Glen WRF advanced water treatment (AWT) upgrade includes designing, permitting, and constructing 3.0-MGD AWT components to achieve a nutrient limit of ≤ 3 mg/L Total-N.
- Airport WRF expansion includes designing, permitting, and constructing to increase the WRF capacity from 3.5 MGD to 6.0 MGD and provide AWT components to achieve a nutrient limit of ≤ 3 mg/L Total-N.
- Brookridge Subregional WWTF decommissioning and pumping wastewater to the Glen WRF.
- Spring Hill WRF decommissioning and pumping wastewater to the Glen and Airport WRFs.
- Decommissioning seven package plants (Holiday Springs WWTF, Topics Recreational Vehicle [RV] Park, Countryside Estates, Weeki Wachee North Mobile Home Park [MHP], Frontier Campground MHP, Bob Hill Springs, Camp A Wyle) and connecting to HCUD WRFs.

4.1.2.2 Collection and Transmission Improvements

Collection and transmission improvements listed in this section are being planned to support the decommissioning of older less efficient treatment plants or allow for septic to sewer projects to be connected. HCUD's ongoing efforts address wastewater collection and transmission system needs associated with the WRF improvements include:

- Berkeley Manor Flow/Regency Diversion: Modify lift stations (LSs) and install a new FM to divert flow to the Glen WRF – Design has been completed with bid phase in 2020.
- Brookridge-Glen FM: Construct approximately 17,325 feet of 12-inch FM from the Brookridge WWTF to the Glen WRF and a new Triplex Master LS – Construction has been completed and placed in service early 2020.
- Elgin Boulevard FM: Install approximately 4,100 linear feet of 12-inch polyvinyl chloride (PVC) FM along Elgin Boulevard to allow diversion flexibility between the Glen and Airport WRFs – Planned to be constructed by 2021.
- Northcliffe Force Main: Install approximately 5,000 linear feet of 12-inch diameter FM along Northcliffe Boulevard from Deltona Boulevard east to Landover Boulevard, and

approximately 4,300 LF of 8-inch FM along Landover Boulevard south to the Chalmers LS – Planned to be constructed by 2024.

- Spring Hill WRF Diversion FM: Install several small FMs needed to divert existing flow away from the 10-inch FM discharging to Spring Hill WRF – Planned to be constructed by 2021.

- Weeping Willow Street FM: Install a 16-inch PVC FM from the High Point LS to the Weeping Willow Street LS. This project will allow additional flow to be transmitted to the Glen WRF and the current 10-inch PVC FM to be repurposed to convey reclaimed water (RCW) from the Glen WRF to Cortez Oaks – Planned to be constructed by 2021.

4.1.2.3 Septic to Sewer Projects

Hernando County has recently completed the following projects in support of septic to sewer:

- Septic to Sewer Conversion Study, evaluating the feasibility of converting 30,000 septic tanks to central sewer in the Spring Hill area

Hernando County also has the following planned septic to sewer projects identified in the 2018 BMAP, converting a total of 1,956 septic systems to central sewer:

- Oakley Island Sewer Infrastructure, eliminating 15 septic systems and 338 lb/N/yr
- District A Phase 1, 363 septic systems and 3,413 lb/N/yr (revised since BMAP),
- District A Phase 2, 364 septic systems and 3,422 lb/N/yr (revised since BMAP),
- District B Phase 1, 557 septic systems and 5,518 lb/N/yr (revised since BMAP), and
- District B Phase 2, 557 septic systems and 5,518 lb/N/yr (revised since BMAP).

4.2 Study District Prioritization and Selection

The previously completed Septic to Sewer Conversion Study is the basis of the study district prioritization by prioritizing an important area of the County. This Feasibility Analysis builds on that work but expands the prioritization of study districts for the entire County service area. This section describes factors used in prioritizing and selecting a district into a project.

4.2.1 Septic to Sewer Conversion Study (2016)

In 2016 after the TMDL was established and before the BMAP was published, HCUD conducted a study to identify options for converting approximately 30,000 lots with OSTDS as well as any non-municipal WWTFs within the study area to central collection and treatment. The project was developed with financial assistance provided by the Fish and Wildlife Foundation of Florida, Inc. through the Protect Florida Spring program.

To better understand the impacts to the Weeki Wachee nutrient loading, the study determined the following:

- The hydrologic conditions that exist within the Weeki Wachee spring basin by researching existing hydrological studies.

- The amount of nutrients from septic tanks in the 1-, 5- and 10-year travel times.

The study documented the selection of the three most effective projects and a hydraulic model to understand the impact of connecting the districts including:

- Preparing a matrix comparing each district by capital cost and long-term maintenance cost where septic-to-central-sewer provides the most benefit.
- Recognizing the hydraulic analysis necessary to determine preliminary sizing of infrastructure necessary to connect the top three districts to existing infrastructure.
- Analyzing existing infrastructure capacity and recommendations for capacity expansion.

The final report included a sequenced approach to connecting the top three districts and the identification of the all funding alternatives and available grants.

Although the 2016 Conversion Study was a step toward reducing Nitrogen in the Weeki Wachee PFA, it was completed before FDEP had launched its NSILT model. With the advent of the new model, HCUD is using FDEP methodologies and grant funding to verify the 2016 Conversion Study results and to modify the septic-to-sewer plan where needed.

4.2.2 Project Selection

Starting with the Study Districts identified in the 2016 Conversion Study, the rest of the County was dissected into additional Study Districts as described in Section D.2.2. The County's parcels in each Study District were used as a basis to understand wastewater flows and Nitrogen from OSTDSs. Section D.2.3 describes the methodology used to develop the NSILT calculation of Nitrogen for each Study District.

The NSILT calculations along with hydrologic conditions, estimations of nutrient travel times, and location were used to select projects for the 20-year planning horizon.

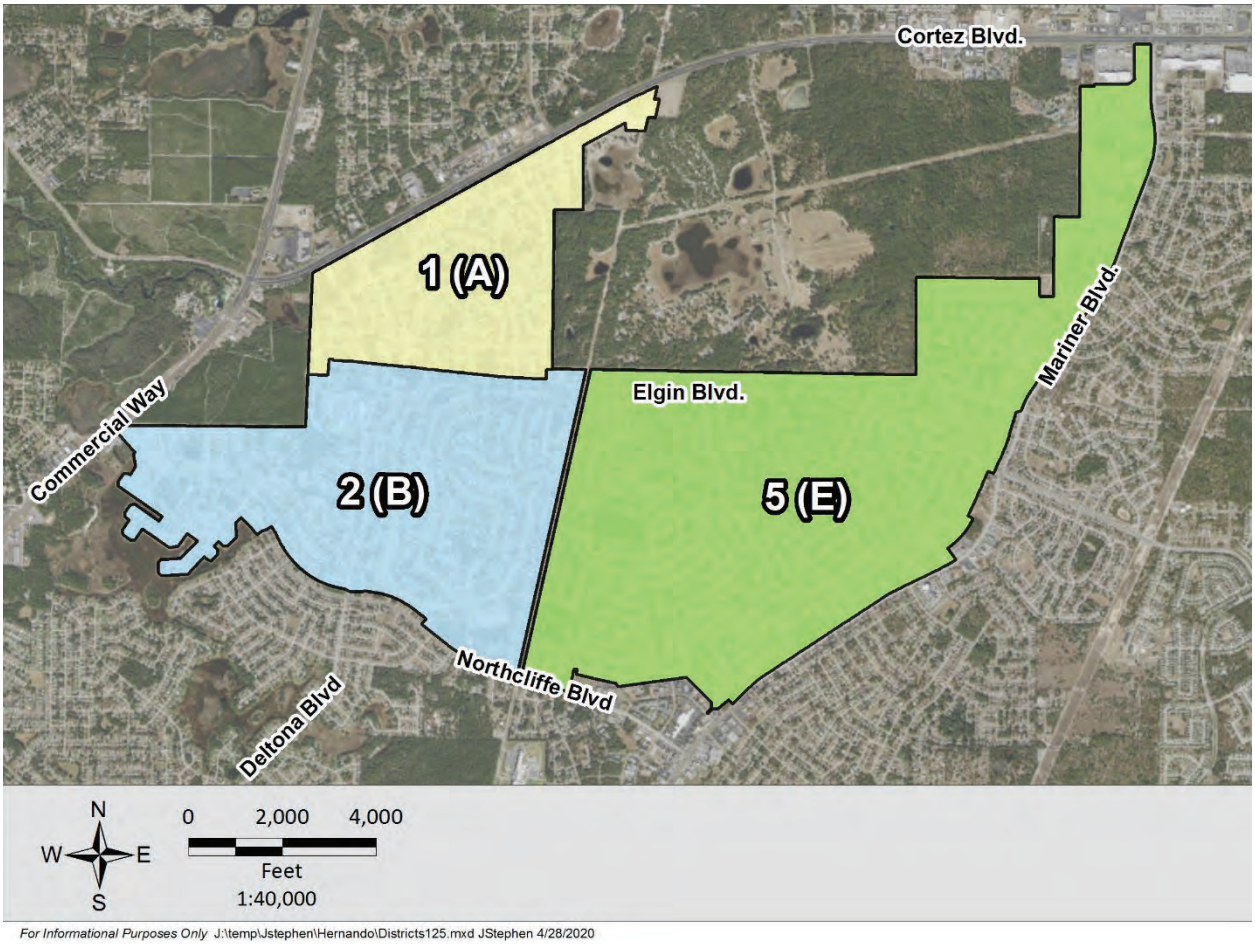
Three Study Districts were selected to meet the TMDL for Weeki Wachee Springs Group. Figure 6 presents the three selected Study Districts. Two of the three district were previously identified and were found to meet the criteria of the BMAP with the addition of District 5 (E). Additionally, each of the three areas selected will provide for construction to provide infrastructure for future expansions of neighboring districts beyond the planning horizon.

The selected areas include eliminating 5,432 OSTDS, inclusive of two previously identified areas within the PFA. The three Study Districts were presented to the public for comment in multiple public meetings which is detailed in Section D.8.

The following reductions for each of the Study Districts selected are as follows:

- District 1 (A): 6,835 lb/N/yr
- District 2 (B): 11,035 lb/N/yr
- District 5 (E): 30,837 lb/N/yr

Figure 6 Three Selected Study Districts



Figures 7 and 8 present the selected Districts for remediation along with the type of remediation recommended for the Weeki Wachee PFA and the Homosassa/Chassahowitzka PFA respectively. See Appendix A for the full-size figures.

The type of remediation include those Districts where septic to sewer is recommended inside the 20-year planning horizon, septic to sewer Districts that will be remediated after the planning horizon, and Districts that are unlikely to be served with central sewer.

The total reduction for converted OSTDS projects selected are 48,707 lb/N/yr. This is in addition to the City of Brooksville projects and the Oakley Island Sewer Infrastructure project, bringing the total project nitrogen reduction to 52,258 lb/N/yr. The Weeki Wachee BMAP set out a reduction goal of 195,200 pounds of Total-N for all project types. As OSTDS were calculated to contribute 30 percent of the Nitrates in to the Weeki Wachee Springs Group, the target of reductions from OSTDSs is 58,560 lb/N/yr.

Although the selected conversion projects fall short of the BMAP requirements, the existing OSTDS in Districts that were not selected for centralized service will be required to be upgraded with enhanced OSTDS when repair or replacement is needed under the BMAP guidelines. A replaced OSTDS with an improved system in a high recharge area will generate an 8.0 lb/N/yr credit, whereas an enhanced OSTDS will generate a 5.5 lb/N/yr. To bridge the gap between planned projects and the goal, the County will need approximately 47 systems to be replaced or enhanced per year.

Figure 7

Weeki Wachee Future Project Areas

Hernando County Feasibility Analysis Report

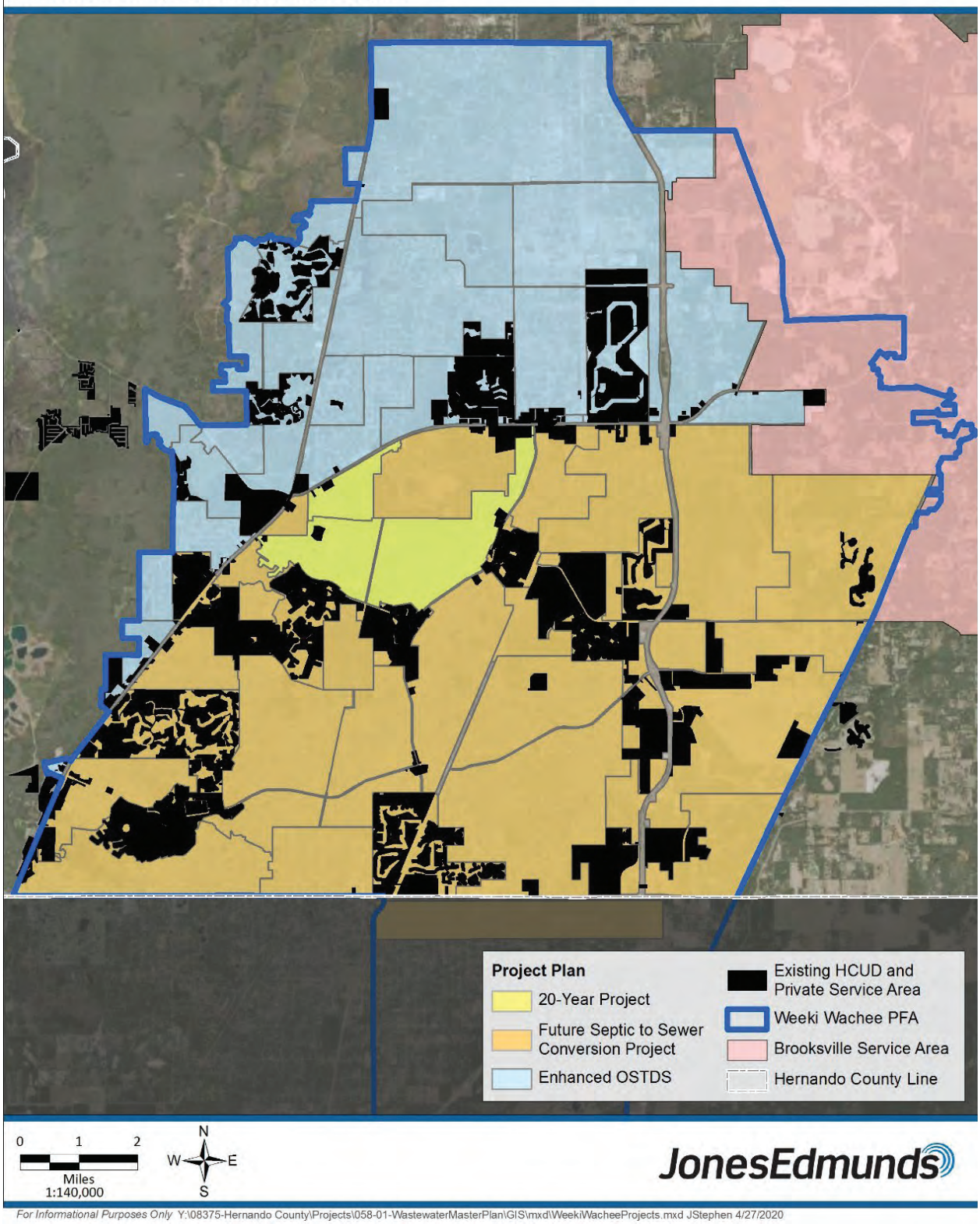


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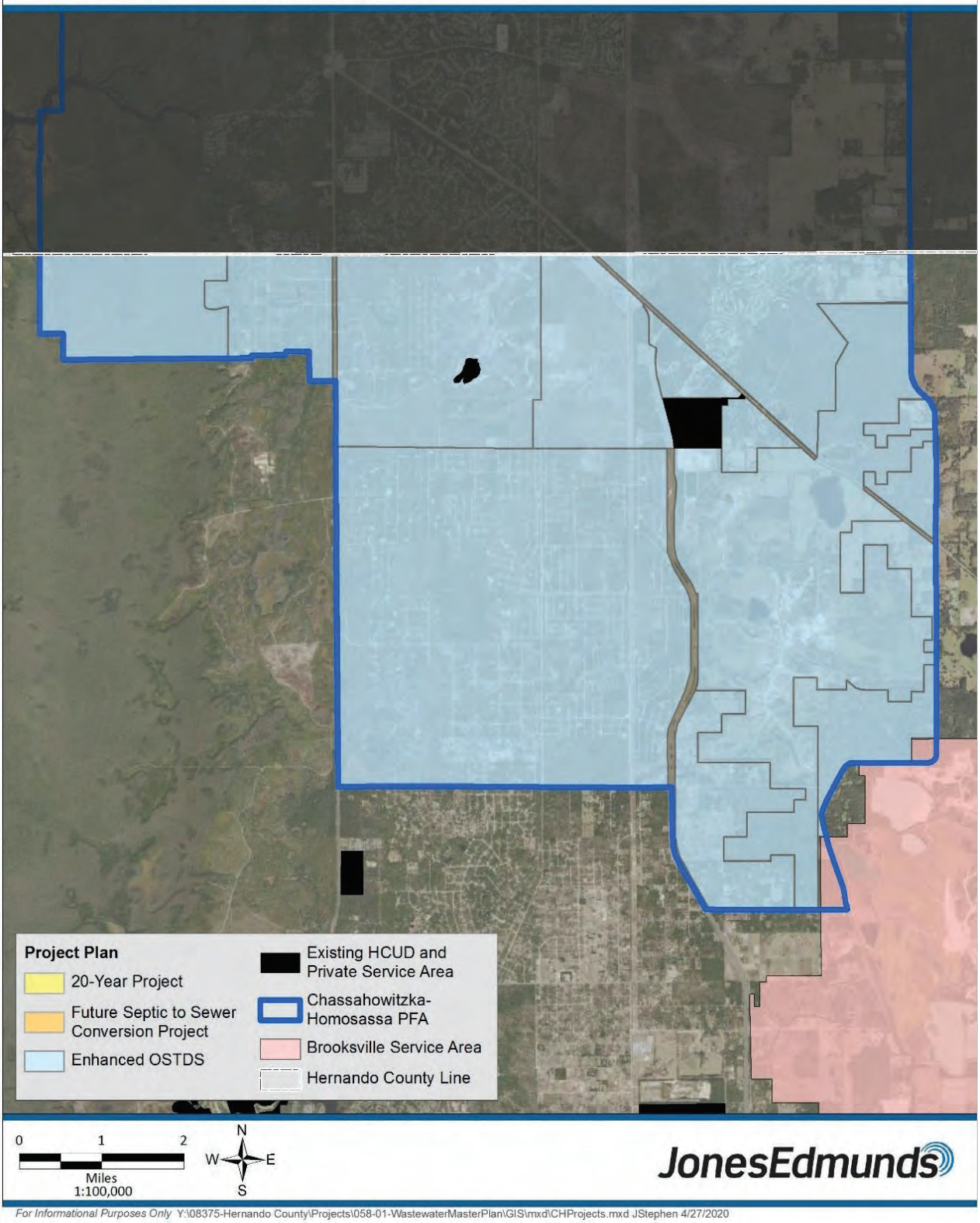
Figure 8

Chassahowitzka-Homosassa Future Project Areas

Hernando County Feasibility Analysis Report



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5 SEPTIC SYSTEMS WITHIN BMAPS AND PFAS THAT REQUIRE REMEDIATION

As required within the BMAP, HCUD has developed this master wastewater treatment feasibility analyses to identify specific areas to be sewered within 20 years of BMAP adoption. According to the statute, the OSTDS remediation plan must provide loading reductions consistent with achieving the TMDL within 20 years of plan adoption (see Section 373.807(1)(b)8., FS).

This plan establishes the following remediation policy for existing systems based on

- The potential for reducing nitrogen loads by converting existing OSTDS to enhanced nitrogen removing systems or by connecting homes to central sewer.
- The total amount of nitrogen load that must be reduced to achieve the TMDL.
- The relative contribution of nitrogen load from existing OSTDS.

Parcels that are inside the BMAP area that will not have centralized service in this time frame will be required to follow the rules set out in the BMAP:

- New systems on parcels smaller than 1 acre and within the PFA must include one of the following Nitrogen-reducing enhancements:
  - In-ground nitrogen-reducing (INBR) biofilters (media layer systems)
  - In-tank nitrogen-reducing biofilters
  - Aerobic treatment units (ATU) and performance-based treatment systems (PBTS)
  - Dispersed ATU or PBTS systems
- Systems needing repair or replacement must include one Nitrogen-reducing enhancement listed above, unless sewer connections will be available within 5 years.

5.1 WEEKI WACHEE OSTDS REQUIRED REMEDIATION

Of the 36,749 septic systems within the Weeki Wachee BMAP in the Hernando County, 35,922 are within the PFA. Each existing system not specifically addressed by one of the projects listed in D.4.1.2 or D.4.2.2 will require a Nitrogen-reducing enhancement technology during repair or replacement. Approximately, 30,300 OSTDS within the Weeki Wachee PFA fall into this category.

5.2 HOMOSASSA / CHASSAHOWITZKA OSTDS REQUIRED REMEDIATION

Of the 6,270 septic systems within the Homosassa/Chassahowitzka BMAP in the Hernando County, 1,618 are within the PFA. No projects specifically address these OSTDS; however, each of the 1,618 systems will require a Nitrogen-reducing enhancement technology during repair or replacement.

6 RESTORATION ALTERNATIVE STRATEGIES AND COST COMPARISON

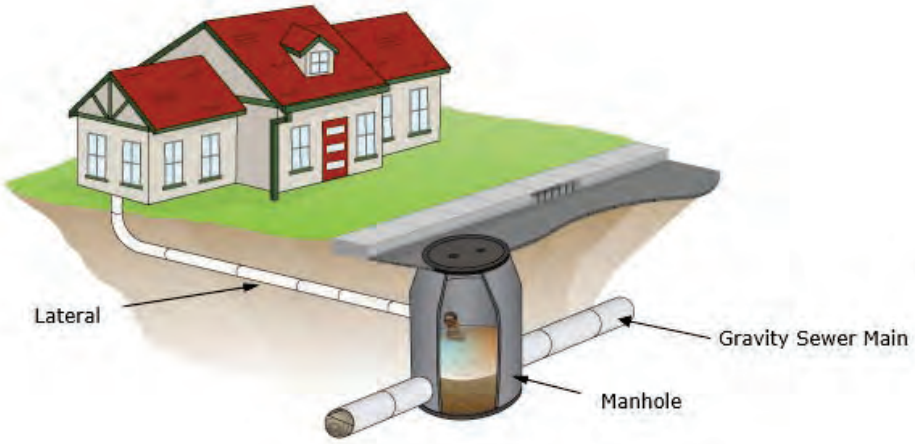
This section reviews different centralized collection system and de-centralized enhanced Nitrogen treatment septic remediation alternatives as restoration options for the project area. This section also presents the cost analyses conducted to determine affordable improvements.

6.1 CENTRALIZED COLLECTION SYSTEM ALTERNATIVE

Gravity collection systems are a common, traditional method to collect wastewater for public utilities. Sewage flows by gravity from the home through 4-inch sloped service lateral pipes to the gravity sewer mains. Gravity sewer mains are typically 8-inch diameter and larger. Manholes are typically required every 400 feet, at each main intersection, and at changes in flow direction. The network of gravity sewer mains and manholes is considered the gravity collection system. The gravity collection system typically conveys sewage to a transfer LS that pumps the sewage under pressure to the WRF for treatment.

Figure 9 shows a typical gravity collection system.

Figure 9 Gravity Collection System



(Schematic from https://emedia.rmit.edu.au/dlsweb/Toolbox/plumbing/toolbox12_01/units/cpcpdr4001a_sanitary/00_groundwork/page_002.htm.)

ADVANTAGES

- Lowest O&M cost.
- Highest long-term reliability.
- Homeowner easements not needed.

DISADVANTAGES

- High capital cost for retrofitting existing neighborhoods.
- Deeper excavations typically required.
- High community disruptions to streets, sidewalks, etc.
- Higher infiltration potential.

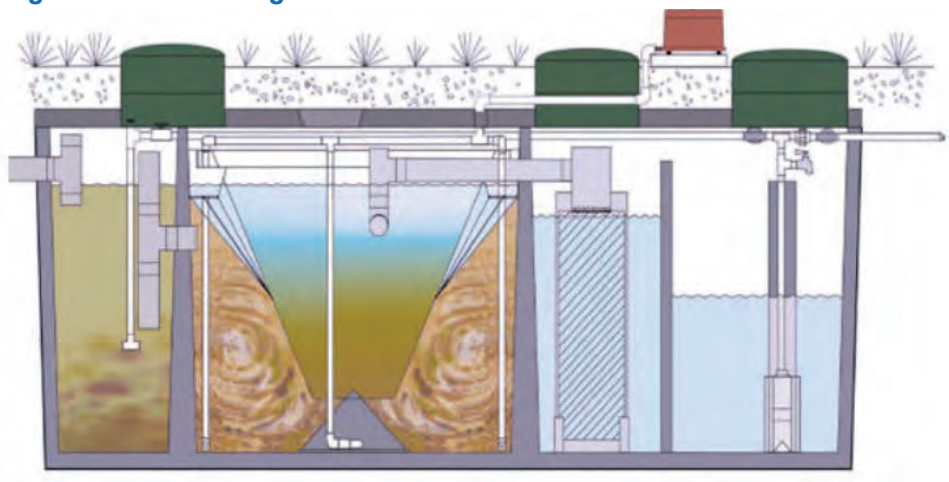
6.2 Enhanced Treatment of Nitrogen Onsite System Alternatives

FDOH has identified allowable enhancements to OSTDSs that will provide adequate Nitrogen-removal rates in accordance with National Sanitation Foundation/American National Standards Institute (NSF/ANSI) 245: Nitrogen Reduction. That standard covers residential wastewater treatment systems with rated capacities between 400 and 1,500 gallons per day (gpd). A minimum Nitrogen reduction of 50 percent must be achieved. Options that provide for the repair, upgrade, or replacement of an existing OSTDS to meet Nitrogen-removal requirements include, Nitrogen-reducing aerobic treatment units (ATUs) and INBR biofilters.

6.2.1 Nitrogen-Reducing ATU

The ATU system is more efficient at processing waste than a conventional septic tank and drainfield. It works by reducing the amount of biological material entering the drainfield. The nitrogen-reducing ATU systems typically involve biological denitrification processes such as mixed biomass using suspended growth, fixed film, or an unsaturated media filter or two-stage segregated biomass. In both processes, treatment is accomplished by bacteria respiration. In the mixed biomass process, recirculation with fresh incoming wastewater is essential for continuous denitrification. The two-stage segregated biomass process requires external carbon or chemical addition. All ATU systems typically consist of a pump, pipes, and diffusers. These systems require a maintenance contract and operating permit from the County health department. Effluent quality laboratory samples are required to be submitted by the maintenance entity every 6 months for residential systems and every 3 months for commercial systems, along with an inspection/maintenance report. FDOH annually inspects the maintenance and performance of the system. These systems are estimated to achieve 65-percent Nitrogen removal. Figure 10 shows a typical Nitrogen-reduction ATU.

Figure 10 Nitrogen-Reduction ATU



(Schematic from https://floridaonsitesystemsanddesign.com/hoot-nitrogen-reduction/.)

Advantages

- Treatment occurs on site without the need for a centralized sewer.

- Potential additional grant funding may be available for homeowners. FDEP has requested additional funding from the State Legislature for this program. Therefore, additional grant funding from FDEP contingent on receiving future funding.

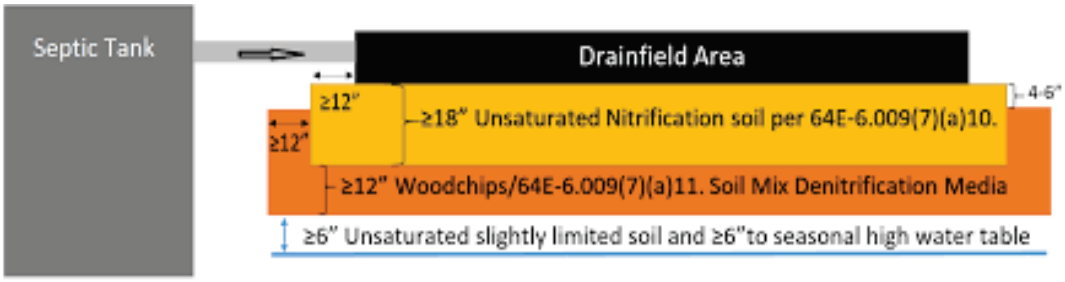
DISADVANTAGES

- Requires consistent wastewater inflows for optimal performance.
- O&M requirements for homeowners.

6.2.2 IN-GROUND NITROGEN-REDUCING BIOFILTER

The in-ground Nitrogen-reducing biofilter option is a passive system, which includes a denitrification layer under 18 inches of sand fill under the OSTDS drainfield area. The denitrification layer is made up of a mixture of fine aggregate – course sandy loam, sandy loam, loamy sand, fine sandy loam, very fine sand, loamy fine sand, or loamy very fine sand – and a lignocellulosic material, chips or shavings of untreated lumber, blended urban waste wood mulch, yellow pine sawdust, 2- to 3-inch wood chips, or other material demonstrated to be effective at denitrification. The denitrification layer is not less than 12 inches thick, extends 12 inches beyond the perimeter of the drainfield, and wraps 12 inches upward. Additionally, the denitrification layer bottom must be 6 inches above the seasonal high groundwater table. The denitrification layer must be inspected during construction, requires special repair and maintenance procedures, and must be tested for performance 10 years after installation to determine if media replacement is warranted. These systems are estimated to achieve 65-percent Nitrogen removal. Figure 11 shows a typical INBR biofilter.

Figure 11 In-Ground Nitrogen-Reducing Biofilter



(Schematic from https://www.flera.org.)

ADVANTAGES

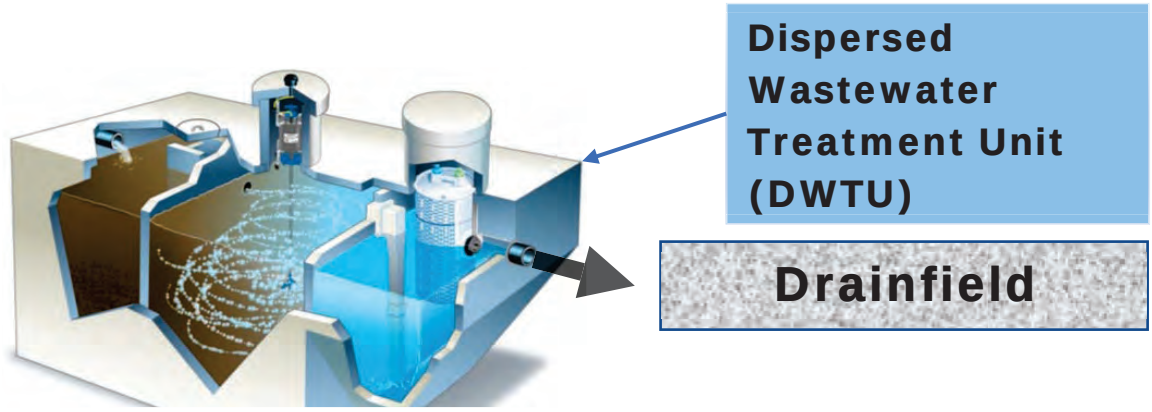
- Treatment occurs on site without the need for a centralized sewer.
- Can be used in conjunction with existing septic tank.
- Potential additional grant funding may be available for homeowners. FDEP has requested additional funding from the State Legislature for this program. Therefore, additional grant funding from FDEP is contingent on receiving future funding.

DISADVANTAGES

- Similar O&M requirements and costs as septic tank for homeowners with additional costs for inspection every 10 years and media replacements.
- Limited application due to groundwater clearance requirements.
- Requires more space than a conventional septic system.

6.2.3 Dispersed ATU or PBTS System

The dispersed ATU or PBTS system (Dispersed System) is a Centrally Managed – ATU or PBTS at each home that is managed by a public or private entity. Systems require wireless connection and supervision by a professional wastewater operator.



Advantages

- Treatment occurs on site without the need for a centralized sewer.
- High nitrogen removal.
- Remote monitoring and control allow them to be permitted as Domestic Wastewater Facilities by FDEP.

Disadvantages

- No full-scale operating installations at a large scale. Only small pilot at a park in Volusia County and one other site.
- Requires central management from a public or private entity that provides routine maintenance of units and control systems at each home.
- Requires consistent wastewater inflows for optimal performance.
- Estimated as highest-cost alternative with annual O&M, power, service fees, and permitting.

6.2.4 Senate Bill 712 – "The Clean Waters Act"

Senate Bill 712 (SB 712) will transfer the oversight, regulation and inspection of OSTDS from FDOH to FDEP. This bill was passed by both the House and Senate Floors. The Governor has not signed SB 712 but is expected to. When the Governor signs the bill, a report will be required from FDOH and FDEP by July 1, 2020, summarizing the requirements of the transfer, along with a follow-up report in December 2020. The transfer is proposed to start July 1, 2021. The Clean Waterways Act is part of a multifaceted effort to improve and maintain the health of our waters.

6.3 Cost Comparison for Alternative Restoration Strategies

Each of the restoration strategies presented above achieves the objective of removing Nitrogen as required by BMAPs and mandated by statute. The costs associated with each system type were evaluated and the cost estimation methodology is presented for each strategy.

To compare community collection system costs to individual system costs, a representative planning unit for the collection system was defined as 176 equivalent residential units. This was based on a thorough review of wastewater collection systems in the HCUD service area and is documented in the 2016 Septic to Sewer Conversion Study commissioned by Hernando County. Appendix B summarizes this cost analysis.

Tables 7 and 8 present the present-worth cost summaries.

Table 7 Summary of Present Worth Costs by Restoration Alternative per Planning Unit

Costs	Gravity	ATU	INBR
Construction Cost	$5,231,341	$2,675,200	$2,464,000
Operations and Maintenance Costs	$2,798,564	$3,248,565	$384,397
Replacement Cost	$59,320	$5,134,687	$6,771,015
Connection Fees	$623,744	—	—
Interest	$502,699	$267,520	$246,000
Total Present Worth Cost	**$9,236,103**	**$11,325,973**	**$9,865,812**

Table 8 Summary of Cost Alternatives per ERU

Costs	Gravity	ATU	INBR
Construction Cost	$30,000	$15,200	$14,000
Operations and Maintenance Costs	$15,901	$18,458	$2,184
Replacement Cost	$337	$29,174	$38,472
Connection Fees	$3,544	—	—
Interest	$2,856	$1,520	$1,400
Total Present Worth Cost	**$49,782**	**$62,832**	**$54,656**

6.3.1 Cost Estimate Basis for Gravity Sewer

Layout and functionality of the existing utility system within the study area was used as a reference to aid in the developing the proposed utility collection system for a Study District planning unit. The gravity cost estimates included reviewing the HCUD pump stations and manholes to determine the average number of pump stations and manholes for the existing sewer customers. The gravity sewer mains were estimated based on the average lot size for homes with septic. Finally, using an average ratio of existing force main length to existing served parcels was used to develop an average estimate of total length of force main per planning unit.

Estimation for road replacement associated with installing conventional gravity sewer infrastructure assumed the entire width of the existing roads will be removed and replaced with roads based on the County's major local road standards. This roadway section includes a width of 24 feet with 2 inches of asphalt, 25 feet of 8-inch-thick limerock base, 28 feet of 12-inch stabilized subgrade, and 4 feet of sod along both sides of the roadway.

An on-site conversion cost is also estimated, which includes pumping and abandoning the existing septic tank, connection to the system in right-of-way. and restoration of the

residential yard. This estimate assumes that the septic tanks are in the front of the house and excessive piping and restoration will not be required.

Additionally, all individual construction costs are based on recent bids.

6.3.2 Cost Estimate Basis for ATU

To estimate costs for onsite systems, a complete system installation cost is used along with estimated cost for removing the existing system and restoring the landscaping.

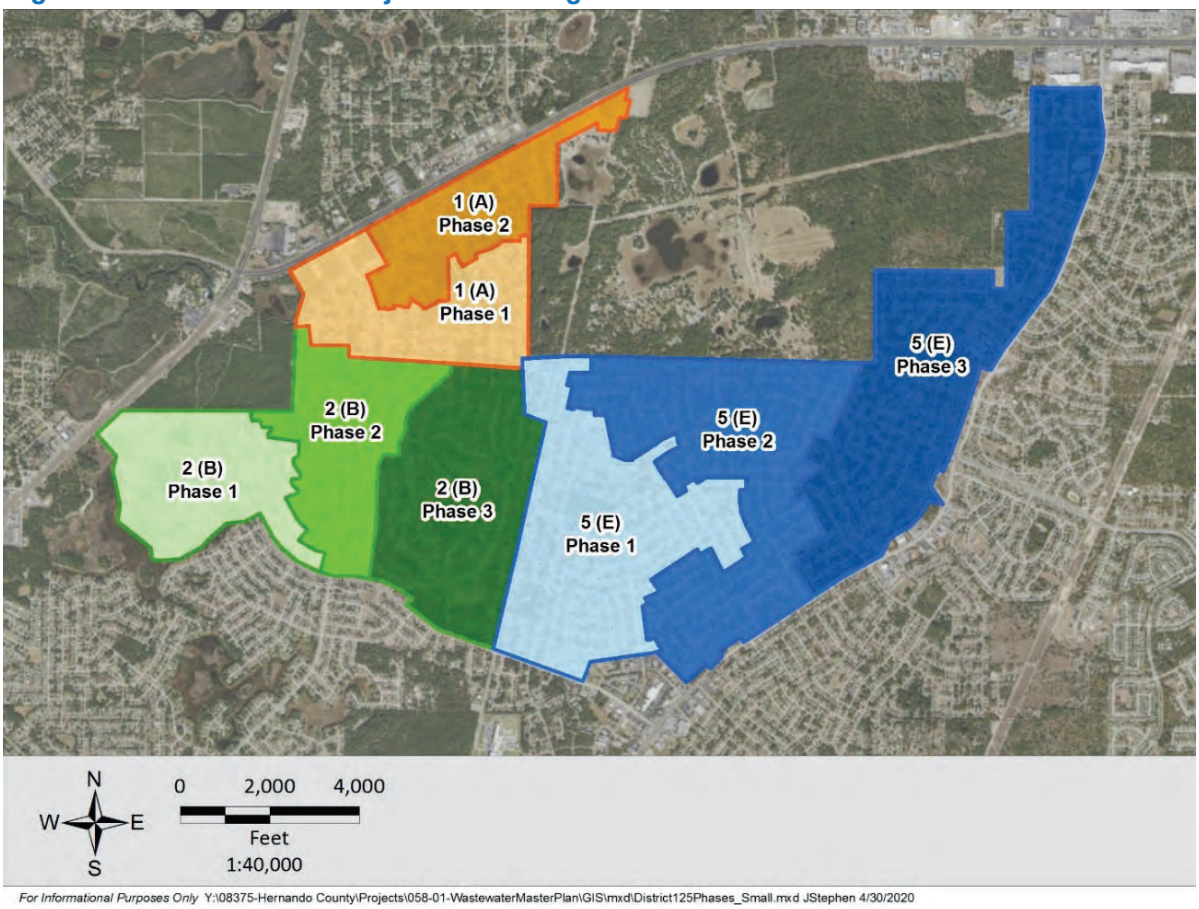
6.3.3 Cost Estimate Basis for INBR

To estimate costs for onsite systems, a complete system installation cost is used along with estimated cost for removing the existing system and restoring the landscaping.

7 RECOMMENDED ALTERNATIVE

To meet the Nitrogen-reduction requirements, the County will need to remediate Study Districts 1 (A), 2 (B), and 5 (E). These are the top three areas selected for remediation by converting from septic to centralized gravity sewer. As detailed in Section D.4, the proximity to springs, density of development, and location were key driving factors in the selection. Each District will be completed in phases. Figure 12 presents the phasing within each selected district.

Figure 12 Selected Projects Phasing



Total construction costs for each district, shown in Table 9, are estimated based on the equivalent number of planning units, as described above. Construction costs include pavement removal and replacement, driveway restoration, pump stations, electrical installation, and force main and gravity main installations. Costs for service hook-ups and septic tank abandonment are also included. The cost opinion's accuracy range per the Association for the Advancement of Cost Engineering International's Cost Estimate Classification System (Recommended Practice No. 18R-97) is a feasibility estimate or Class 4, with a range of accuracy of -15 percent to +50 percent. It includes design, permitting, existing septic system abandonment, and road restoration.

Table 9 Summary of Costs for Selected Projects

District	Parcels	Estimated Costs
A	927	$26,500,000
B	1,372	$39,225,000
E	4,189	$119,600,000

Table 10 shows estimated construction costs for each 5-year increment. Cost estimates includes design, permitting, existing septic system abandonment, and road restoration.

Table 10 Recommended Phasing and Estimated Cost

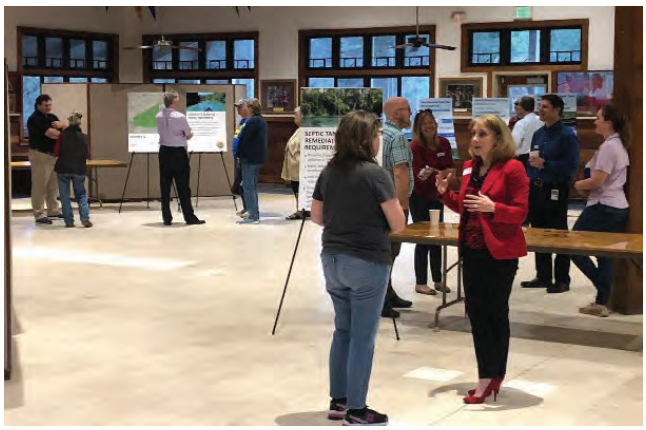
0-5 Years	5-10 Years	10-15 Years	15-20 Years
District A Phase 1	District B Phase 1	District B Phase 3	District E Phase 2
District A Phase 2	District B Phase 2	District E Phase 1	District E Phase 3
$26,500,000	$26,125,000	$52,900,000	$79,800,000

8 PUBLIC OUTREACH PROGRAM

A key element of the OSTDS Feasibility Assessment Report is the Public Outreach Program. The intent of the public outreach program is to provide educational information associated with the requirements of the Florida Springs and Aquifer Protection Act (FSAPA) as it relates to septic tanks. The outreach program was also designed to obtain feedback from key community stakeholders and the members of the general public with particular emphasis on those residents who are potentially impacted by projects identified in the Feasibility Assessment Report.

8.1 STAKEHOLDER MEETING

On November 7, 2019, HCUD coordinated with Hernando Progress, a non-profit organization consisting of members of the Chamber of Commerce, the Builders, and the Realtors. A handout was provided to all attendees with background information on the FSAPA requirements. The County, their consultant, and a representative from the



Hernando County Health Department provided a presentation and held a question and answer session for the group that expanded on the details of not only the FSAPA but also the County's goals as it related to septic tank remediation. An overview of the priority areas under consideration by the County and the anticipated costs were discussed.

Input was solicited from the group regarding what concerns the attendees had and were experiencing in the marketplace. Frustration was expressed regarding lack of education of existing and new homeowners regarding the statutory changes. Builders felt like they are the front lines of communication without support. The problem of Nitrogen impacts on the springs can be difficult to convey and therefore it can be difficult for the public to make the connection between septic tanks and the degradation of the springs. Even with realtors making disclosure during transactions, homeowners need more information to comprehend the actual fiscal impacts along with the benefits to the advanced septic tanks. Various strategies for public education were discussed. Some suggested ideas included the following:

- FAQs should be available for the public.
- Costs for homeowners.
- Website for – Property Appraiser and Realtors

In response to the educational concerns, extensive interaction occurred among all participants regarding required inspections of the HPATU (High-Performance Advanced Treatment Units) and the HPATU versus the passive in-ground treatment alternative. The continued proliferation of new septic tanks was also discussed.

An extensive financial discussion included cost of the various alternatives in the PFA, potential funding sources for cost offsets, and what the County sees as a potential cost to the residents. Available funding mechanisms discussed included the following:

- Clean Water State Revolving Fund (SRF)
- State and Federal Clean Water Act Section Grants
- SWFWMD Cooperative Funding Initiative
- FDEP Septic Upgrade Incentive Program
- FDEP and SWFWMD State Springs Funding
- Legislative Appropriation

Appendix C provides copies of the handout, presentation, and meeting minutes.

8.2 PUBLIC MEETING

On February 4, 2020, from 4:00–7:00 pm, HCUD hosted a public meeting at the Sandhill Scout Reservation. The meeting was broadly advertised on the County's website, but individual invitations were sent to residents in the area identified as the initially prioritized project area for septic to sewer conversion (District 1 (A)). The meeting was structured as an Open House to allow residents to attend at a time that was most convenient for them as well as allow residents to have one-on-one discussions with County staff, the County's consultants, or FDEP. The structure of the Open House provided a flow from the sign-in table where attendees were provided with an educational handout to various information stations culminating in an area to review the information in a rolling presentation. Attendees

were then asked to fill out a questionnaire that allowed the County to capture input from the residents associated with the direction the County was going and concerns about the plan moving forward.

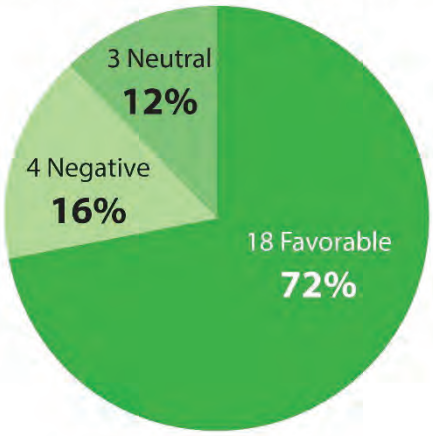
The manned information stations included the following:

- How Septic Systems Work – Provided an overview of how septic tanks work and how they impact the springs.
- The FSAPA – Provided an overview of the legislation and the associated requirements in the PFAs.
- The Wastewater Planning Process – Provided an overview of the project being undertaken by the County as it relates to identifying and prioritizing projects in the PFA to reduce nutrient loading.
- District A: The First Project – Provided an overview of the initial project planned by the County along with the costs and proposed timeline for moving forward.

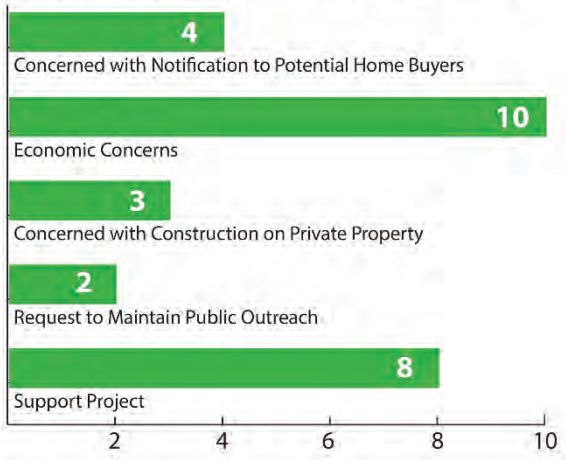
A rolling presentation was a culmination of all materials presented at the stations with personnel available to answer any questions from participants.

More than 50 residents attended the Open House. The County received 18 comment cards representing 25 attendees. Over 50 percent of the respondents were supportive of the septic to sewer project, others were appreciative of the information and wanted to be kept informed, and others were concerned about the cost of moving from septic to sewer. Overall, the response from attendees was favorable. County staff personally reached out to everyone who signed in at the meeting to offer progress updates as the HCUD continues to move forward. HCUD intends to provide email updates to meeting attendees.

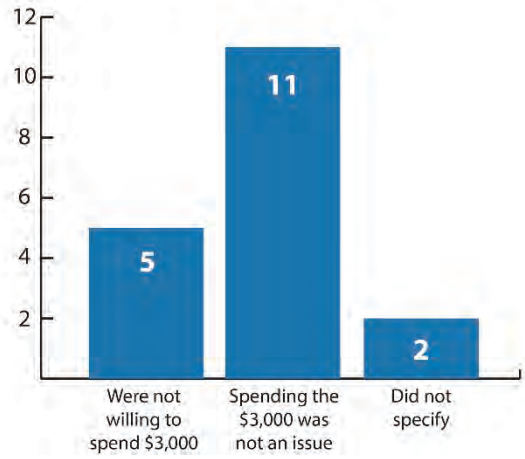
Response of Attendees who Left a Comment



Feedback of Attendees who Left a Comment



Respondents Willing to Pay for New Sewer System



Appendix D provides copies of the handout, boards, presentation, and comment card. Appendix D also includes copies of the website notification and invitation that were sent to the District A residents.

The County has also maintained a website presence associated with septic to sewer conversion and the FSAPA. A notice on the County's main page for several months directed residents to a specific page dedicated to this program. The County intends to update this page with any upcoming events.

https://www.hernandocounty.us/departments/departments-n-z/utilities/septic-to-sewer-project.

9 RATIONALE FOR RECOMMENDED ALTERNATIVE

Several reasons support the selection of central sewer service as the recommended means to collect and treat sanitary discharge in Districts 1, 2, and 5. First and foremost, centralized sewer service is a proven and reliable method within Hernando County to collect and treat sanitary discharge. Additionally, centralized sewer provides the means to enact technologies that remove more Nitrogen than onsite systems and thus will have the most impact of any of the improvements analyzed.

Nitrogen levels in WRF effluent are constantly monitored and any exceedances are corrected immediately. Additionally, the discharge point from WRF are farther from the springs, giving more time and distance for environmental processes to use the greatly reduced nutrient discharges.

Another important feature of centralized sewer alternative includes long-term and properly scheduled maintenance. The maintenance of a centralized system are in the control of the HCUD, which has a proven maintenance record.

Ultimately, the customers are responsible for the maintenance cost of any alternative chosen. Although the initial installation cost for enhanced OSTDS is less than centralized sewer, the ongoing operation and maintenance costs are higher. A central system controlled by a public utility allows for professional level maintenance while benefiting from economies of scale.

From an environmental perspective, centralized sewer alternative provides more Nitrogen removal, and this plan moves the discharge locations farther from the springs. Additionally, although enhanced OSTDS are required to have periodic testing; an INBR is only tested once every 10 years. Therefore, a system could be failing for years before it is actually detected and deemed necessary for replacement, whereas centralized treatment facilities are tested weekly.

10 HCUD SUBREGIONAL WRF AND CIP UPGRADES

HCUD has planned to regionalize to three WRFs throughout Hernando County:

- The Airport Subregional WRF to serve south-and east-County residents.
- The Glen Subregional WRF to serve west-County residents.
- The Ridge Manor Subregional WWTF to serve east-County residents.

Based on the planned conversion of specific Study Districts to centralized sewer along with in-fill residential and commercial growth, the wastewater flow increases to the three ubregional WRFs over the next 20 years were projected as shown in Figures 13, 14, and 15.

The Airport WRF is projected to be at design capacity of 3.5 MGD in 2023, and the proposed expansion to 6 MGD will be completed in 2023. The Glen WRF will exceed design capacity of 3.0 MGD in 2030, and the Ridge Manor WWTF will exceed design capacity of 0.75 MGD in 2036.

Figure 13 Airport WRF Flow Projections and Permitted Capacity

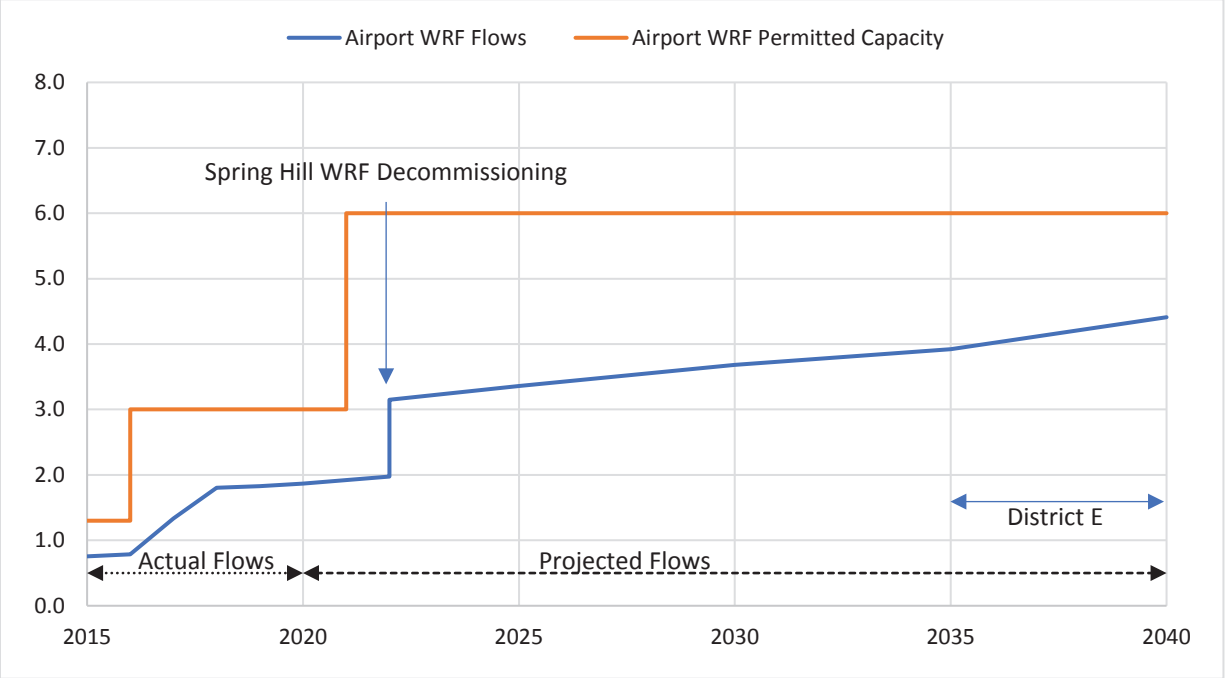


Figure 14 Glen WRF Flow Projections and Permitted Capacity

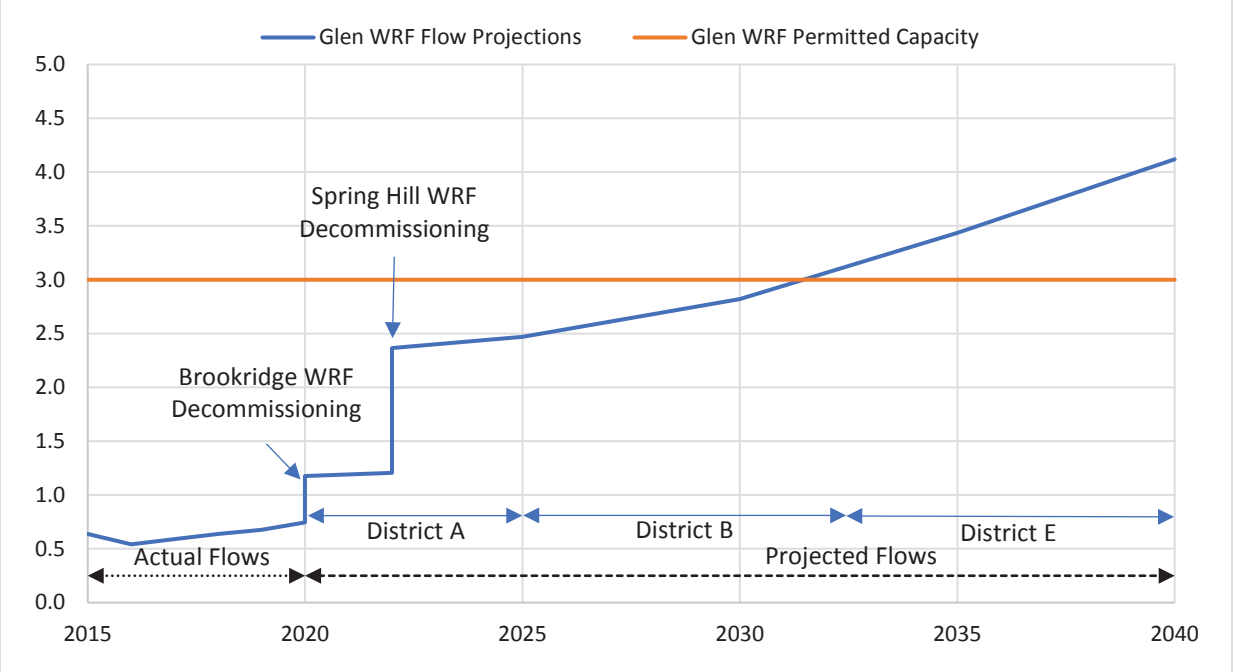
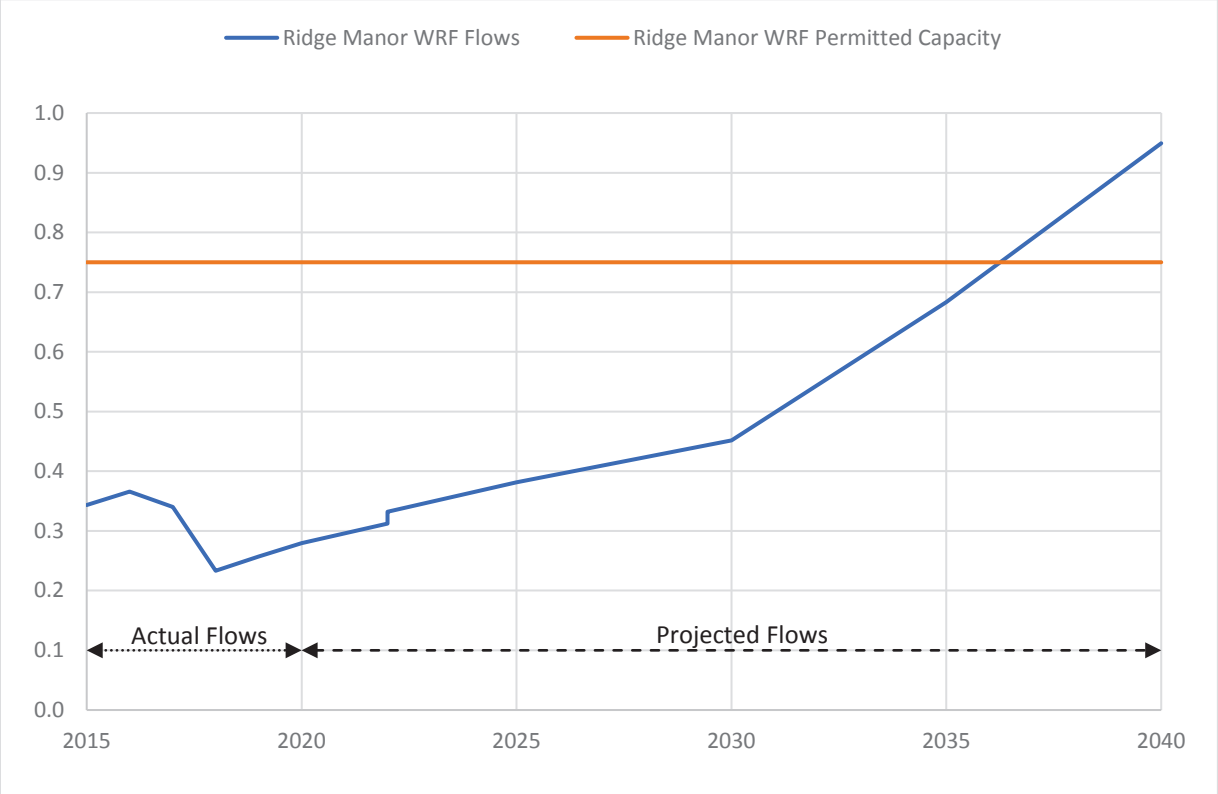


Figure 15 Ridge Manor WWTF Flow Projections and Permitted Capacity



The County has allocated funding and implemented engineering services for planning, permitting, design, and is preparing for bidding and construction phases for the WRFs as summarized below:

- Airport Subregional WRF: The 3.5-MGD AADF Airport WRF will be expanded to a 6-MGD AADF facility and include biological nutrient removal (BNR) improvements to produce a final reclaimed water effluent with a Total-N ≤ 3 mg/L to comply with PFA/BMAP requirements. The County has completed final design, permitting, and bid ready-plans and specifications. The County plans to begin construction in 2021. The construction and commissioning will be completed in 2023. The County has budgeted approximately $30,000,000 for these upgrades to the Airport WRF.

- Glen Subregional WRF: The 3.0-MGD AADF Glen WRF is planned to have BNR upgrades to allow the existing Modified Lutzack-Ettinger configured oxidation ditch plant to produce a final reclaimed water effluent with a Total-N ≤ 3 mg/L to with Weeki Wachee PFA/BMAP requirements. The County has budgeted $5,000.000 for the BNR design, permitting, and construction improvements. The County received FDEP Springs Funding of $3,700,000 for these improvements in 2021. The project is expected to begin in 2021 and be completed in 2023. The WRF design capacity will not be exceeded until 2030, and the County will plan for permitting and expanding as WRF flows and loads increase, in accordance with FDEP requirements.

- Ridge Manor Subregional WRF: The 0.75-MGD AADF Ridge Manor WRF is currently operating at an average annual daily flow of approximately 0.30 MGD. The WRF is outside the PFA and BMAP areas. Based on the growth projected within that sewer service area, it is projected that the design capacity will not be exceeded until 2036. The County will plan for permitting and expanding as WRF flows and loads increase in accordance with FDEP requirements.

In addition to the upgrades to the three subregional WRFs, the County has undertaken major wastewater transmission system improvements to master LSs and FMs to pump and process current and future wastewater flows to the three subregional WRFs. The County's planned 2018 5-Year Capital Improvement Program is summarized below:

1. Project Name: Airport WRF Expansion to 6 MGD

    - CIP Funding: $30,000,000 (with Grants)
    - Project Location: 1400 Downwind Way, Brooksville
    - Project Description: Expansion of the 3.5-MGD wastewater treatment plant to 6 MGD. This expansion includes constructing a new oxidation ditch and anoxic tank, expanding the headworks including adding a second bar screen, new rapid infiltration basins, yard piping, electrical/I&C upgrades, and necessary plumbing. This project includes an alternate septage/vacuum truck dump station. Land acquisition, in the amount of $200,000, is budgeted under Fund 4111, Department 07091, in the Land Acquisition account.

2. Project Name: Anderson Snow Road Force Main Replacement (Airport service area)

    - CIP Funding: $100,000
    - Project Location: Anderson Snow Road, Spring Hill
    - Project Description: Replace 1,000 feet of 3-inch force main with 4-inch diameter FM from the Walmart Neighborhood Store to point of connection at gravity sewer, approximately 1,000 feet.

3. Project Name: Berkeley Manor Flow/Regency Diversion (Glen WRF)

    - CIP Funding: $750,000
    - Project Location: Berkeley Manor/US 19 area/Regency Oaks
    - Project Description: Modify lift stations and install new force main at Regency Oaks lift station to divert wastewater flow to the Glen WRF.

4. Project Name: Braewood MHP Gravity Sewer R&R (Ridge Manor service area)

    - CIP Funding: $1,100,000
    - Project Location: Braewood MHP
    - Project Description: Replace or rehabilitate the Braewood Mobile Home Park Gravity Sewer System

5. Project Name: Brookridge-Glen FM (Brookridge and Glen WRFs)

    - CIP Funding: $2,585,000
    - Project Location: Brookridge WWTF to the Glen WRF
    - Project Description: Construct approximately 17,325 feet of 12-inch FM from Brookridge WWTF to the Glen WRF. Construct a new triplex pumping station.

6. Project Name: Elgin Boulevard Force Main (Airport and Glen WRFs)

    - CIP Funding: $1,400,000
    - Project Location: Elgin Boulevard, Spring Hill
    - Project Description: Install a new 12-inch-diameter PVC sewer FM along Elgin Boulevard from Challenger K-8 school, west approximately 4,100 feet, to the electrical transmission line easement. This project will allow diversion of some sewage flow between the Glen WRF and the Airport WRF, giving HCUD system flexibility.

7. Project Name: Glen WRF Barscreen Replacement (Glen WRF)

    - CIP Funding: $350,000
    - Project Location: Glen WRF, Hexam Road
    - Project Description: Replace the current drum screen with a step screen via design-build delivery. The existing influent screen has reached the end of its useful life.

8. Project Name: Glen WRF Upgrades to Achieve 3 mg/l Total-N (Glen WRF)

    - CIP Funding: $5,000,000
    - Project Location: Glen WRF, Hexam Road

- Project Description: Upgrades to the Glen WRF will be constructed to achieve 3 mg/L Total-N required by State regulations through the Weeki Wachee BMAP.

9. Project Name: Quality Drive LS (Airport WRF service area)

   - CIP Funding: $650,000
   - Project Location: Quality Drive, Spring Hill
   - Project Description: Construct upgrades to Quality Drive LS including new generator.

10. Project Name: Richard Drive/Shoal Line Boulevard Force Main

    - CIP Funding: $900,000
    - Project Location: Weeki Wachee area, from Richard Drive, along Shoal Line Boulevard, to the Cofer Road LS.
    - Project Description: Install a new FM along east and west Richard Drive to allow manhole pumps to pump directly to the next pumping station. This work is scheduled to be done during Department of Public Works repaving work scheduled in FY18/19.

11. Project Name: Spring Hill WRF Upgrades

    - CIP Funding: $500,000
    - Project Location: Spring Hill WRF, Osowaw Boulevard, Spring Hill
    - Project Description: Construct WRF upgrades necessary for operating permit extension.

12. Project Name: Spring Hill WRF Diversion Pipelines and Demolition

    - CIP Funding: $1,100,000
    - Project Location: Spring Hill Drive, West of US 19, Spring Hill
    - Project Description: Install several small FMs needed to divert existing flow away from the 10-inch FM discharging to Spring Hill WRF and demolish the onsite structures after the diversion. Demolition portion of this project will be budgeted in FY 2022 under HCUD's Operating Fund 4111 (Department 07121) in the amount of $400,000.

13. Project Name: SR 50 Eastside Transmission System FM – Ridge Manor to US 301 (Ridge Manor)

    - CIP Funding: $800,000
    - Project Location: SR 50 from Windmere Road to US 301
    - Project Description: Relocate existing FM along SR 50 from Windmere Road to US 301.

14. Project Name: SR 50 Force Main Relocate, Lockhart to Remington (Brookridge)

    - CIP Funding: $175,000
    - Project Location: SR 50, Lockhart Road to Remington Road, Brooksville
    - Project Description: Relocate approximately 2,000 feet of 8-inch-diameter sewer force main from Lockhart to Remington, as part of FDOT construction.

15. Project Name: Stoneybrook FM & LS (Ridge Manor WRF service area)

    - CIP Funding: $900,000
    - Project Location: Stoney Brook Drive
    - Project Description: Relocate FM and replace LS pumps at Stoneybrook.

16. Project Name: Weeping Willow Street FM (Glen WRF)

    - CIP Funding: $2,300,000
    - Project Location: Weeping Willow Street
    - Project Description: Install a new 16-inch-diameter PVC sewer FM from High Point LS to Weeping Willow Street, along Weeping Willow Street to Hexam Road. This project will allow additional flow to be transmitted to the Glen WRF and allow the current 10-inch diameter PVC FM to be repurposed to convey reclaimed water from the Glen WRF to Cortez Oaks subdivision.

11 ENVIRONMENTAL AND ECONOMIC IMPACTS

The Weeki Wachee Springs is an OFS that will receive direct benefits from the reduction of Total-N pollutant loads of 48,707 lb-N per year from the conversion of OSTDS to centralized sewer for Areas 1(A), 2(B) and 5(E). The water quality in the first magnitude springs of the Weeki Wachee Spring Group, the Homosassa Spring Group, and the Chassahowitzka Spring Group has a significant impact on the surrounding communities. This regional effort to improve and protect this crucial natural resource, which affects the ecosystems, marine and wildlife habitats, beaches, coastal wetlands, tourism industry, home values, and overall quality of life.

Afterall, Hernando County is Florida's *Adventure Coast* where you can see live mermaids, learn about Florida wildlife, swim in the pristine waters, or embark on paddling adventures. Protecting Hernando County's historical and natural beauty will ensure that is continues to attract business, residents and eco-tourist to the area.

The efforts made through the septic to sewer conversion will assist in sustaining the quality of Hernando County's natural water resources, ensure a safe water supply, provide a recreational haven, and protect an environmental resource.

A priority of the County's 2040 Comprehensive Plan is to "continue to ensure respect for private property rights," but also to limit sprawl. The Comprehensive Plan would focus growth in urbanized locations near existing infrastructure. Additionally, the Comprehensive Plan seeks "to preserve the existing rural character and lifestyle."

Cumulatively, Nitrogen loading from OSTDS within this springshed results in the significant degradation of groundwater that impacts the Weeki Wachee BMAP area. The 20-year plan proposed in this Report will reduce Nitrogen loading to the springshed from areas with the greatest impact in the near future.

These reductions are necessary to prevent groundwater and surface water contamination to ultimately achieve the TMDL targets and to prevent increases in nitrogen loads from future growth.

12 POTENTIAL FUNDING

The estimated cost to develop centralized sewer service over the next 20 years within the top three selected areas described above is estimated to be $186,000,000. Potential funding for construction of these improvements is planned to be from a variety of sources based on the timing of construction and the availability of the financial resources and include but is dependent on receiving 85% outside funding. Funding for selected projects may also include the use of low-interest loans secured thought the State Revolving Fund (SRF) loan program, utility revenue bonds, FDEP springs grants, funds derived from the Water Infrastructure Finance and Innovation Act (WIFIA) program, developer contributions, potential funds provided through the County's General Fund, and other sources. The repayment of the infrastructure will also be from a variety of sources, including utility rates realized from the addition of the new customers associated with the program, impact and connection fees, infrastructure assessments from the property owners receiving the benefit for regional wastewater service, capital contributions from the General Fund, and other sources.

The objective of the funding plan will be to identify the lowest-cost options available to the County to fund the infrastructure to minimize the economic impact to the customer. As part of the development of the infrastructure funding plan, the County will develop the policies and implementation practices to ensure consistency in extending service to all customers and to provide the basis for the financing of the septic-to-sewer program. Examples of the policies to be considered may include, but not be limited to, the following:

- Adoption of a mandatory connection program and corresponding rate implementation program.
- Development of customer notification and connection policies.
- Basis for customer fee recovery, including costs to be recovered from the properties subject to the centralized sewer service program, method of cost collection such as assessments, capital surcharges, and other methods.
- Time frame allowed for installment payment of any capital costs to be funded by the affected property owners.
- Discounts that may be provided for early connection to the County's regional wastewater system.
- Imposition of impact fees and use and application of the fees to the construction of the centralized sewer system.
- Development of public outreach and information program to notify customers of program effects and to allow the customer to monitor construction and restoration efforts associated with the septic-to-sewer program.

By identifying the program objectives and policies, the County will have a structure that will promote the realization of revenues to fully fund the financing of the infrastructure for the septic-to-sewer program with the ultimate goal of customer affordability.

For District A, the first area to be converted to centralized sewer, the County has developed the following funding plan that is considered affordable cost per resident.

Item	Cost
Estimated Cost per lot	$30,000
Anticipated Grant Offsets	$25,500 (85%)
County Contribution	$1,500 (5%)
Estimated Cost to Resident	$3,000 (10%)

Comments received during the Public Outreach Meeting held for District A indicated that the affected property owners generally support the centralized sewer program and that an estimated cost per property of $3,000 would be reasonable. This initial funding plan will allow the program to be implemented for the benefit of the region. As mentioned in the financial policies, the property owners would like the option to pay their capital contribution on an installment basis to minimize annual costs.

13 SITES NECESSARY TO COMPLETE PROJECT

HCUD identified two of the three identified projects within the SWFWMD grant funding programs. Study Districts 1 (A) and 2 (B) have been submitted in 2019 and have been accepted/prioritized for springs funding. Figures 16 and 17 present the locations for pump stations needed to transmit flows from the newly served neighborhoods to the WRF.

The third Study District selected for implementing a central collection system is Study District 5 (E). Figure 18 presents the pump station locations necessary to collect and transmit wastewater flows from District 5 (E).

14 INTERAGENCY AGREEMENTS AND LOCAL CONTRACTS

The County has an interlocal agreement with Pasco County allowing Hernando County to provide wastewater service to Pasco County residents and businesses along Countyline Road. The wastewater from this area will be treated at the Airport WRF. Appendix E provides the Interlocal Agreement with Pasco County.

Figure 16 District 1(A) Pump Station Site Locations

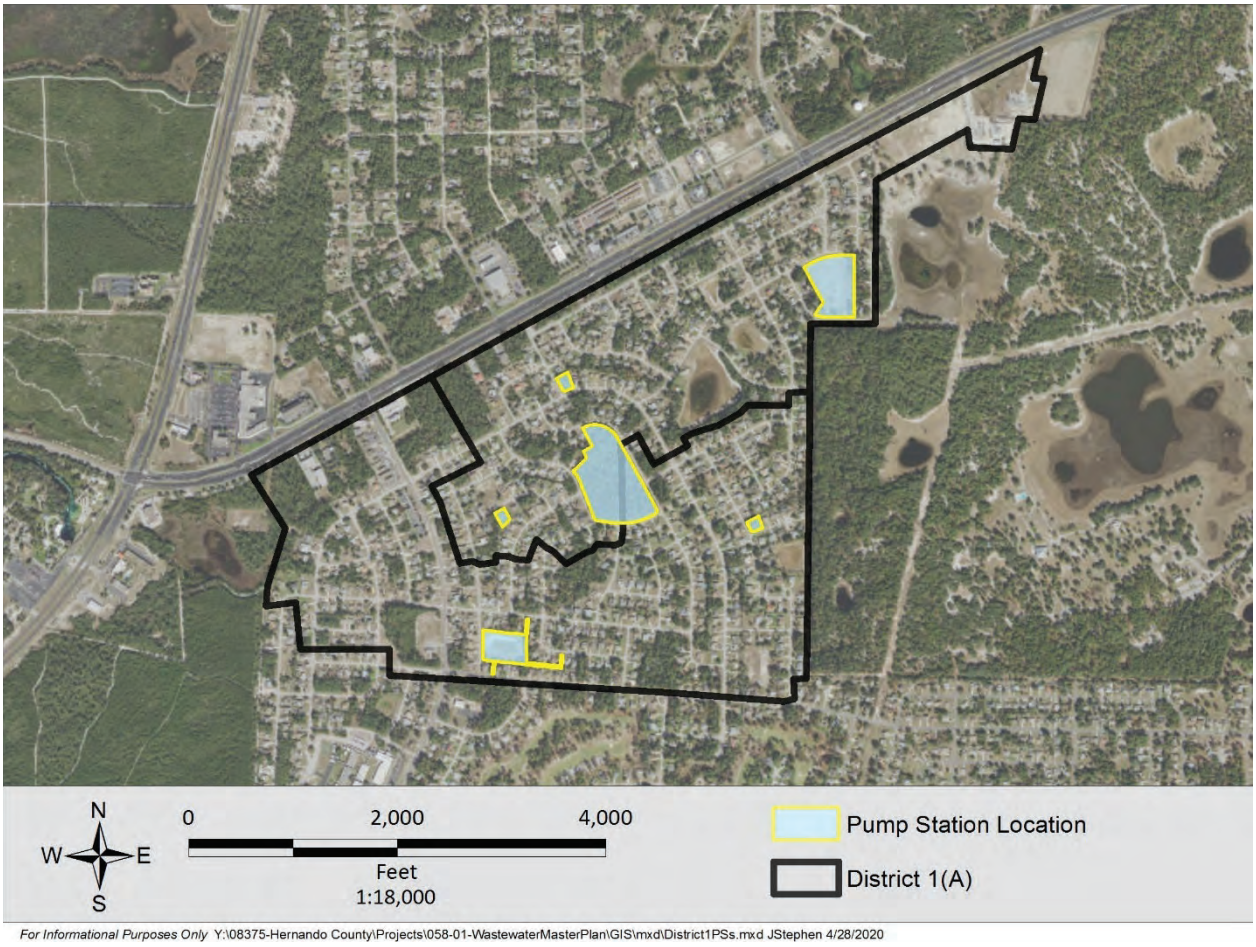


Figure 17 District 2(B) Pump Station Site Locations

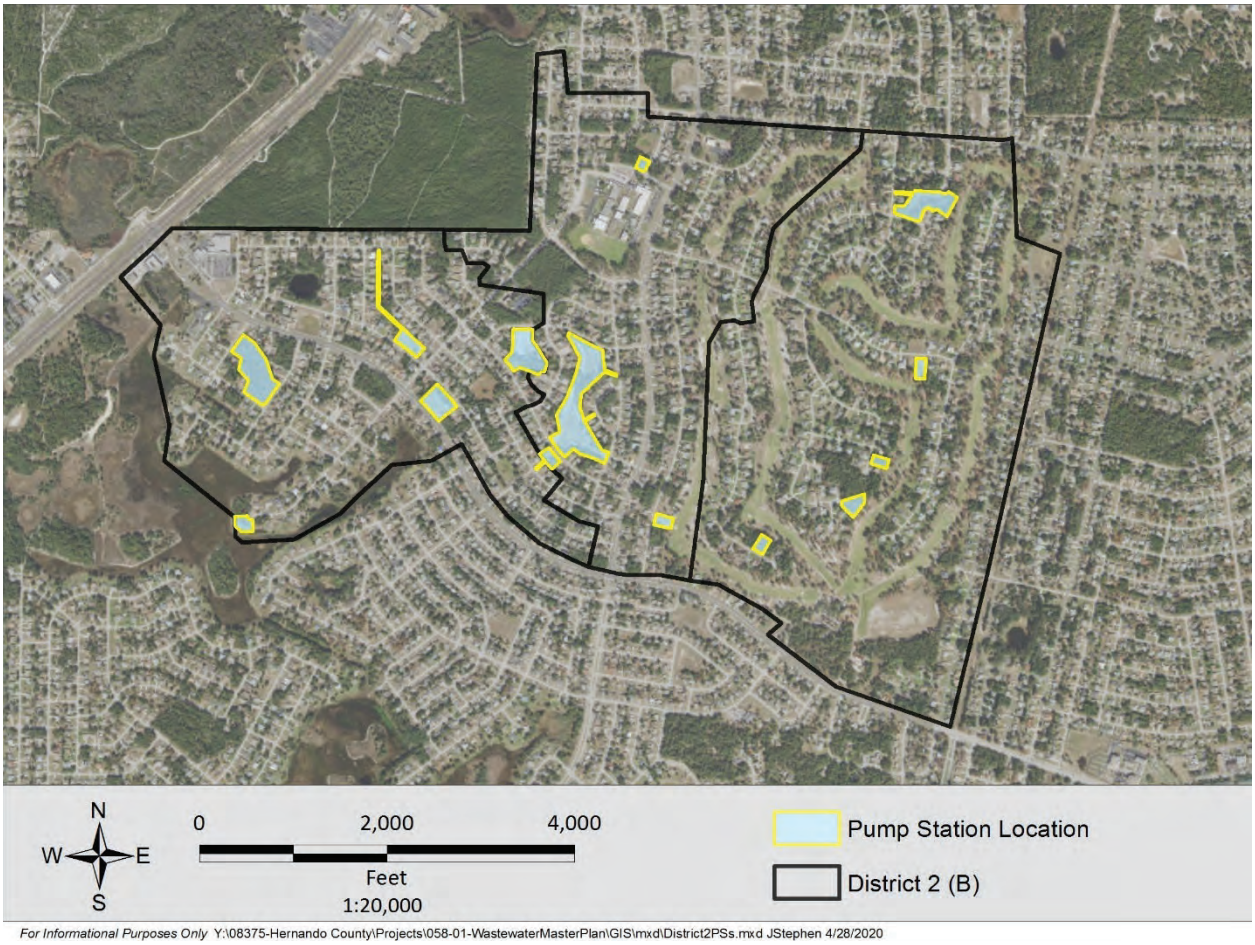
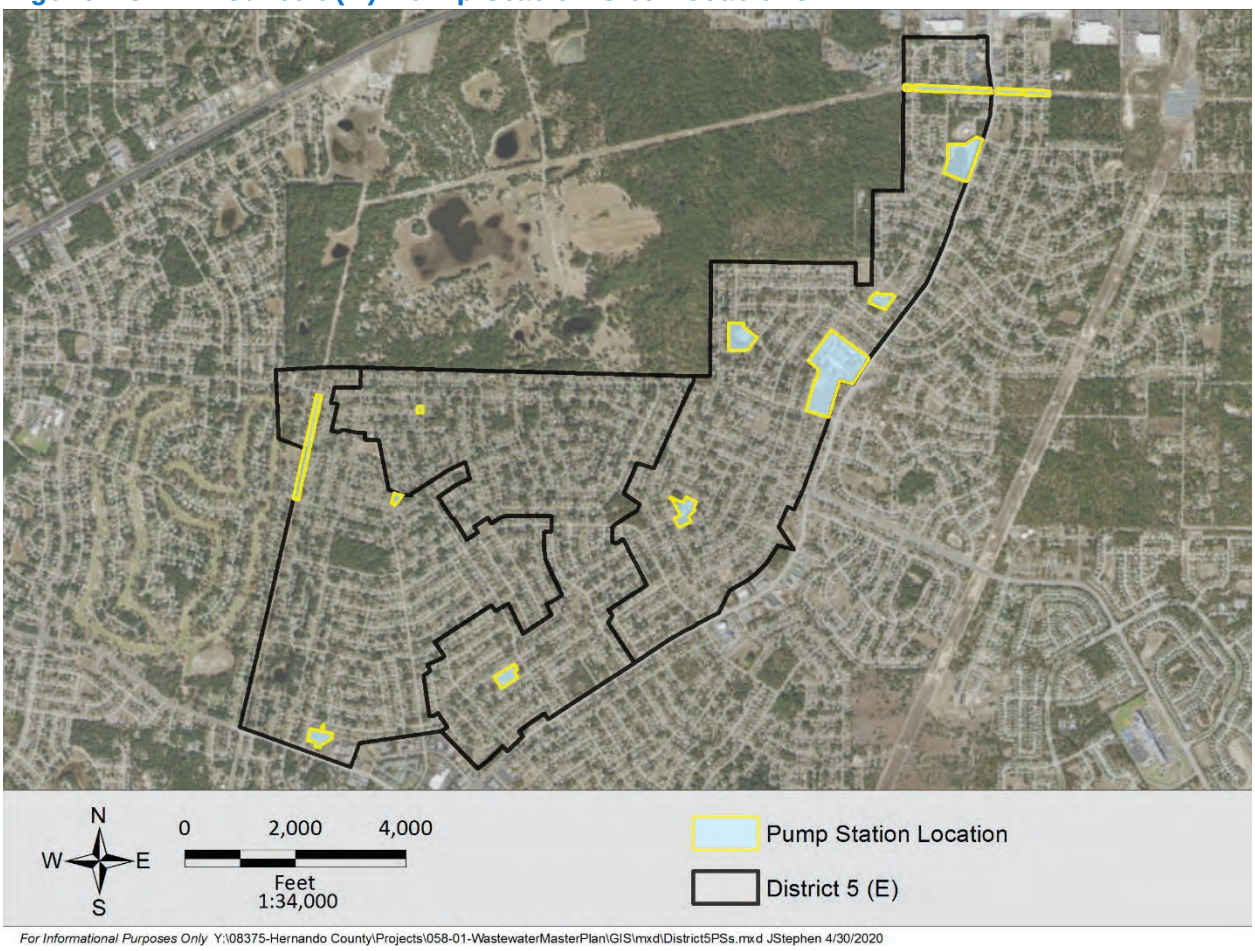


Figure 18 District 5(E) Pump Station Site Locations



Appendix A

Full-Size Figures

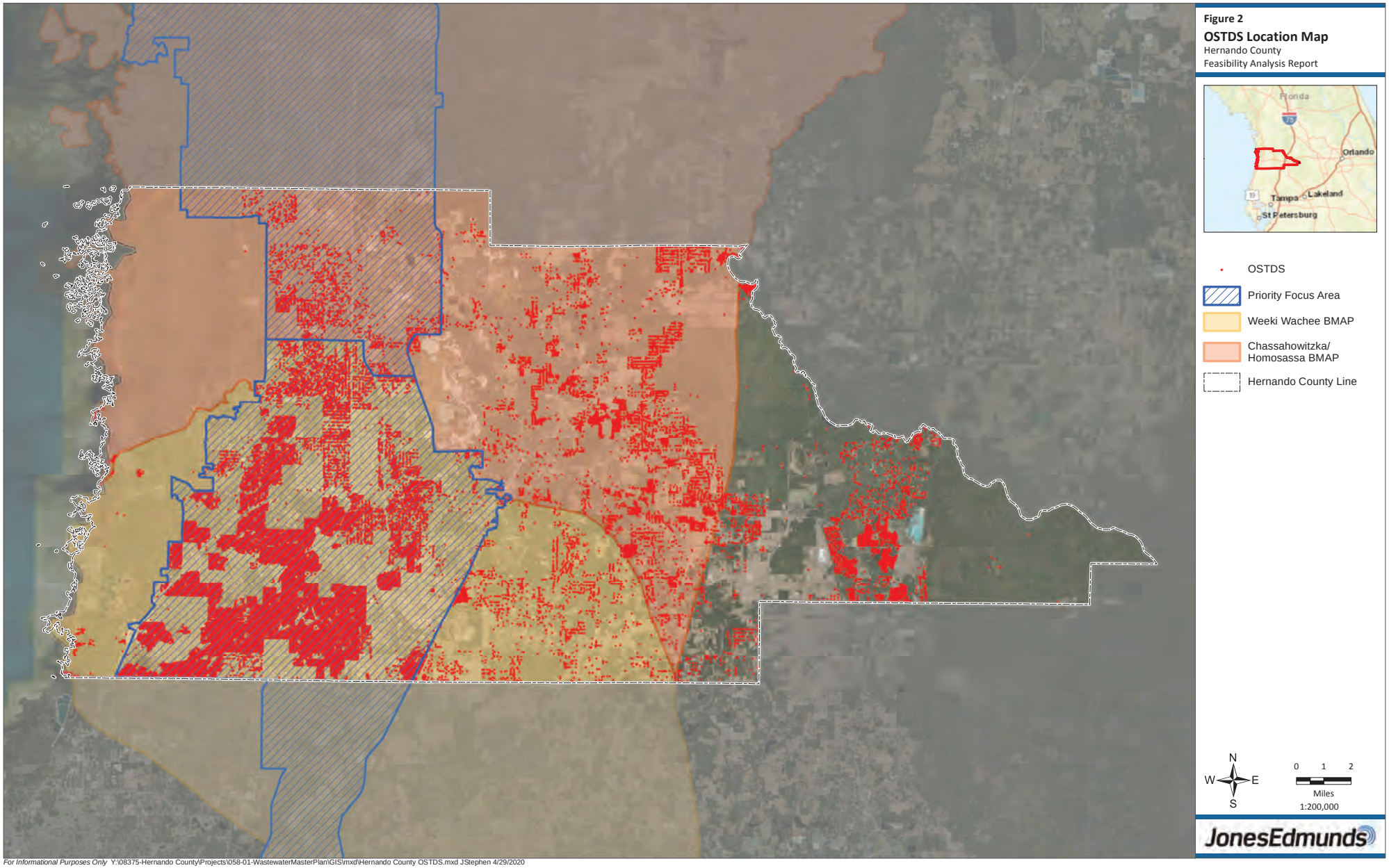


Figure 2

OSTDS Location Map

Hernando County
Feasibility Analysis Report

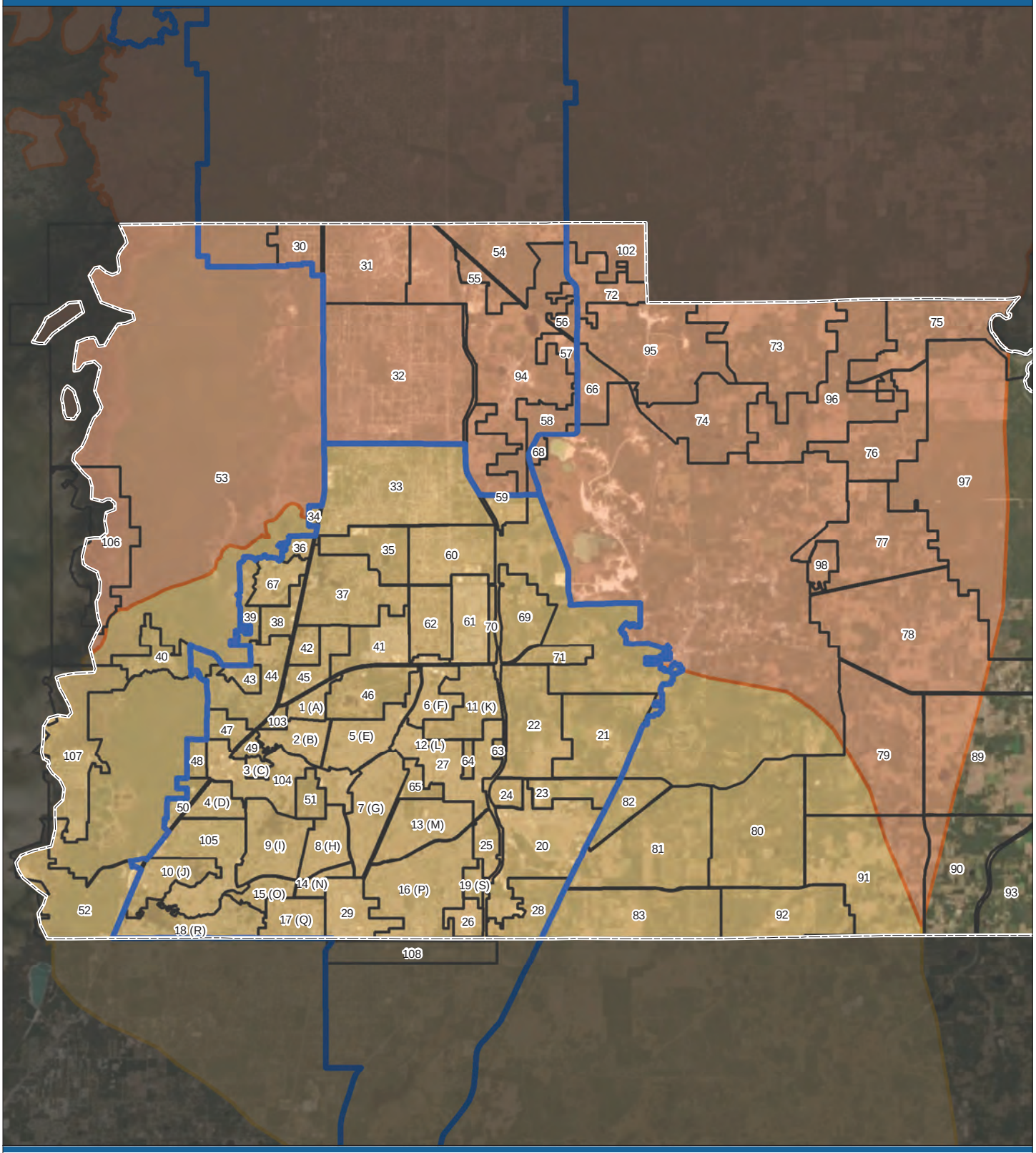
JonesEdmunds

For Informational Purposes Only Y:\08375-Hernando County\Projects\058-01-WastewaterMasterPlan\GIS\mxd\Hernando County OSTDS.mxd JStephen 4/29/2020

Figure 4

Study District Map

Hernando County Feasibility Analysis Report



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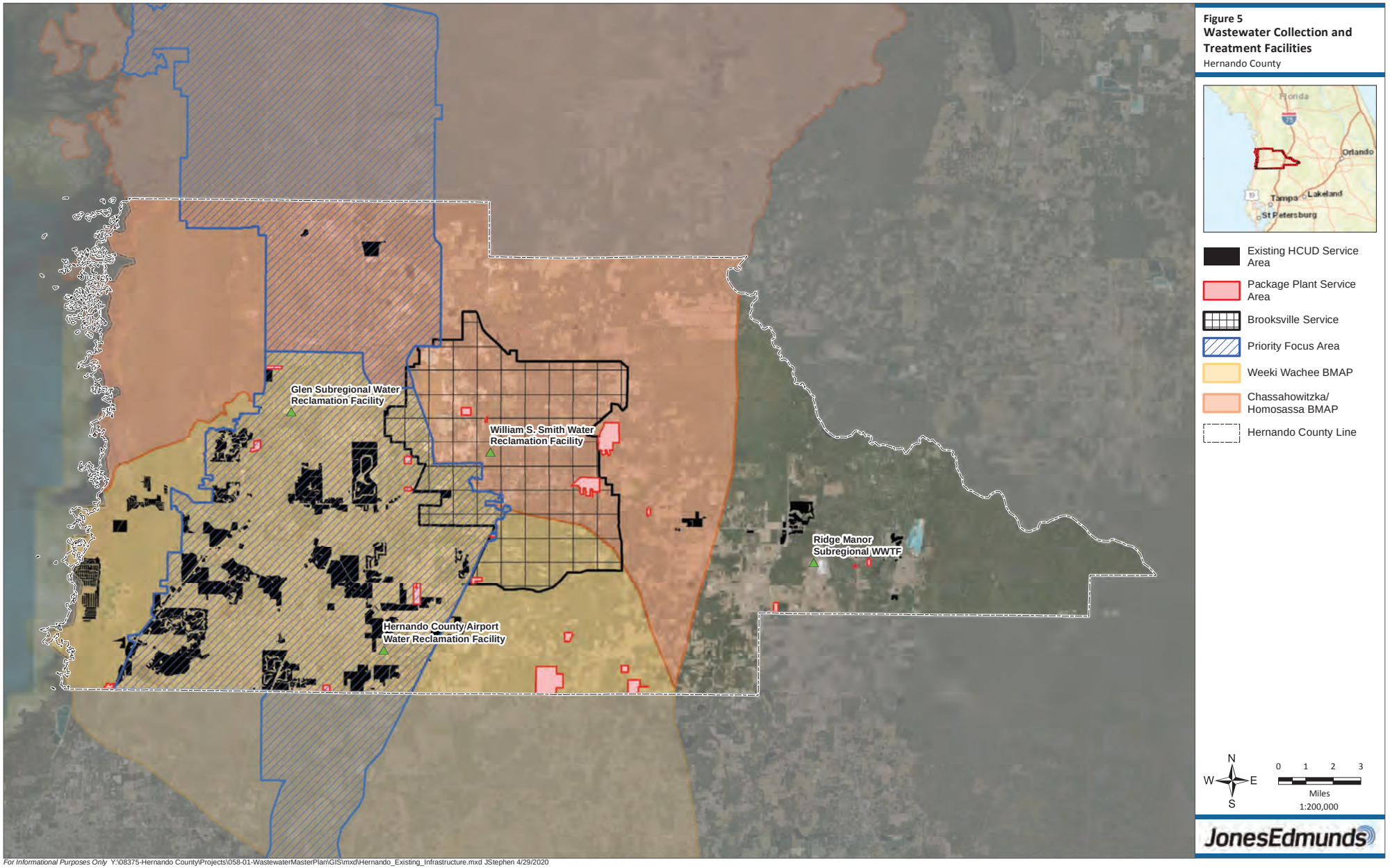

Figure 5
Wastewater Collection and Treatment Facilities
Hernando County

For Informational Purposes Only Y:\08375-Hernando County\Projects\058-01-WastewaterMasterPlan\GIS\mxd\Hernando_Existing_Infrastructure.mxd JStephen 4/29/2020

Figure 7

Weeki Wachee Future Project Areas

Hernando County Feasibility Analysis Report

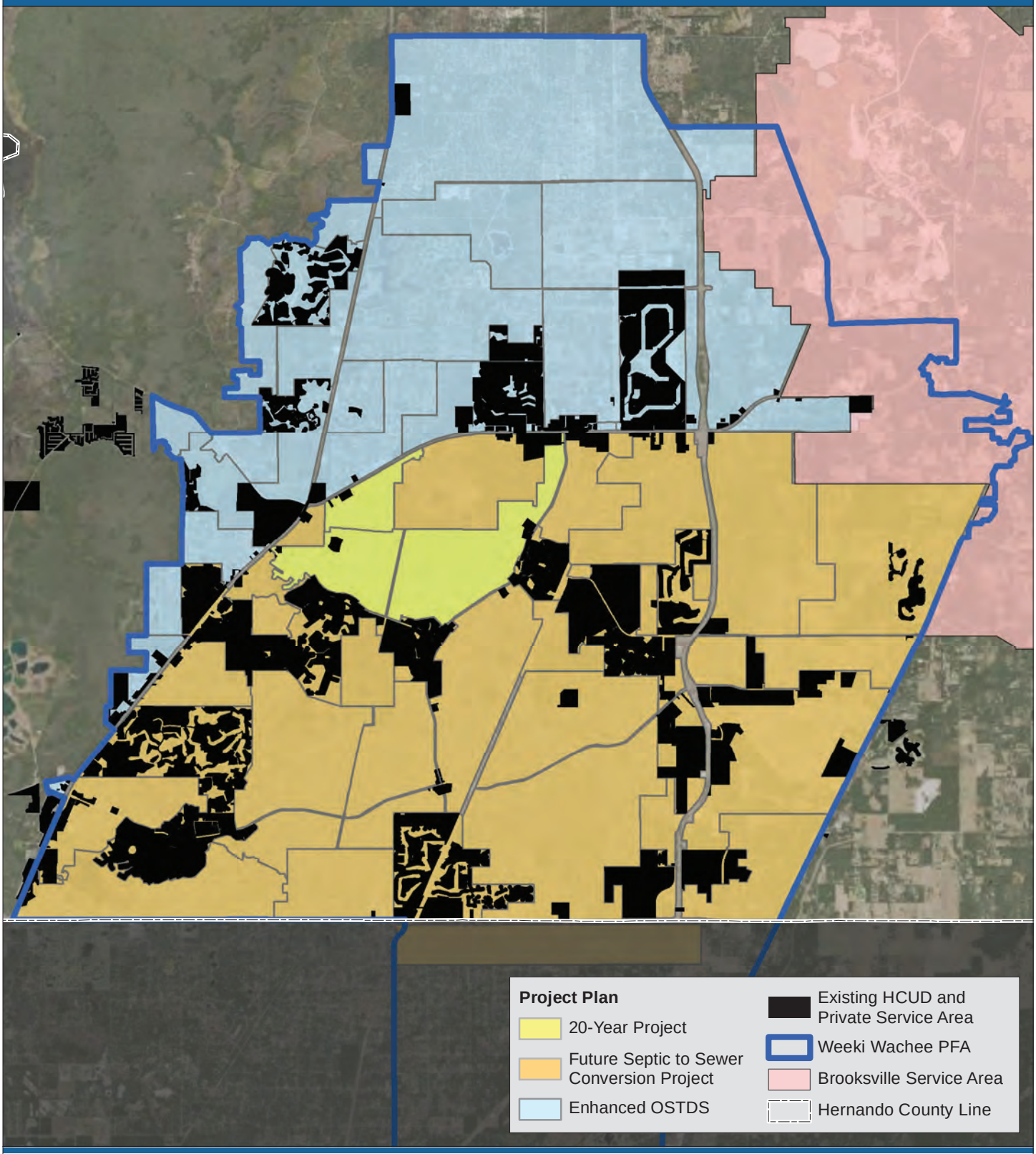

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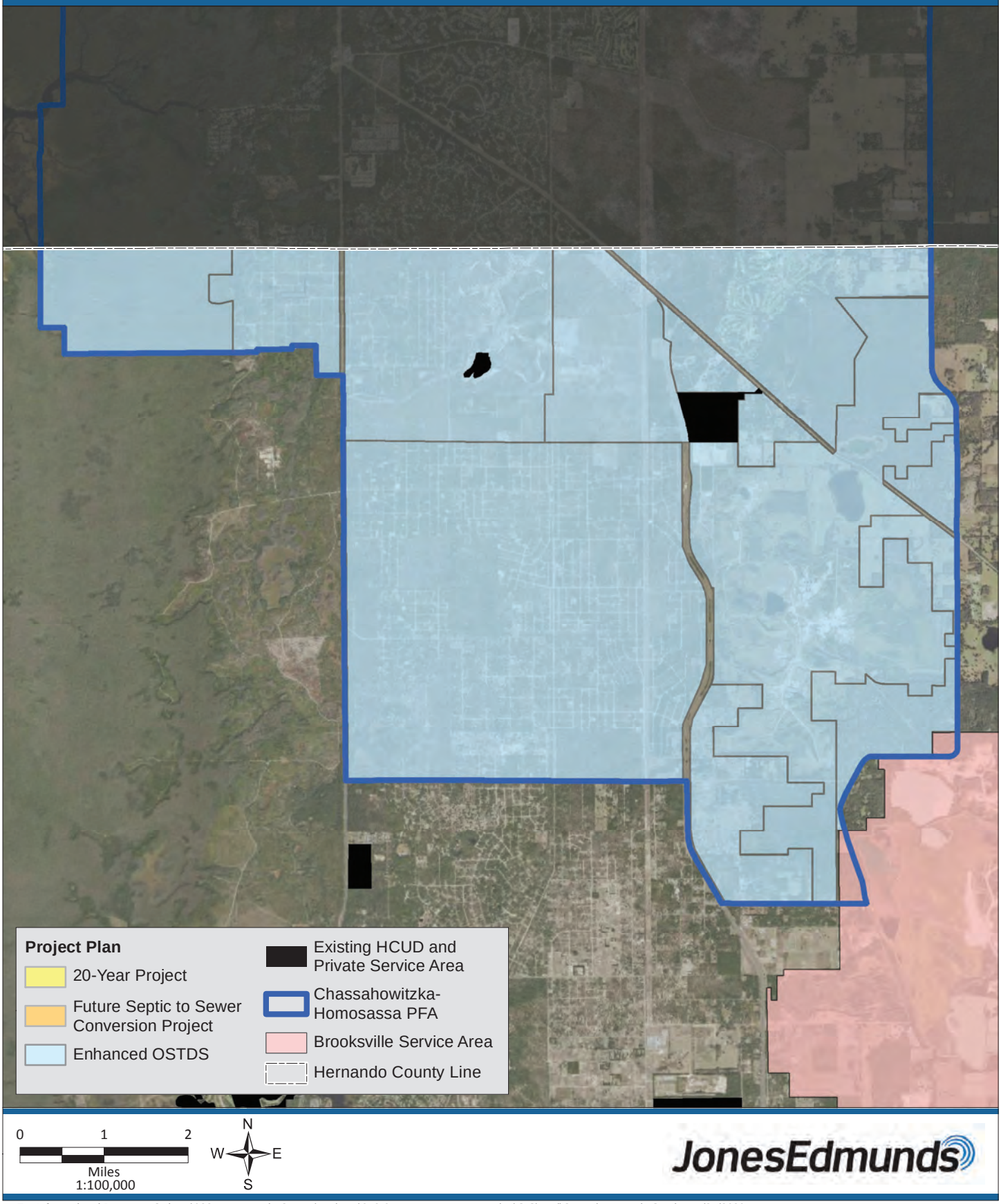
Figure 8

Chassahowitzka-Homosassa Future Project Areas

Hernando County Feasibility Analysis Report



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Appendix B

Summary of Cost Analysis

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Conventional Gravity

GENERAL CONDITIONS

DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
Mobilization, Bond, & Insurance	LS	1	$115,000.00	$115,000
Material Testing	LS	1	$23,950.00	$23,950
Survey Layout / As-builts	LS	1	$27,950.00	$27,950
NPDES Monitoring	LS	1	$15,680.00	$15,680
Erosion Control Installation & Maintenance	LS	1	$17,920.00	$17,920
			SUBTOTAL:	$200,500

PAVING/EARTHWORK

DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
Existing Asphalt Demo and Disposal	SY	23,040	$11.00	$253,440
2" Asphalt Type SP-12.5 Traffic Level C	SY	23,040	$15.75	$362,880
8" Limerock Base LBR 100	SY	24,000	$15.00	$360,000
12" Type B Stabilized Subgrade	SY	26,880	$5.75	$154,560
Pavement/Stripings/Markings/Signage	LS	1	$13,440.00	$13,440
Sod Right of Way	SY	7,680	$4.50	$34,560
Maintenance of Traffic	LS	1	$20,000.00	$20,000
			SUBTOTAL:	$1,198,880

SEWER

DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
8" PVC Gravity Sewer	LF	8,640	$45.00	$388,800
48" Manholes	EA	37	$4,800.00	$177,600
6" Service Laterals w/Clean-out	EA	176	$1,450.00	$255,200
Video, Lamp, Leak Test	LF	8640	$3.00	$25,920
Duplex Pump Station Including 8' Wetwell, valve vault, 60gpm pumps, piping, hardware,electric controls, telemetry, water service & incidentals	EA	1	$150,000.00	$150,000
6" FM to connect to existing System	LF	3000	$40.00	$120,000
			SUBTOTAL	$1,117,520

SUMMARY

GENERAL CONDITIONS……	$200,500
PAVING/EARTHWORK……	$1,198,880
SANITARY SEWER……	$1,117,520
SUBTOTAL SITE COST……..	**$2,516,900**
COST PER LOT…….	**$14,301**

This opinion of probable site construction cost is based on 2019 dollars. Actual cost will depend on labor & material cost, competitive market conditions at the time of bidding, final project scope, and other variable factors not necessarily under the control of Coastal Engineering Associates, Inc. Above costs do not include professional or permit fees,

Prepared by: Coastal Engineering Associates, Inc.
Date: December, 2019

ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

WATER

DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
6" PVC C-900 incl fittings	LF	11,140	$40.00	$445,600
6" Gate Valves	EA	23	$1,200.00	$27,600
Fire Hydrant Assembly	EA	16	$4,500.00	$72,000
Blow Off & Sample Point	EA	10	$1,700.00	$17,000
Residential Meters	EA	128	$450.00	$57,600
Service Laterals	EA	128	$55.00	$7,040
Flush, Chlorinate, Bac't & Pressure Test	LS	1	$5,600.00	$5,600
			SUBTOTAL	**$632,440**
	COST PER LOT…..……..			**$4,941**

CONVERSION COSTS

DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
Abandonment Permit (HC Health Dept)	LS	1	$50	$50
Pump out tank, Collapse Tank, Fill Remaining Hole w/Sand, Sod	LS	1	$850	$850
Route existing sewer to Central System	LS	1	$3,750	$3,750
Restoration (sod and landscaping)	LS	1	$1,100	$1,100
			SUBTOTAL:	**$5,750**

Cost per 1 lot

This opinion of probable site construction cost is based on 2019 dollars. Actual cost will depend on labor & material cost, competitive market conditions at the time of bidding, final project scope, and other variable factors not necessarily under the control of Coastal Engineering Associates, Inc. Above costs do not include professional or permit fees,

Prepared by: Coastal Engineering Associates, Inc.
Date: December, 2019

Planning Unit Analysis

Study Area Data:

Used Pump Station Service Area map.

Removed areas that only serve commercial

Removed areas outside of PFA

Removed areas that serve <10 lots.

Using these areas (green areas in map) calculated the following:

Determine Residential Lots per Pump Station in Study Area:

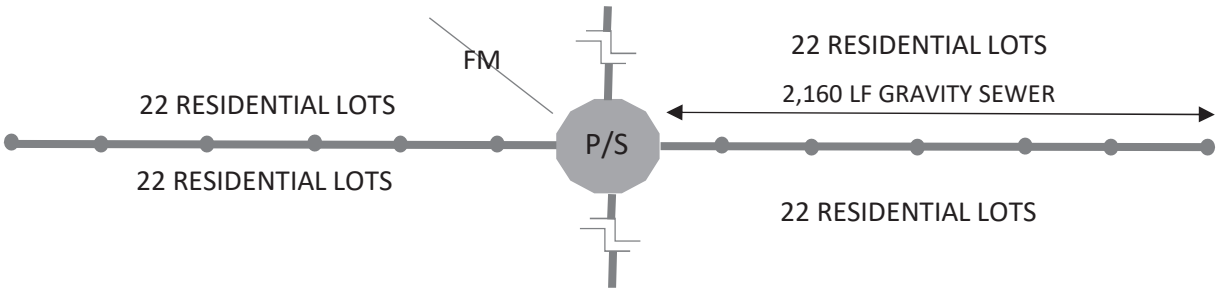
Total # of Lots in Defined Areas:	23,133
Total # of Pump Stations in Defined Areas:	134
# of Lots per pump station:	172.6

Estimate Planning Unit Layout & Infrastructure:

# of Res Lots per Planning Unit Leg:	43.2	Rounded up to 44
Residential lots in Planning Unit:	**176.0**	

Total square footage of all lots:	367,336,524	ft^2
Avg lot size:	0.365	acres
Lot frontage:	89.10	{Sqrt(Totalsqft of all lots/Total # of lots/2)}

Assuming lots are twice as deep as they are wide gives approzimately 90' of frontage



To determine what value to use for the the cost estimate two sets of calculations are made, when possible. The first, called Planning Unit Calcs, is based on the planning unit as depicted above. The second, called Study Area Calcs, is made using the facilities as recorded in County's GIS, .

Calculations are presented either by writing them out or the terms are presented with a letter designation. This letter designation is then used to represent the calculation performed and is shown in brackets to the right of the calculated value.

After one or both calculations were made a final value to use for estimating was determined and is presented in bold below the calculations. The final value used represents either the most reasonable of the two calculations or an estimate based on the calculated value and the Engineer's opinion of a reasonable number based on his experience with these types of projects.

Appendix C

Stakeholder Meeting Materials

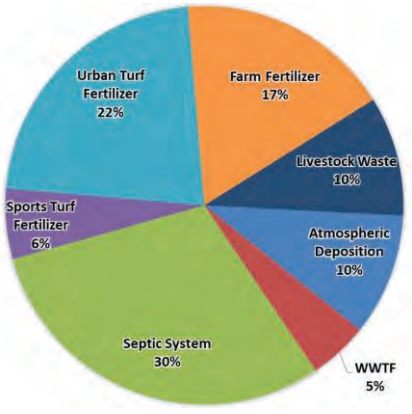
Protecting Our Springs: A Statewide Initiative

Billed as "Florida's most legendary and unique family destinations," Hernando County is home Weeki Wachee Spring, an enchanted spring where you can see live mermaids, take a trip on a river boat cruise, learn about Florida wildlife, and swim in the pristine waters at Buccaneer Bay. You can also embark on a paddling adventure down the pristine waterway of the Weeki Wachee River. Over the years, many of our state's springs have shown signs of significant degradation which has garner the attention of our state leaders who have taken measures to protect the springs throughout the state.

That protection starts with the federal **Clean Water Act** which requires that state environmental agencies to complete **Total Maximum Daily Loads (TMDLs)** for impaired **waters** as determined by the US Environmental Protection Agency (**EPA).** In Florida, this authority has been delegated to the Florida Department of Environmental Protection (FDEP). Over the past several years, the Florida Legislature has been aggressive in requiring FDEP to develop this scientific-based framework to address the degradation of our state's Outstanding Florida Springs.

The driver behind this effort is the 2016 Florida Springs and Aquifer Protection Act created by the Florida Legislature. This Act identified 33 "Outstanding Florida Springs" that require additional protections to ensure their conservation and restoration for future generations. These protections are included in the Basin Management Action Plans (BMAPs) developed in response to the TMDL established for each of these springs. These plans are focused on reducing nitrogen pollution that is impacting the water quality of the springs. Nitrogen from septic tanks and agricultural/fertilizer sources have a greater impact on some springs more than others, so the BMAPs contain a tailored mix of strategies.

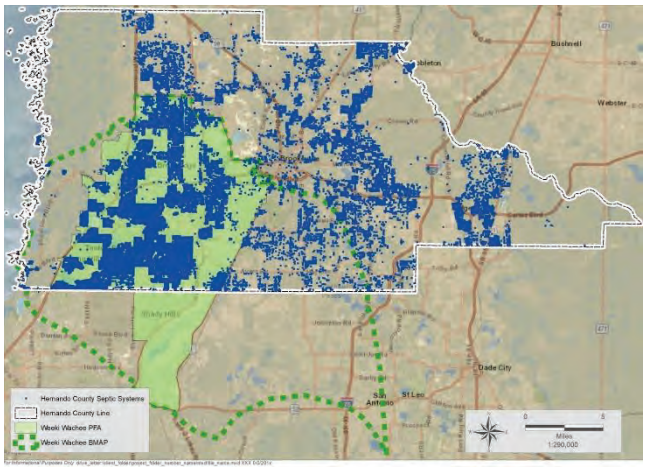
In 2018, the FDEP approved the Weeki Wachee Spring BMAP that laid out the road map to address the nutrient reduction plan for this natural treasure.



Weeki Wachee Spring Nutrient Loading Breakdown by Source

One of the elements of the Florida Springs and Aquifer Protection Act is an Onsite Sewage Treatment and Disposal System (OSTDS, also known as septic tanks) Remediation Plan where the loads from these septic systems have been determined to be more than 20% of the nutrient load. With nearly 35,300 septic systems in the Weeki Wachee Spring system this 20% threshold it well exceeded and FDEP has provided Hernando County a grant to develop the OSTDS Remediation Plan for the spring system. FDEP relies on local input and local commitment to develop the best

alternatives to address the nutrient loading from the septic systems in the Priority Focus Area of the springsheds. Input from local stakeholders in the process include the regulatory agencies (FDEP, SWFWMD, FDOH), the County, local business and industry, agriculture, environmental groups, and our residents. The state statutes require that OSTDS remediation plans contain the following elements.



- An evaluation of credible scientific information on the effect of nutrients, particularly forms of nitrogen, on springs and spring systems.
- Options for repair, upgrade, replacement, drain field modification, the addition of effective nitrogen-reducing features, connection to a central sewer system, or other action.
- A public education plan to provide area residents with reliable, understandable information about OSTDS and springs.
- Cost-effective and financially feasible projects necessary to reduce the nutrient impacts from OSTDS.
- A priority ranking for each project for funding contingent on appropriations in the General Appropriations Act.

We are in the process of developing various alternative scenarios to address the nutrient loads in the Weeki Wachee springshed that will meet the state legislative mandates and regulatory requirements AND best fit our community. We need your input!

After the presentation, please take the time to provide your ideas, concerns and questions. We also request that you fill out a contact sheet so that can follow-up with you as we go through this process.

Thank you!

Rick Kirby, P.E.
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Hernando County Master Wastewater Feasibility Analysis

Stakeholder Meeting
November 7, 2019

HERNANDO COUNTY FLORIDA

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State Goals for Our Water

- What is a TMDL (Total Maximum Daily Load)? Establishes maximum amount of a pollutant that a water body can receive without causing exceedances of water quality standards.
- TMDLs are established for waters that fail to meet water quality standards and characterize how much of each pollutant the water body can assimilate without violating those standards.
- Basin Management Action Plans (BMAPs) are the roadmaps of projects for improving water quality.
- Stakeholders in the process include...
  - Regulatory Agencies (FDEP, SWFWMD, FDOH)
  - Local Government
  - Business and Industry
  - Agriculture
  - Utilities
  - Residents

Florida Springs and Aquifer Protection Act

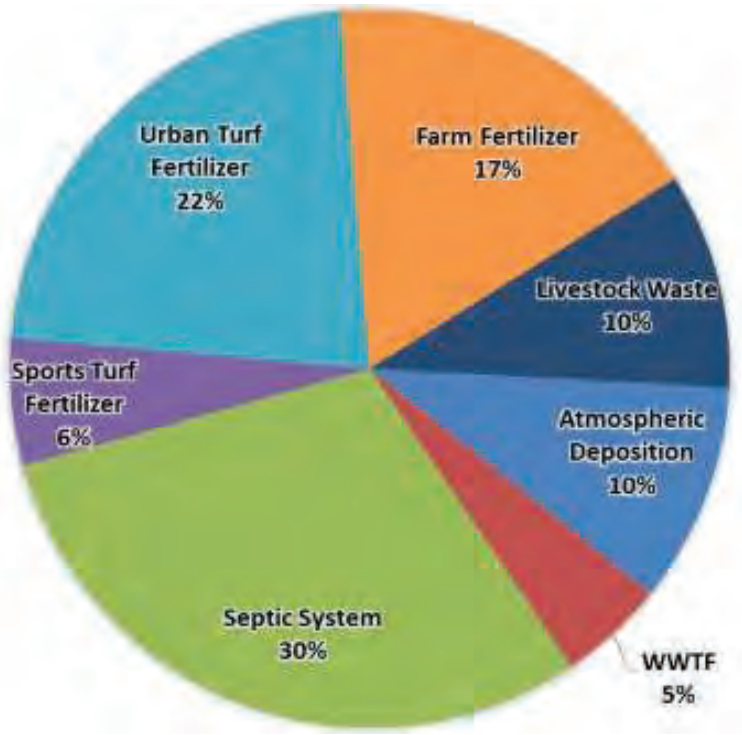
- Requirements of Senate Bill 552

  - TMDL must be established for first magnitude springs by December 2018
  - Priority Focus Areas must be established for all first magnitude springs
  - OSTDS Remediation Plan required for areas where septic systems have greater than 20% contribution (or as FDEP deems appropriate)

Weeki Wachee Springs

- Final TMDL finalized 2014
- Water quality impacts were found
- BMAP finalized June 2018
- PFA established

- Major Nitrogen contributors:
  - Septic Systems
  - Urban Turf Fertilizer
  - Farm Fertilizer



OSTDS Remediation Plan Elements

- An evaluation of credible scientific information on the effect of nutrients, particularly forms of nitrogen, on springs and spring systems.
- Options for repair, upgrade, replacement, drain field modification, the addition of effective nitrogen-reducing features, connection to a central sewer system, or other action.
- A public education plan to provide area residents with reliable, understandable information about OSTDS and springs.
- Cost-effective and financially feasible projects necessary to reduce the nutrient impacts from OSTDS.
- A priority ranking for each project for funding contingent on appropriations in the General Appropriations Act.
- Counties (with funding from FDEP are developing plans).

Bottom Line…Nitrogen Must Be Removed!

BMAP and PFA Boundaries

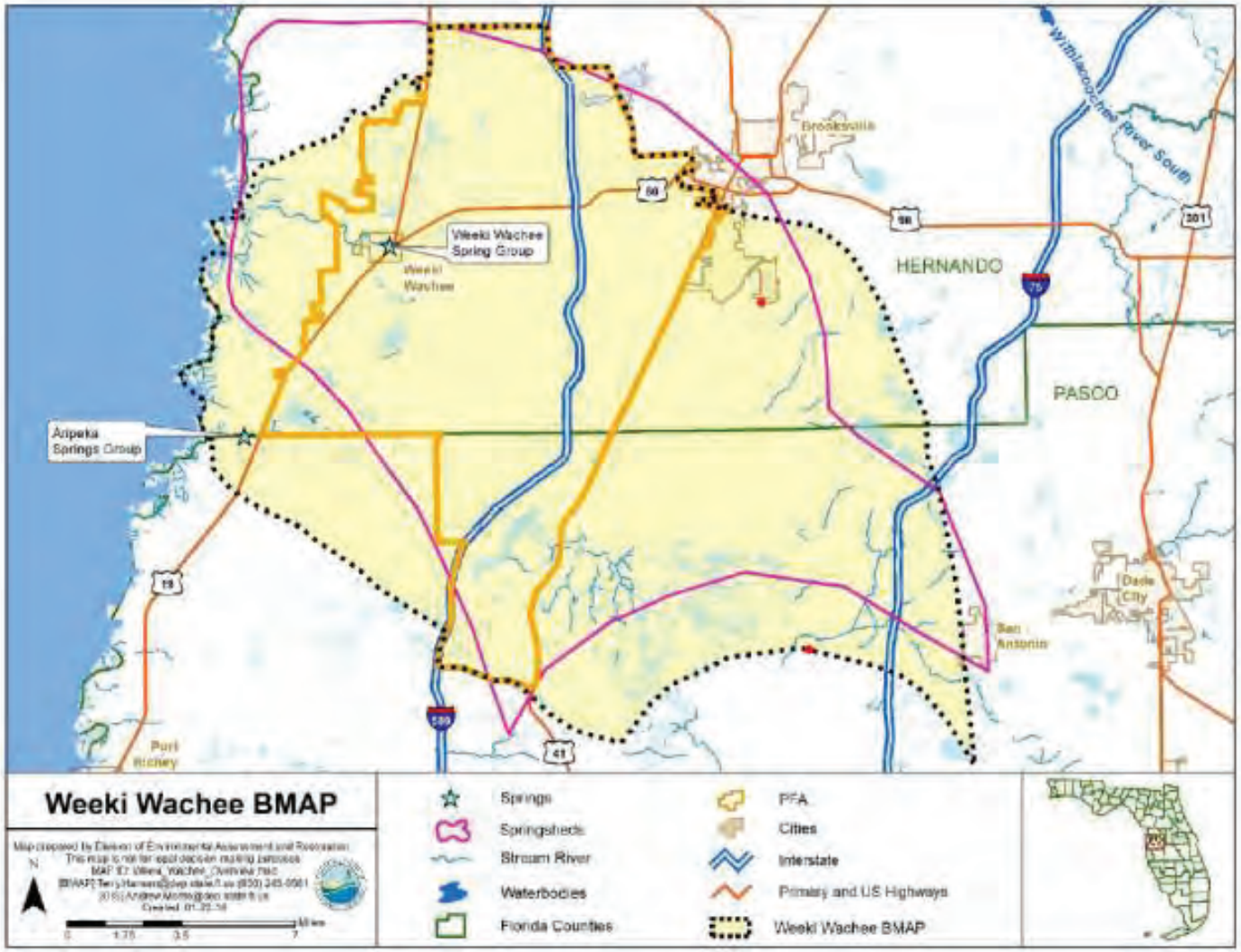
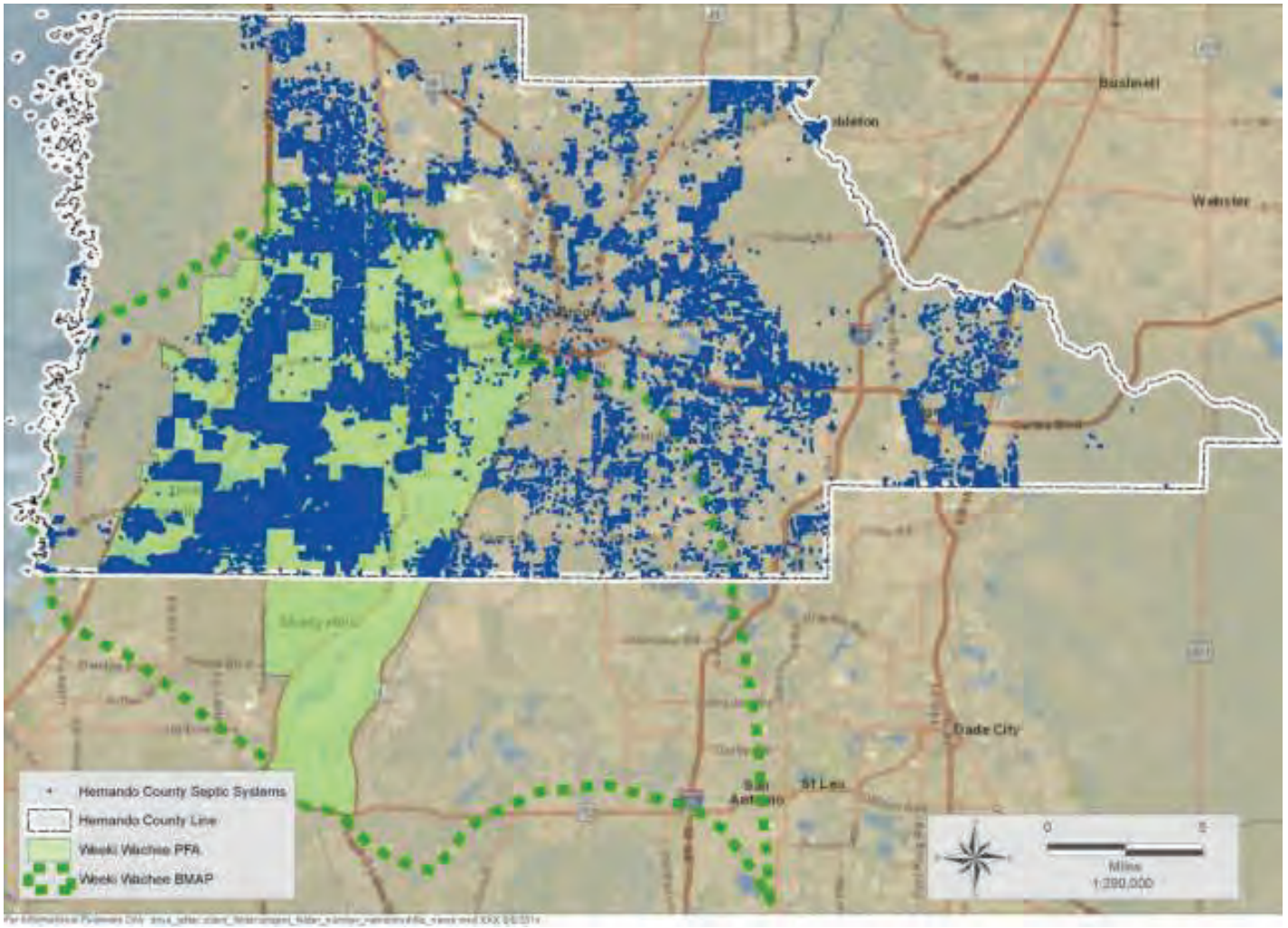


Figure ES-1. Weeki Wachee BMAP and PFA boundaries

Service Area Map



35,297 Septic Tanks in the Priority Focus Area!

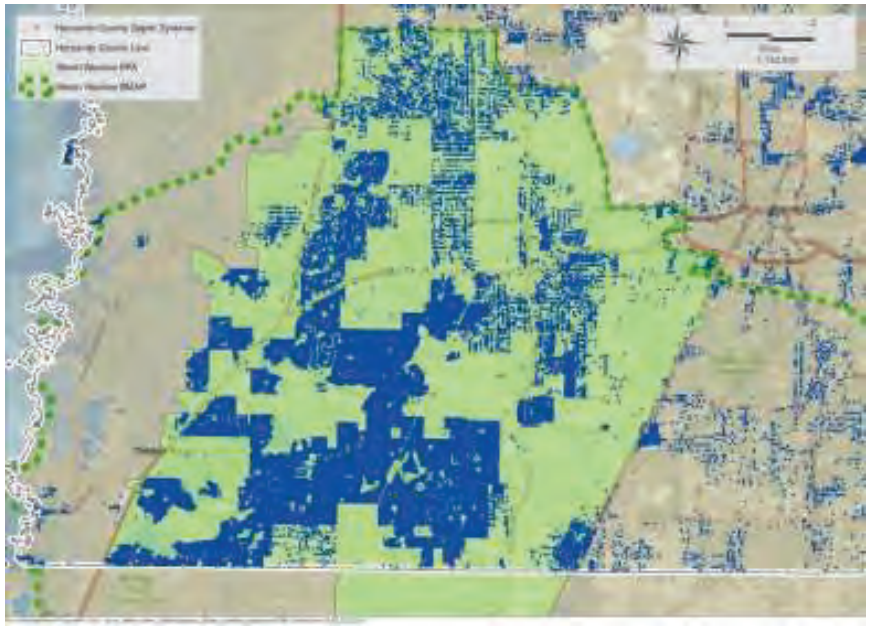
Technical Alternatives

Alternative Technology	Description	Advantages	Disadvantages	Approximate Costs	Other Considerations
Gravity Collection System	Sewage gravity flows from the home through a 4-inch lateral into a gravity collection system typically consisting of 8-inch and larger pipes. The gravity collection system conveys sewage to a transfer lift station that pumps the sewage under pressure to the WWTP.	• Lowest O&M cost • Highest long-term reliability • Homeowner easements not needed	• High capital cost for retrofitting existing neighborhoods • Deeper excavations typically required • High community disruptions to streets, sidewalks, etc. • Higher infiltration potential	• 40-year present worth: $35,000 to $40,000 per ERC • Capital Costs: $25,000 to $30,000 per ERC	• Location of transfer lift stations
High Performance / Enhanced OSTDS	Enhanced OSTDS that achieve higher level nitrogen reduction. FDOH approved systems. Nitrogen-Reducing Aerobic Treatment Units meeting NSF 645 Nitrogen-Reducing Performance- Based Treatment Systems In-ground, passive nitrogen-reducing systems that use additional soil and media layers to reduce nitrogen.	• Treatment occurs onsite without the need for centralized sewer • Potential additional funding may be available	• Operation & maintenance requirements for homeowner including permitting, inspections, electrical connection requirements, monitoring.	• 40-year present worth: $40,000-$50,000 • Capital Costs: $20,000 -$25,000	• Land requirements
Dispersed Sewer Network (DWTS)	Decentralized wastewater treatment systems that remove nitrogen and phosphorus. Use micro-SCADA platform that allows individual systems to be continuously monitored and controlled remotely. Centrally Managed individual Distributed WW Treatment Units located at point of generation.	• Treatment occurs onsite without the need for extensive sewering • Potential additional funding may be available • Remote monitoring and control may allow them to be permitted as Domestic Wastewater Facilities by FDEP • High Nitrogen Removal at 80% to 90%	• Currently being piloted but haven't been installed at utility scale. • Space/property requirements • Improvements on private property – initial capital costs and long-term maintenance • Implication of permitting and regulatory requirements • Homeowner will have to pay electrical costs	• 40-year present worth: $50,000-$65,000 per ERC • Capital Costs: $20,000 -$25,000 per ERC	• Utility or Other Entity responsibility for operation & maintenance of individual units • 2 Existing Pilot Units – one in Volusia County at a Public Park; the other at St. Johns RWMD site. • Operations concerns and issues with seasonal and intermittent use regarding operational permit compliance (Fecal) • Operational Unknowns and Costs Concerns

Initial Results

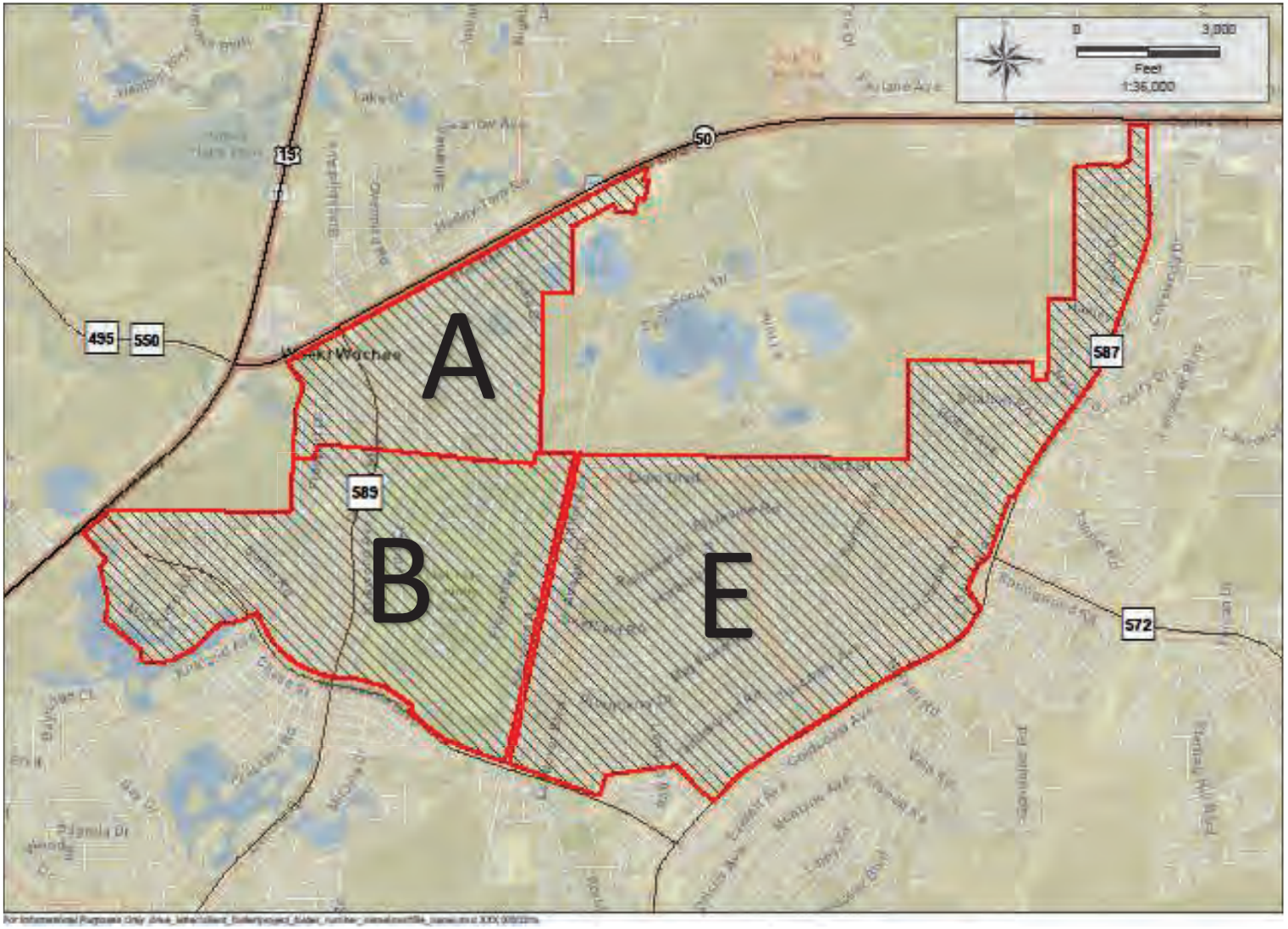
- Early Out Projects Identified
  - Project A
  - Project B
  - Project E

- Applying for Grant Dollars to Minimize Financial Impacts
  - Legislative appropriation
  - Springs Funding
  - SWFWMD Cooperative Funding



Identified Project Areas

“Early Out Projects”



We Need Your Input!

- Current Opportunity-Funding Availability
  - Springs
  - SWFWMD CFI
  - HCUD
  - Property Owner
- Concerns with the Current Plan
- Messaging at Public Meetings

Working Together

- Engage with the County to support improvements in our water quality improvement effort
- Help develop a list of influencers who would appreciate us reaching out to them
- Help educate your circle of influence on the state requirements associated with the Florida Springs and Aquifer Protection Act
- Provide input to the County of how we can improve our communication process

Questions?

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Gainesville • Jacksonville • Sarasota • Tampa
Titusville • West Palm Beach • Winter Haven

JonesEdmunds

MEETING MINUTES – Stakeholder Meeting #1 – November 7, 2019

OWNER/CLIENT: Hernando County PROJECT NO.: 18-R00043/PH PROJECT MANAGER: Richard Kirby

ENGINEER: Jones Edmunds & Associates, Inc. PROJECT NO.: 08375-058-01 PROJECT MANAGER: Thomas Friedrich

PROJECT NAME: Hernando County Master Wastewater Feasibility Analysis

1 INTRODUCTIONS

- Verbal
- Attendee sign-in sheet attached

2 POWERPOINT PRESENTATION

- PowerPoint attached
- Informational handout attached

3 DISCUSSION ITEMS

STAKEHOLDERS' CONCERNS

- Cost – Public will not agree with projects if it impacts them financially.
- Continued proliferation of new septic tanks (i.e. Royal Highlands – it may be easier to sewer the potential 3,000+ OSTDSs in currently undeveloped areas).
- Education of existing and new homeowners. Builders currently feel like they are the front lines of communication without support.
    - Only the newer home builders are impacted currently.
    - The problem of Nitrogen can be difficult to convey and therefore it is hard to get the public to understand the problem (i.e. Septic Tanks influence in nitrogen-limited receiving water bodies leading to algae eutrophication).
    - Even with Realtors disclosure during sales, customers need more information to comprehend the actual fiscal impacts along with the benefits to the advanced septic tanks.

STAKEHOLDERS' QUESTIONS AND COMMENTS

1. For properties smaller than 1 Acre: Builders and HOAs are dealing with upset property owners:

$8,000 to $10,000 more for each advanced septic system unit verses traditional units; only 1 ATU approved for springs area

2. Public Outreach to impacted areas is Priority #1 – A, B, E

- Mailers will be used to help educate owners/renters.
- Address lookup is currently available on the FDEP website to find out whether a property is inside the BMAP/PFA.
- The County's property appraiser website is being considered for use in looking up whether a property is within a septic to sewer project area. Add Phase I properties affected.

3. Has the removal of nitrogen salts (e.g. hydroponic system) been considered as part of this study?

    - A card was given to the Attendee. JE to follow up regarding the technology sited.

4. Health Department required inspections of the HPATU (High-Performance Advanced Treatment Units)

    - HCDOH is required to perform an inspection once per year.
    - The customer must have the HPATU inspected by a private maintenance company twice per year.

5. Centralized sewer was looked at in the 1990's and the cost were thought to be too great even though they were considerably less at that time. The costs have now quadrupled. The problem will continue until something is done about it.

- The FDEP has provided funding for the County to take the lead in responding to the legislative requirements and figuring out the most cost-effective way forward for Hernando County through this project.
- This project includes an education campaign to help to get the public to understand the scope of the problem.

6. What funding mechanisms are available?

    - Clean Water State Revolving Fund (SRF) - provides low-interest loans for planning, designing, and constructing water pollution-control facilities.
    - Federal Clean Water Act Section 319(h) Grants – Non-point Source Management Section administers grant money it receives from the US Environmental Protection Agency (EPA) and provides grant funds to implement projects that reduce nonpoint sources of pollution. Projects must include at least a 40-percent non-federal match (SRF loan can be used as non-federal match).

    - SWFWMD provides funding for projects that improve water quality or nutrient-loading reduction. The program provides cost-share funding for septic to sewer projects.
        - Cooperative Funding Initiative - program allows local governments to share costs of up to 50 percent that help create sustainable water resources, including septic conversion to sewer.
        - Septic Upgrade Incentive Program - provides residents up to $10,000 per system within the Priority Focus Areas (PFAs). The subsidies are available for payment directly to pre - approved septic system installers and licensed plumbers.
        - State Springs Funding – In 2019, $50 million in grants were budgeted for the restoration Florida's springs.

    - Legislative appropriation –
        - Senator Simpson to become the leader this coming cycle and the County will have a very "Influential" person to gain support and funding.

7. Concerns for providing new sewer service to existing properties.

   - The public will not want sewer and they will not appreciate having their roads torn up.
     - Under the current rules: an area resident applying for a new construction permit in the PFAs on lots with a size of less than one acre has the following options:

       (1) connect to available sewers or,

       (2) install a conventional non-nitrogen-reducing OSTDS if the utility has identified the property as being within a BMAP-listed septic-to-sewer project or,

       (3) install a nitrogen-reducing OSTDS such as, “In-ground, passive nitrogen-reducing systems” that use additional soil and media layers to reduce nitrogen flow into the aquifer, or nitrogen-reducing Aerobic Treatment Units (ATUs) and Performance-Based Treatment Systems (PBTS).

   - Why not sewer Royal Highlands Areas as it has not yet been developed and is in the PFA: Does it make sense to have 3,000 new septic tanks.
     - The County is evaluating all County areas for septic to sewer conversion and will plan to convert the project areas that provide the most nitrogen reduction for the value.

8. Public Information (Ideas/Problems):

   - FAQs should be available for the public.
     - The County has information on its website and has an existing public outreach campaign on social media outlets.
   - Cost for homeowners.
     - Part of the public outreach in this project is to help educate the public on the costs of complying with the Springs Legislation.
     - The Feasibility Study looks for the most efficient and effective way to educate community members.-
   - Website for – Property Appraiser and Realtors – #1

9. Types of FDEP Funded Septic Systems upgrades (either ATU vs. Passive Drainfields Treatment).

   - ATU
     - Requires Operating Permit
     - Requires a similar foot print traditional septic system (i.e. this upgrade will easily fit on less than 1-acre lots).
   - Passive In-Ground “Modified Drainfield
     - No Operating Permit.
     - Has a larger footprint and may be difficult to install on small lots (“Large swimming pool dig”).

10. Home Builders often field questions from land owners/buyers on costs.

- What are Impact Fees?
- What are the costs to Sewer?
- Gravity Cost: $30,000 / lot (includes all on/off lot costs)

$15,000 – FDEP (50%)
$ 7,500 – SWFWMD (25%)
$ 1,500 – HCUD (5%)
80% Funded; Homeowner: $6,000

Area A: 900 units; Phase 1 in Area includes ~450 units

Appendix D

Public Meeting Materials

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HERNANDO COUNTY FLORIDA

Coastal engineering associates, inc.
Engineering Planning Surveying Environmental Transportation Construction Management

ATTENDEE SIGN-IN SHEET

PURPOSE OF MEETING: Workshop 7 DATE: February 4, 2020

LOCATION OF MEETING: Boy Scout Facility, 11210 Cortez Blvd, Brooksville, Fl 34613 TIME: 4:00 PM

PROJECT NAME: Wastewater Master Plan

	NAME AND TITLE (PLEASE PRINT)	COMPANY AND ADDRESS	PHONE NUMBER AND EMAIL
1	Cloyd E Miller	6029 Mount Ave Spring	PHONE: 352-5619 EMAIL:
1	H Wayne Lindsey	6365 Freeport Dr Spring Hill	PHONE: 315-486-2712 EMAIL:
2	Dennis & Joy Malick	6402 July Ave. Spring Hill FL 34608	PHONE: 3526008516 EMAIL: JJYMalick@gmail.com
1	Amanda Reilly	900 Helene Way Weeki Wachee FL 34613	PHONE: EMAIL:
1	M. Marcano	6377 Freeport DR Spring hill 34608	PHONE: EMAIL:
1	G. Mecher	9525 Montebello Ln SH FL 34608	PHONE: 352-584-2844 EMAIL:
2	Richard & Gail Bradtmuller	6380 Evard Ave SH FL 34608	PHONE: 352-596-4371 EMAIL: RBRADTMU@TAMPABAY.RR.COM
2	Jim & Diane Bailey	6128 Nantucket Lane Spring Lake FL 34608	PHONE: 352-667-2529 EMAIL: Glory B3040@gmail.com
			PHONE: EMAIL:

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HERNANDO COUNTY FLORIDA

Coastal engineering associates, inc. Engineering Planning Surveying Environmental Transportation Construction Management

NAME AND TITLE (PLEASE PRINT)	COMPANY AND ADDRESS	PHONE NUMBER AND EMAIL
Stephen Brown	6081 Mountain Way Ave Spring Hill, FL	PHONE: 352 515-1111 EMAIL: brownsteve32@yahoo
Mike Johnson	6353 Freeport Dr. Spring Hill Fl 34608	PHONE: 315-247-6940 EMAIL: MJOHNSONFLS6353@GMAIL.com
Timothy Rybinski	10277 Noddy Tern Weeki Wachee, FL 34613	PHONE: 910-478-6263 EMAIL: capt_ribeye@yahoo.com
Don Pellerin	6402 Hazelwood Rd Spring Hill	PHONE: 978-551 5279 EMAIL:
Jim Corder	11153 Elgin Blvd	PHONE: 7039899080 EMAIL:
Paul Relkin	10229 Norwick St	PHONE: 352 5973108 EMAIL:
Kathryn Barefoot	6126 DeHona	PHONE: 352-596-7945 EMAIL:
Michelle Sawyer	10303 Norwick St. Spring Hill 34608	PHONE: 352-513-3369 EMAIL:
John Bowdoin	10070 Langan St.	PHONE: 352 428 5985 EMAIL:
Carlene Bowdoin	10070 Langan St.	PHONE: 352-428-5234 EMAIL:

JonesEdmunds | Hernando County Florida | Coastal engineering associates, inc. — Engineering, Planning, Surveying, Environmental, Transportation, Construction Management

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PROJECT NAME: Wastewater Master Plan

	NAME AND TITLE (PLEASE PRINT)	COMPANY AND ADDRESS	PHONE NUMBER AND EMAIL
1	BRENDA FREKSEY	6195 FREEPORT DR SH Hill FL	PHONE: 352-596-9614 EMAIL: MAMMIES7@yahoo.com
2	Stephanie + Mitchell Townsend	7648 Cortez Blvd Weeki Wachee FL 34607	PHONE: 352 610 3601 EMAIL: memos310r@gmail.com
1	JOSEPH T Scotti	6390 ELDARO AVE SPRING HILL 34608	PHONE: 352-597-1981 EMAIL:
2	Karl/Jennifer Segham	6291 LORRAINE LN SPRING HIL, FL 34607	PHONE: 442-5420 EMAIL:
1	Chuck Morton	6991 E Richard Dr Weeki Wachee FL 34607	PHONE: 352-549-4584 EMAIL: Swampolad@outlook.com
1	DAVID Wilcox	11310 Carrollwood Dr TAMPA FL	PHONE: 813-865-9229 EMAIL: KC-Davey@yahoo.com
1	Bernadette Alicea	10285 Lynnhaven Rd	PHONE: 352-397-9879 EMAIL: Sweetitangel93@yahoo.com
1	JUNE O'CONNOR	6223 FREEPORT DR	PHONE: 352-652-0056 EMAIL:
1	REBECCA McKinney	6395 Hazelwood	PHONE: 3524424839 EMAIL: schipkees65@gmail.com

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HERNANDO COUNTY FLORIDA

Coastal engineering associates, inc.
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	NAME AND TITLE (PLEASE PRINT)	COMPANY AND ADDRESS	PHONE NUMBER AND EMAIL
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1	Eugenia Wood	6365 EVARO AVE S/H 34608	PHONE: 352 428-4627 EMAIL: JeAnsgdFellet Mail.com
1	LEON F TARENT JR	6391 EVARO AVE S H 34608	PHONE: 352 596 5001 EMAIL: TLC70c@Tampabay.RR.com
2	Ed + Barbara Cardoza	6257 Lorraine Ln S.H. 34608	PHONE: 401-648-1223 EMAIL: bjecard@gmail.com
1	Celeste Lyon	FDEP	PHONE: 850-245-8652 EMAIL:
1	Tom Pellito	6224 Freeport Dr. SH FL 34608	PHONE: EMAIL: tpellito@gmail.com
2	+ Neighbor Karlene Nordgren	16238 Powell Rd Brooksville 34604	PHONE: EMAIL:
2	Michelle + Tony Coelho	6588 Freeport Dr	PHONE: COELHO2003@yahoo.com EMAIL:
2	CARL STURGEON / CHERIE MILBURN	9635 JEFFERS ST. SPRING HILL	PHONE: EMAIL:
			PHONE: EMAIL:

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HERNANDO COUNTY FLORIDA

Coastal engineering associates, inc.
Engineering Planning Surveying Environmental Transportation Construction Management

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CARY MERCER	10053 Elgin Blvd	PHONE: EMAIL:
Barb Dindl	11075 Gifford Dr.	PHONE: EMAIL:
Karin Cyno	DEP	PHONE: EMAIL:
WKY Thompson	10199 NORWICK ST	PHONE: 352 397 7151 EMAIL:
		PHONE: EMAIL:
		PHONE: EMAIL:
		PHONE: EMAIL:
		PHONE: EMAIL:

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: CHERIE MILBURN

Address: 9635 JEFFERS ST.

Email: C2MOTORMOUTH@AOL.COM Phone: 813-310-6634

Comments 1- BIGGEST CONCERN IS FOR FOLKS THAT MAY HAVE JUST REPLACED THEIR CURRENT SEPTIC SYSTEM.

2- COST SHOULD BE SOMEHOW CREDITED?

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Charles Morton

Address: 6991 E. Richard DR

Email: Swampdad@outlook.com Phone: 352-549-4584

Comments I've been involved with this issue for 20+ years As a REALTOR - I have encouraged Legislation for a Septic Inspection at Sale to be sure it is OK. There are already Expenses involved so this would be an anticipated inspection & possible Remediation Expense

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: GARY MECHLER

Address: 9525 MONTEBELLO LN 34608

Email: _____ Phone: 352-584-2844

Comments PLEASE NOTIFY ME WITH ANY INFORMATION/ MEETINGS IN THE FUTURE.
THANK YOU FOR ALL THE INFORMATION PRESENTED HERE TODAY.

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Tom Pellito

Address: 6224 Freeport Dr.

Email: tpellito@gmail.com Phone: _____

Comments

- I read that there are DOT grants to fund the construction of sidewalks on my street in the near future. Will these two projects coincide or effect each other?

- Also, the timing of essentially an upcoming $3000+ tax is not good when property taxes increased 14% and Ingoglia can get undervalued land for some reason.

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: RICHARD & GAIL BRADTMULLER

Address: 6380 EVARO AVE

Email: RBRADTMV@TAMPABAY.RR.COM

Phone: Home 352-596-4371
cell 352-263-7051

Comments VERY supportive of PROJECT

PLEASE KEEP UP POSTED

ALL FOR STARTING SOON TOO.

ONLY CONCERN IS A 40 YEAR TREE IN FRONT YARD

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Jim Bailey

Address: 6121 Nantucket Lane

Email: glory b3040@gmail.com Phone: 352-667-2529

Comments Open house is very informative
If sewer are installed it will help everyone.

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Rebecca A McKinney

Address: 6395 Hazelwood Rd Spring Hill FL 34608

Email: schipkees65@gmail.com Phone: 352.442.4839

Comments It sounds like the centralized sewer system is the best plan.

Thank you for having the open house

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Tony & Michelle Coelho

Address: 6588 Freeport Dr

Email: Coelho2003@yahoo.com Phone: _____

Comments Sewer option Sounds great. We are hopefull that the cost to the ower is around 3000.00 + my water bill is around 50.00 a month. If were more it would cause my family hardship to pay. My water bill this month was only 14.00

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: GAEL & JUNE O'CONNOR

Address: 6223 FREEPORT DR, SPRING HILL, FL 34608

Email: NONNA6742@gmail.com Phone: 352-650-0056

Comments

CENTRALIZE SYSTEM SEEMS TO ME TO BE THE BEST + CHEAPEST OPTION FOR EVERYONE

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Bernadette Alicea

Address: 10285 Lynnhaven Rd

Email: Sweetieangela82@yahoo Phone: (352) 397-9879

Comments I'm all for the conversion.

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Ed + Barbara Cardoza

Address: 6257 Lorraine Ln Spr Hill

Email: bjecard@gmail.com Phone: 401-648-1223

Comments Very informative. Took their time to answer our questions and concerns. Made us feel better than when we arrived. This was a good idea to have this informational meeting so we didn't need to worry for 5 years waiting for it to happen

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Jim Corder

Address: 11153 Elgin Blvd

Email: N/A Phone: 703 9899082

Comments I am all for the new drainage sys. at little or no cost to the home owner.

Thx

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Marilyn + Steven Smith

Address: 3405 Dothan Ave. Spring Hill, FL 34609

Email: stevensmith110@aol.com Phone: (904) 495-2107

Comments Found this to be very informative. Folks presenting were knowledgeable + able to answer all questions.

Wonder what new homeowners would have to go thru?

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Barbara Dindl

Address: 11075 Gifford Dr.

Email: dindlb@yahoo.com Phone: _____

Comments Informative presentation. My biggest concern was cost to homeowners. Not as bad as I initially thought if funding is approved. I was hearing I was going to be on the hook for entire amount and if so I would have to sell.

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Dennis & Joy Malick

Address: 6402 July Ave Spring Hill Fl. 34608

Email: Joy Malick 1 @ gmail. Comm Phone: 3526008516

Comments I Have NO problem with City Sewers, As long as my FRONT YARD IS put back to its ORIGINAL Shape. I Like the idea of a Discount if Paid when Job is DONE. The Best thing is SAVING THE ENVIRONMENT.

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Steve & Shawn Brown

Address: 6081 Mountain Way

Email: Soneil5616@yahoo Phone: 352-515-1111

Comments If we we're told a yr ago prior to closing we would not have bought this house. We have a 2 yr old new Septic system, which we just had our front yard sodded. Our elderly neighbor's are now planning on selling as they are on social security & cannot afford this.

Please use back if you need more room. **We appreciate your input.**

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: TIMOTHY RYBINSKI

Address: 10277 NODDY TERN WEEKI WACHEE, FL 34613

Email: capt_ribeye@yahoo.com Phone: 910-478-6263

Comments IS THERE A REAL ESTATE DISCLOSURE LAW THAT MANDATES NOTIFICATION TO A NEW HOME BUYER (IN PEA DISTRICT) THAT A SEWER CONNECTION/UPGRADE IS REQUIRED AND FORTHCOMING?

EXAMPLE: DISTRICT A OWNER DECIDES TO SELL VICE INSTALL/UPGRADE OR PAY CONNECTION FEES. NEW PURCHASER IS CAUGHT UNAWARE! CAN IT BE A REQUIRED DISCLOSURE FOR ALL CLOSINGS? (I GOT BIT BY THIS IN EARLY 90's)

Please use back if you need more room. **We appreciate your input.**

THANKS!

Public Input Open House – February 4, 2020

Septic System Remediation Plans to Help Protect Our Springs

COMMENT CARD

Name: Amanda Reilly

Address: 900 Helene Way

Email: _____ Phone: _____

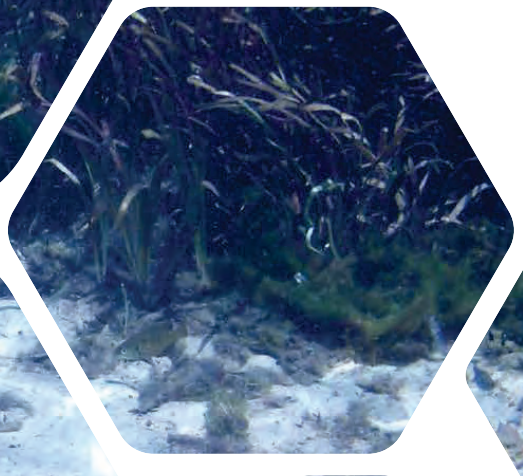
Comments I came in completely against being forced to hook up to city water and sewer, I still am. Learning that this was a focused study helped sway some of my arguments. All of those other things DO still need to be done, this is just a slice of the pie. Also learning I'm in an area that has options other than sewer hook up helped ease my mind as well – just not my wallet.

Thank you for hosting this

Please use back if you need more room. **We appreciate your input.**


Protecting
Our Springs
Hernando County Utilities
Water Conservation Program

WHAT DO YOU FIND IN SPRING WATERS?



Plant Life

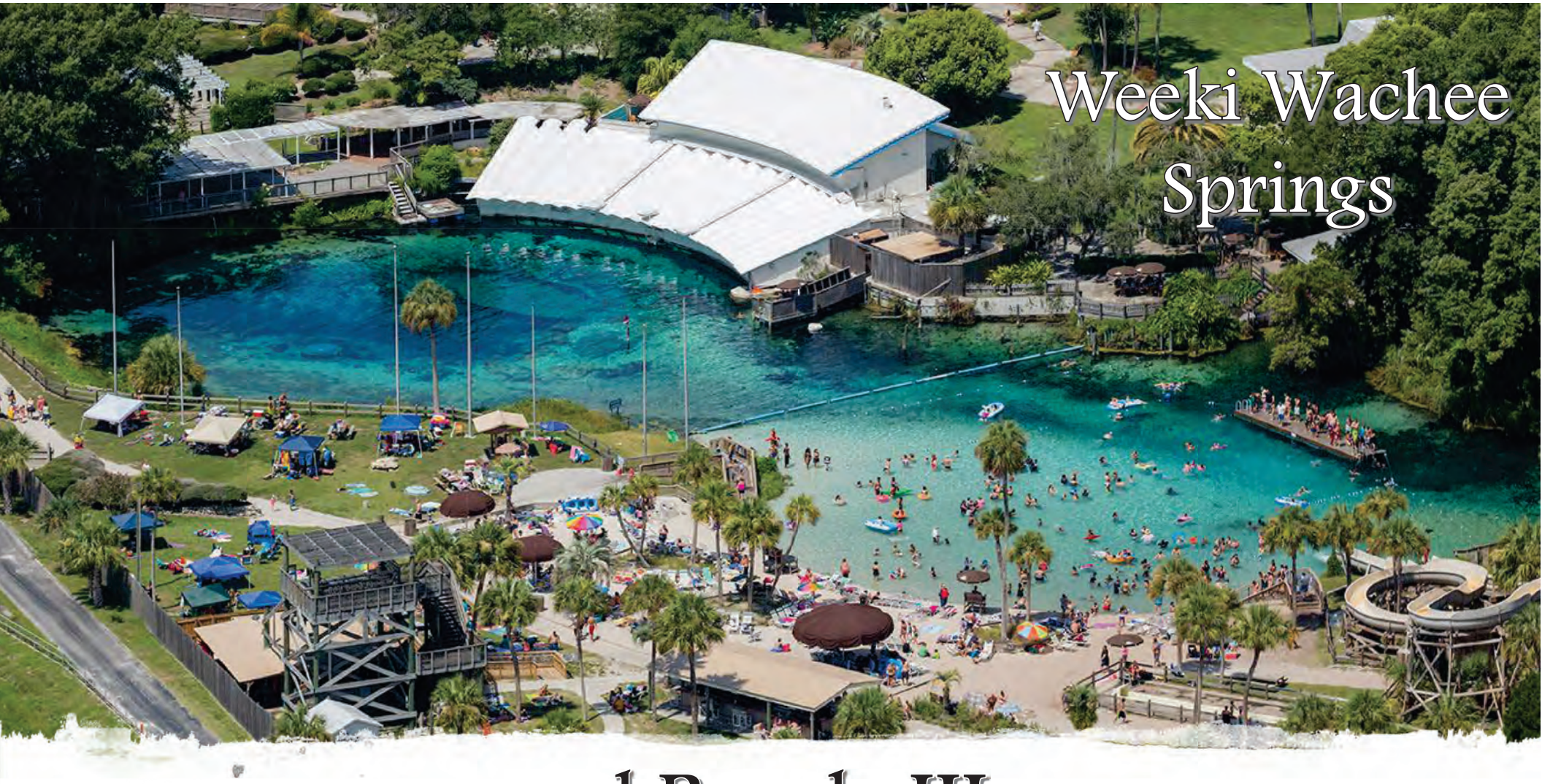
Fish


Wildlife Above

Wildlife Below

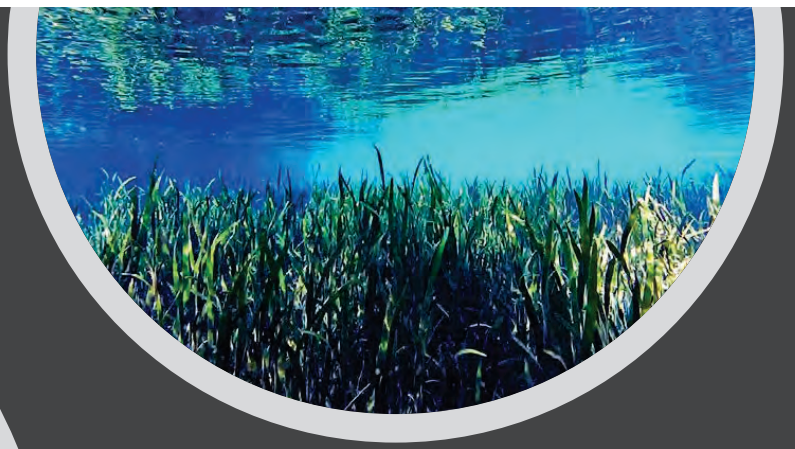
Cave Divers


Mermaids!



and People !!!

Springs are gifts from Mother Nature

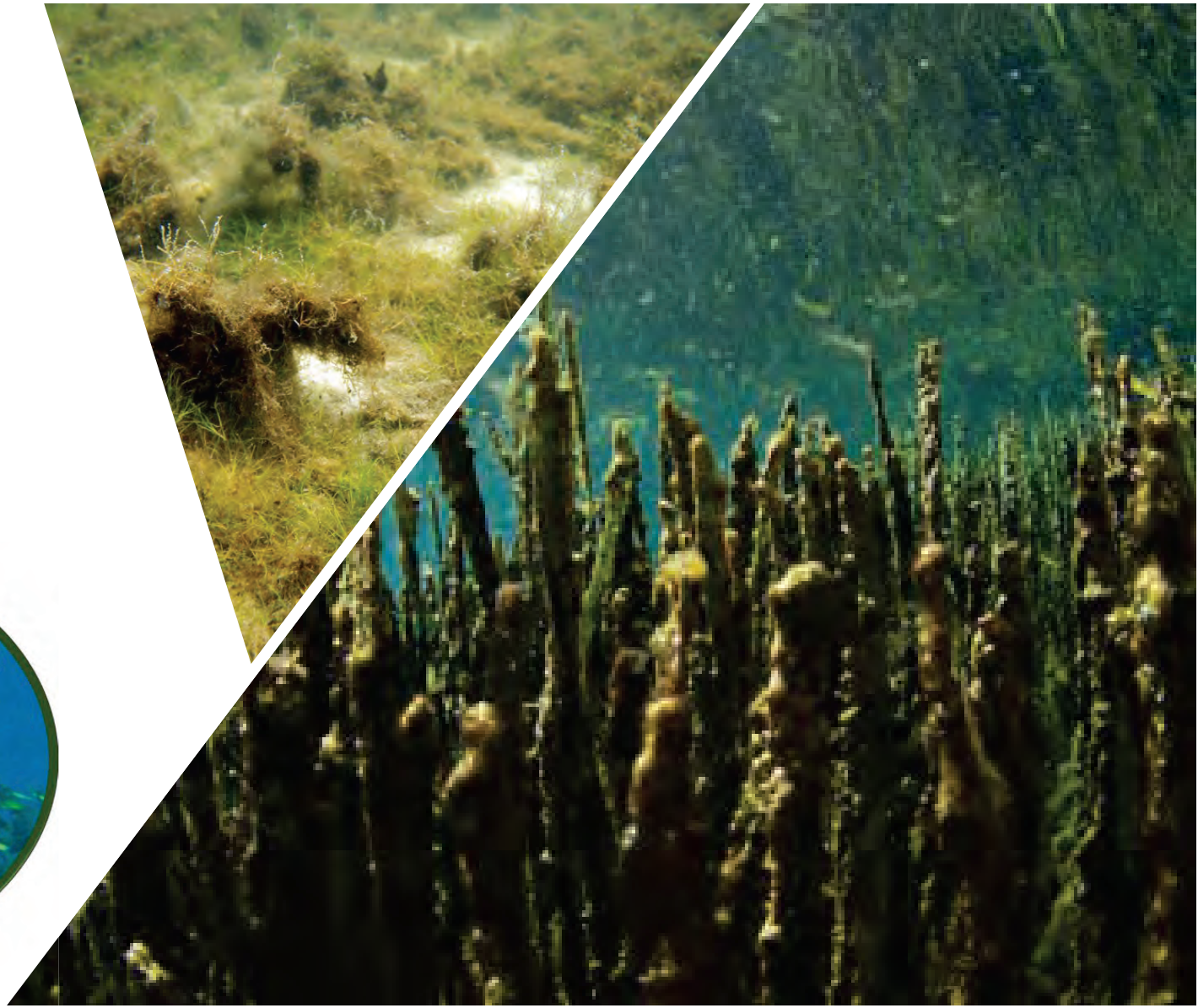


gifts we should
enjoy and
do our best to
protect!

Enjoying our Springs is easy

- Swimming
- Snorkeling
- Boating
- Tubing
- Fishing
- Bird watching

but
protecting
our Springs
takes
some effort!



WHAT IS A SPRING?

A place where
water flows from
the AQUIFER
to the earth's surface.

Important Springs Definitions

1

SPRING VENT
Opening where groundwater rises up to the earth's surface as a spring

2

SPRINGSHED
The area of land that contributes water to a spring or springs – it can be small or large

3

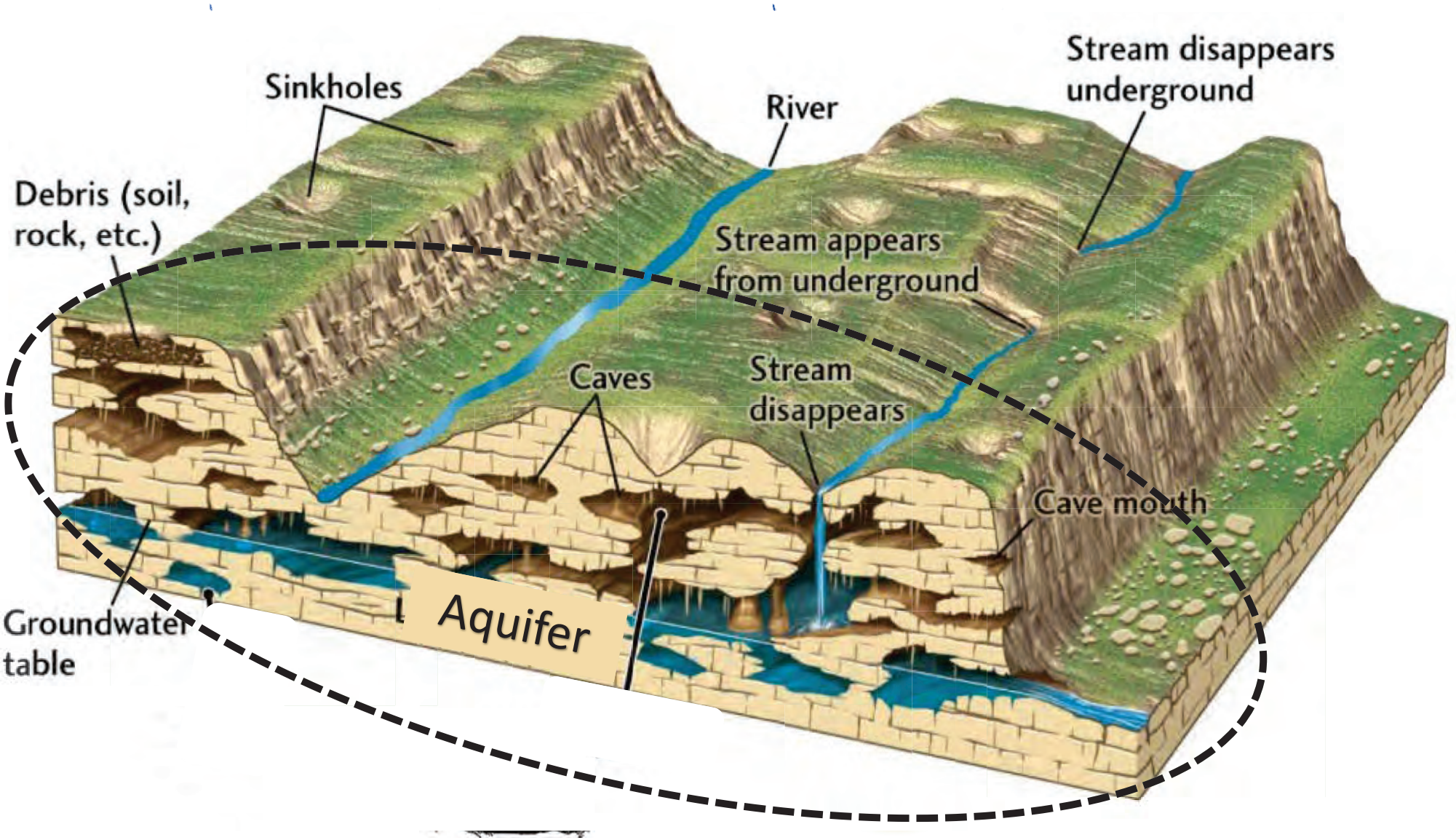
SPRING GROUP
a collection of springs that live within a springshed and sometimes empty to a common spring run (creek or river).

4

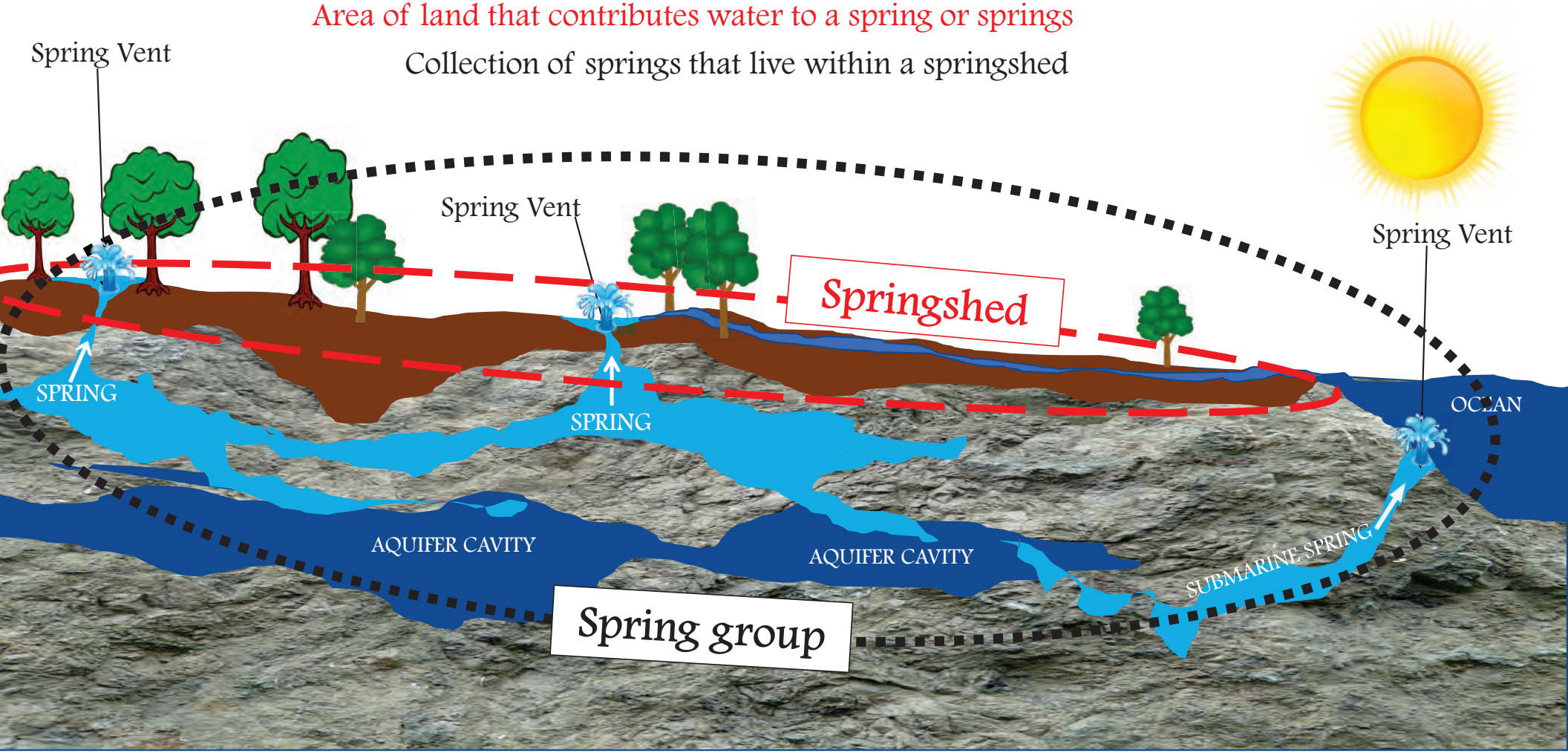
FIRST MAGNITUDE SPRING
The largest spring, it discharges at least 64.6 million gallons of water per day! An average in ground pool holds ~ 13,000 gallons – that means about 5,000 swimming pools come out of the spring every day!!! (1-8mags)

5

GROUNDWATER RECHARGE
Water going back into the ground where it will eventually filter back into the aquifer


Sinkholes
River
Stream disappears underground
Debris (soil, rock, etc.)
Stream appears from underground
Caves
Stream disappears
Cave mouth
Groundwater table
Aquifer

Springs come from the AQUIFER deep underground



Many things can affect the water quality and quantity

People and animals that live nearby

-taking clean water

-making dirty water

-people and animal waste

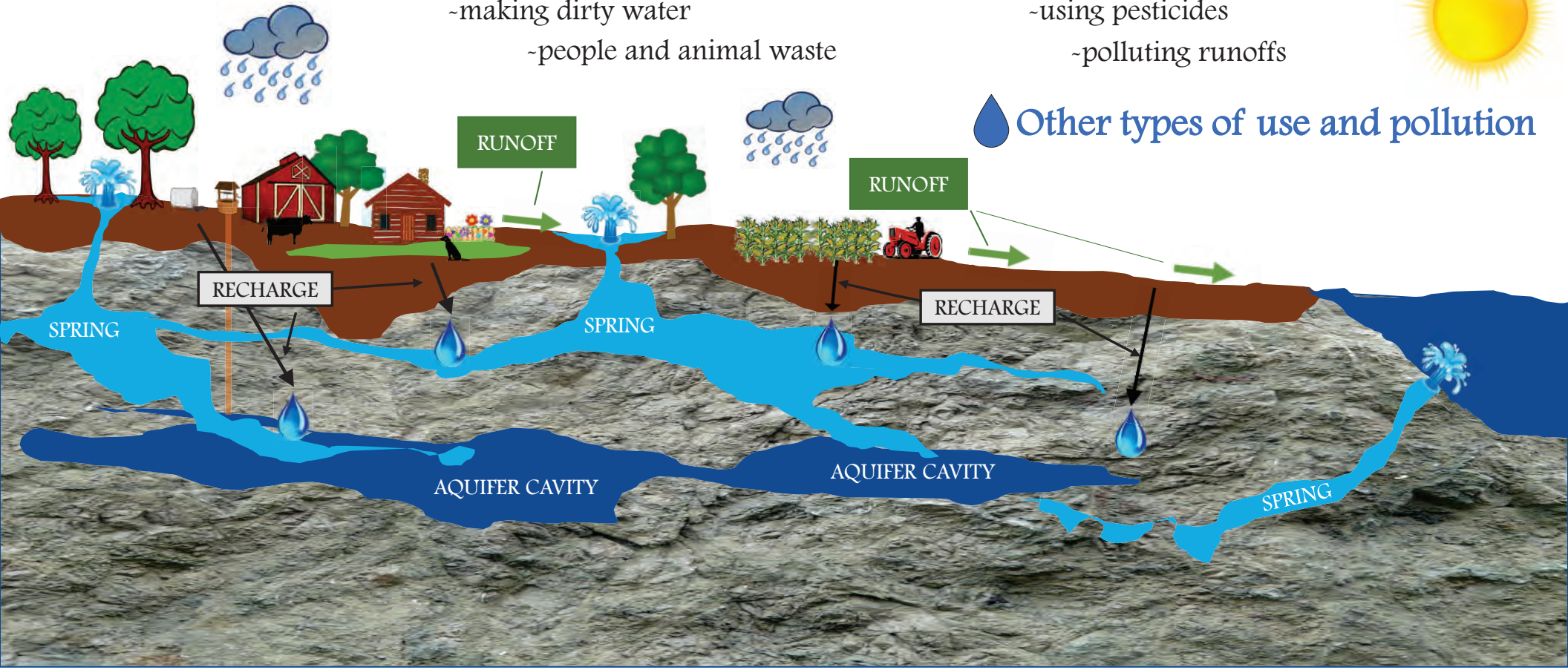
Taking care of crops, lawns and gardens

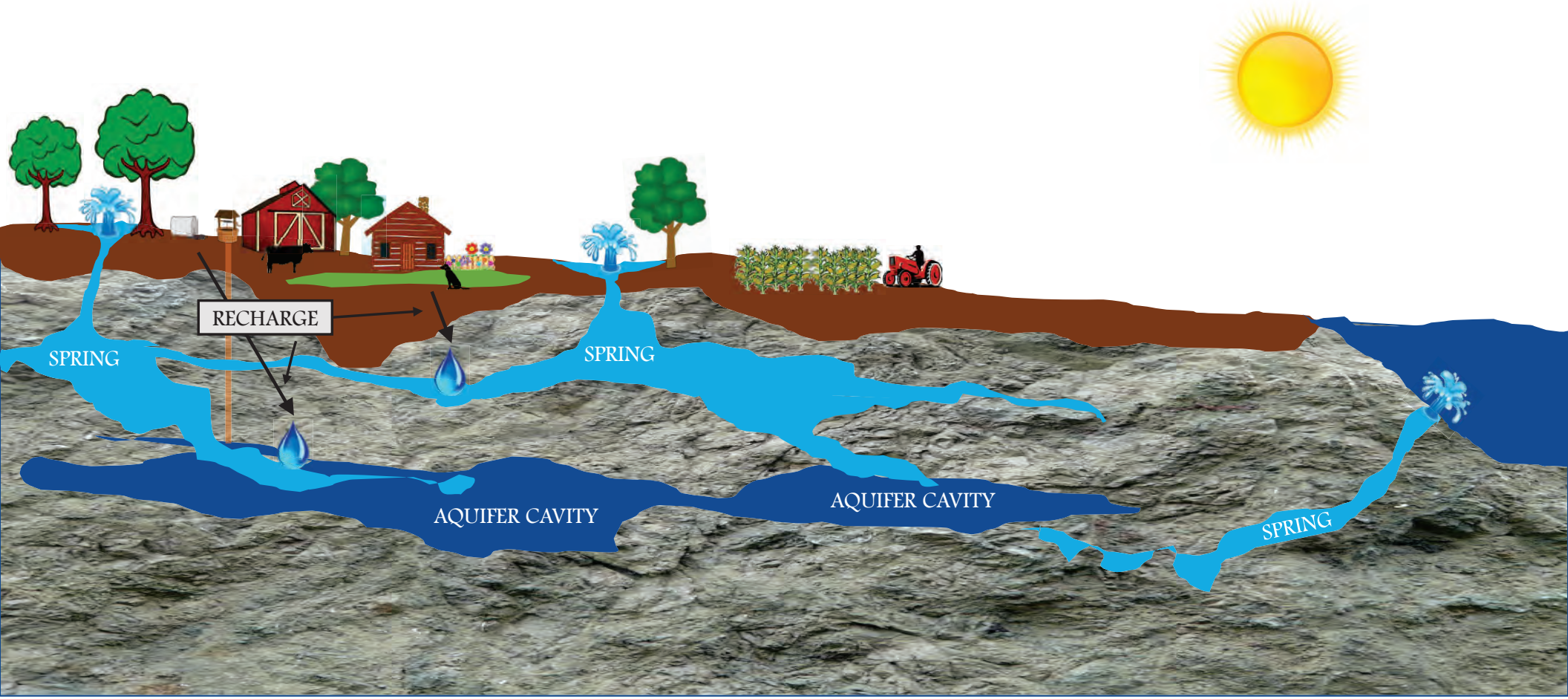
-using fertilizer

-using pesticides

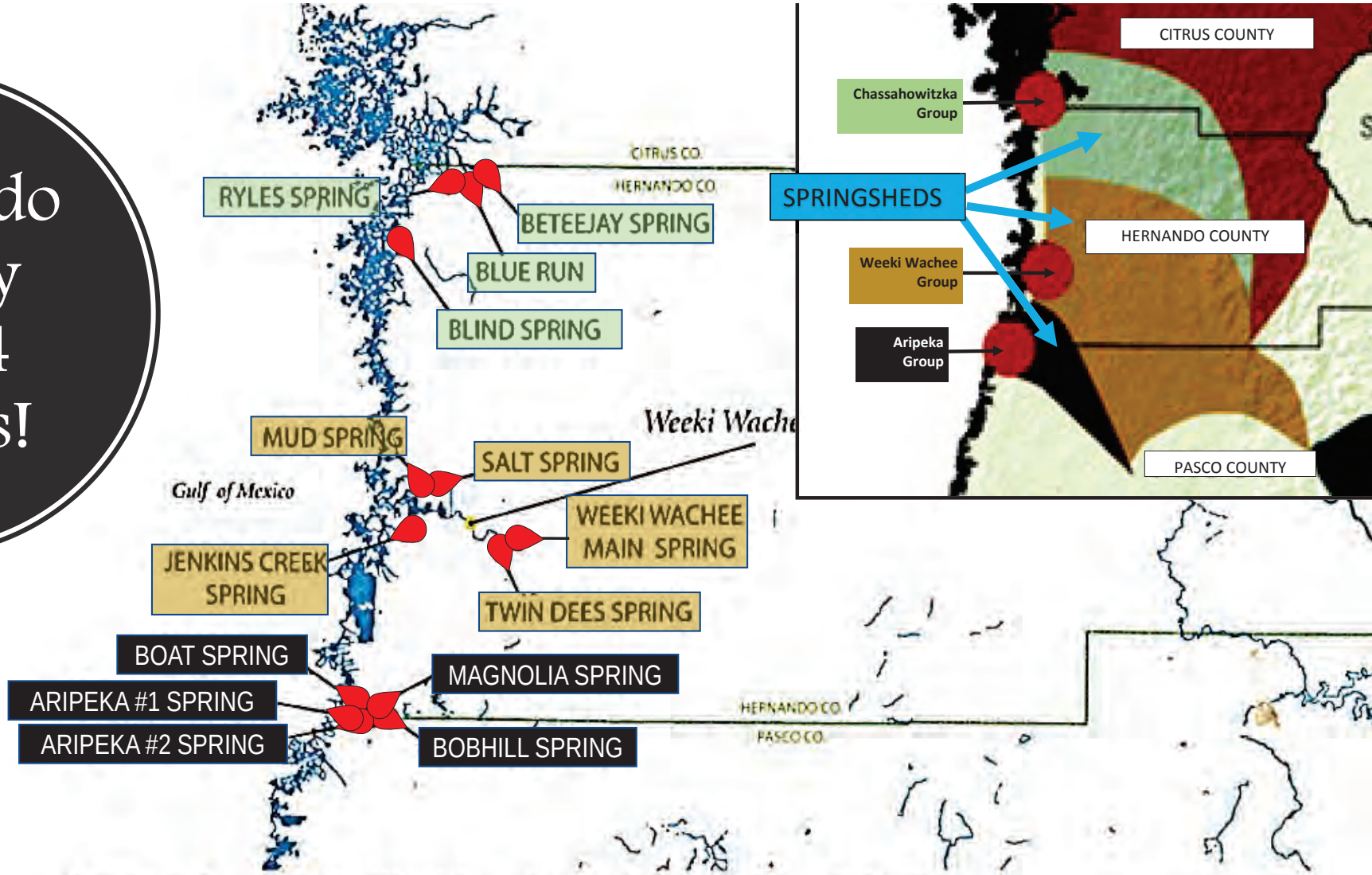
-polluting runoffs

Other types of use and pollution




RECHARGE
SPRING
SPRING
AQUIFER CAVITY
AQUIFER CAVITY
SPRING

Hernando County has 14 Springs!



Source: Southwest Florida Water Management District

Nearly everything that touches the ground can end up in the aquifer…which may hurt our Springs

Sometimes due to overuse or drought, there's not enough water to fill the springs, so they dry up. We need to keep our Springs full!

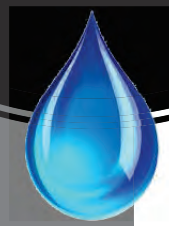
We have two super heroes that keep watch over our springs

Olivia the Osprey
watches from above

Olivia and Ollie are on patrol day and night making sure people do the right things to protect our springs.

When they see something wrong, they pay the person a visit to tell them know how to change their bad habit!

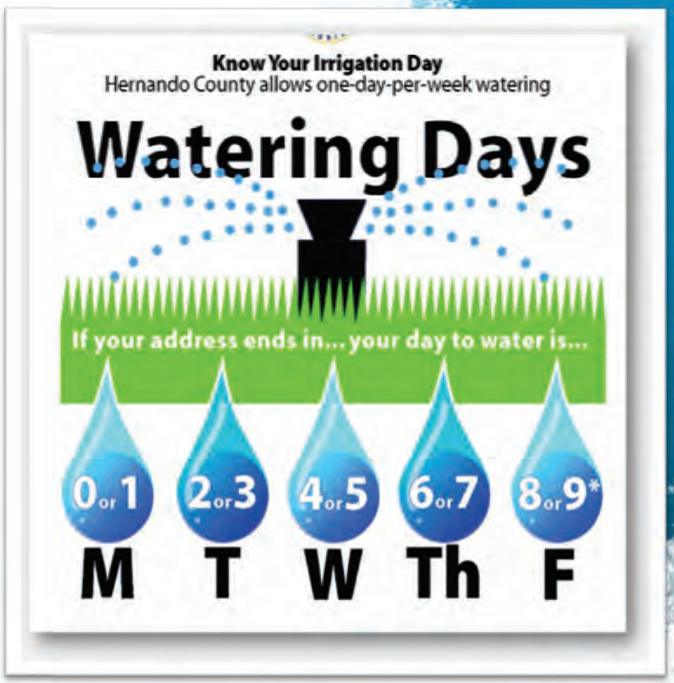
So how can we protect our Springs???



Ollie the Otter
watches below

YOU can help Olivia and Ollie by letting your friends, parents and neighbors know about the following ways we can ALL help protect our valuable Springs.

Water the lawn only on your assigned day or not at all if it rains!



Conserve water so there is plenty available in the aquifer to fill up the Springs.

Fix leaky faucets, toilets and outdoor sprinkler systems

Use rain barrels to collect rain. Use it to water the garden and plants

Only wash full loads of laundry and dishes

Take a half-full bath

Take short showers

Don't let water run if not using it … brushing teeth, washing car

Use energy efficient appliances and toilets

look for WaterSense Meets EPA Criteria

ENERGY STAR

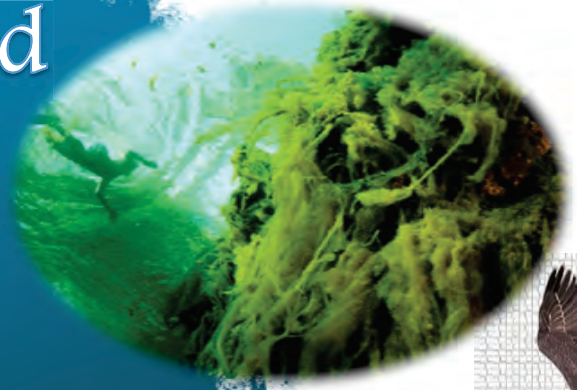
Use shut off nozzles to stop water

Properly dispose of grass clippings, trash and pet waste

Pay attention to what goes on and into the ground,

it can end up in the Springs!

Use fertilizer sparingly, the nitrates cause algae to grow and choke the good grass and plants



Don't dump anything down a storm drain, it's only for RAIN!

Plant a buffer zone between lawn and shoreline to filter trash and contaminants

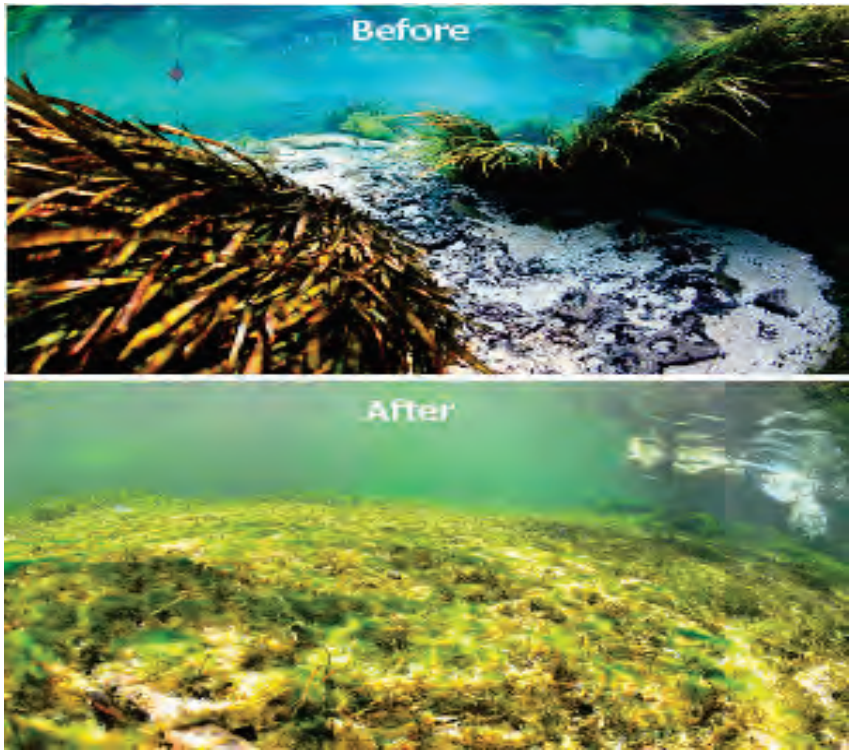
Protect the Springs when you are AT the Springs

Raise the motor and shut off propeller in shallow water

Remove all aquatic plants from boat before and after launching

Throw your trash away properly or recycle

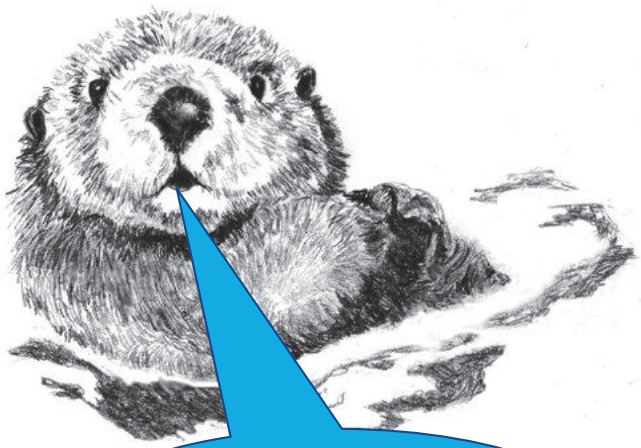
Don't kick up or disturb the vegetation when you're in the water



What could have caused this?

Thank you for caring about our springs!

If every person does their part to help protect our Springs, they will be around to enjoy for many, many years to come!



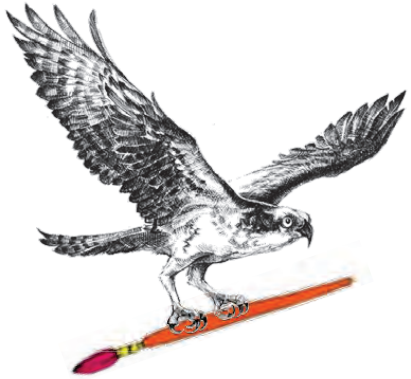
Please tell other people how they can help protect our springs too !!!

Protecting our Springs

brought to you by

Hernando County Utilities Department's

Water Conservation Program



Protect the Springs
Calendar Coloring Contest

Your drawing will go HERE!

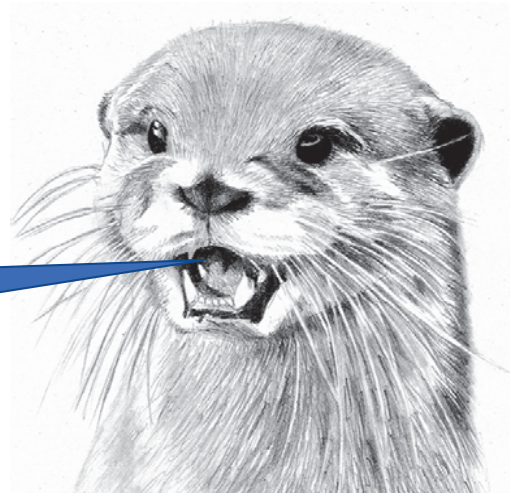
- ❑ Draw a picture that shows one of the ways we can protect our springs.
- ❑ If it wins, it will be put on a calendar that will be handed out to county residents.
- ❑ People will see your FANTASTIC artwork that shows you know what to do to help protect our springs and keep them full and healthy !!!

Please take your folder home so you can:

1. Show your parents what you learned today

2. Start working on your drawing!!!

GOOD LUCK !!!



WEEKI WACHEE SPRINGS STATE REQUIRED IMPROVEMENTS

Total Maximum Daily Load (TMDL)

Establishes the maximum amount of pollutants the spring can handle

Basin Management Action Plan (BMAP)

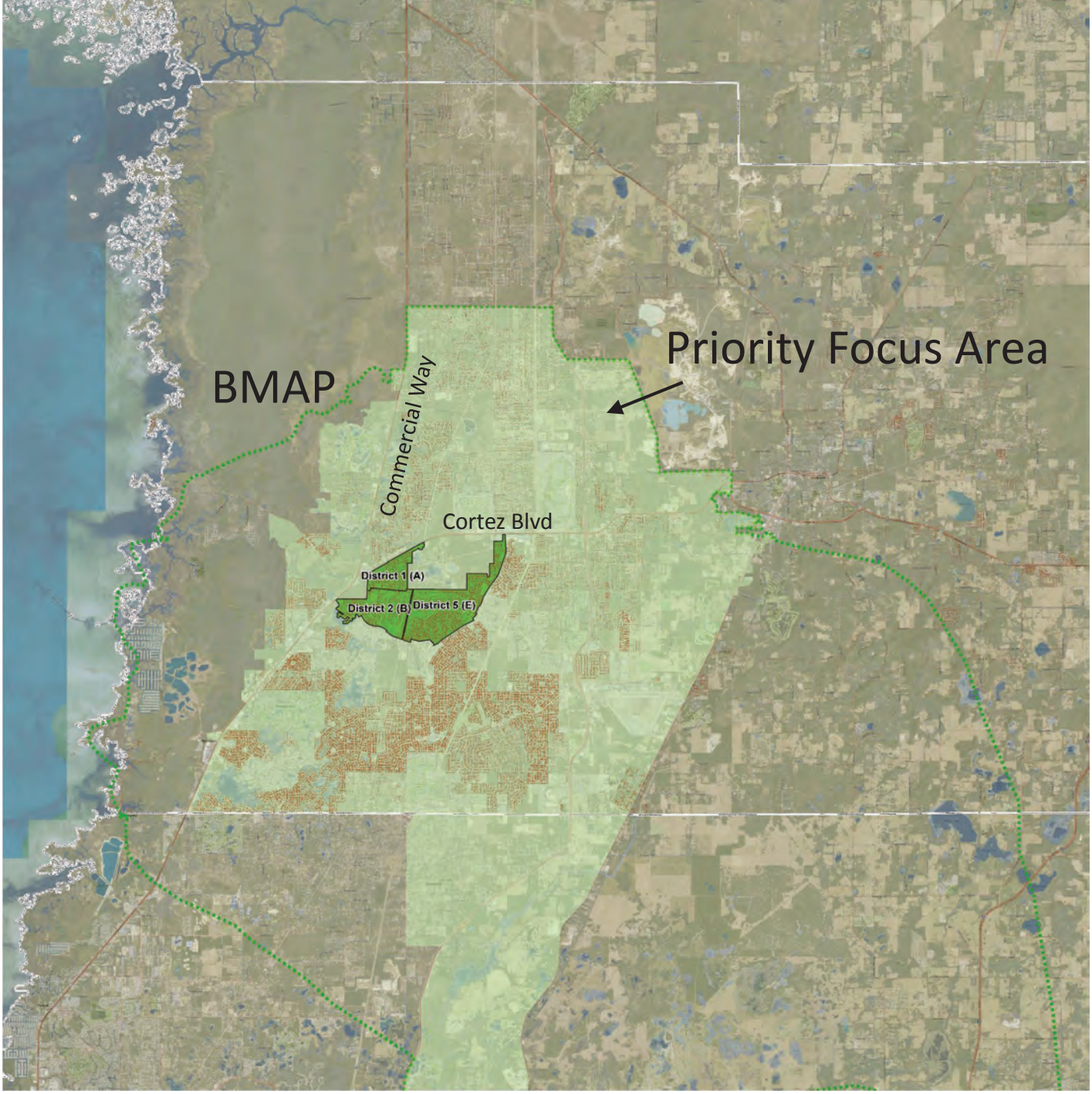
Enforceable sets of projects and management practices designed to reduce nutrients and improve water quality over time

Florida Springs and Aquifer Protection Act

This act affords special status and protection to historic first-magnitude springs and to other springs of special significance

FLORIDA SPRINGS AND AQUIFER PROTECTION ACT

- Priority Focus Areas (PFA) - where certain activities are prohibited
- Prioritized schedules (5-year, 10-year, and 15-year) of restoration projects and nutrient load reduction
- Achieve water quality restoration targets in 20 years



WEEKI WACHEE SPRINGS

JonesEdmunds

Coastal

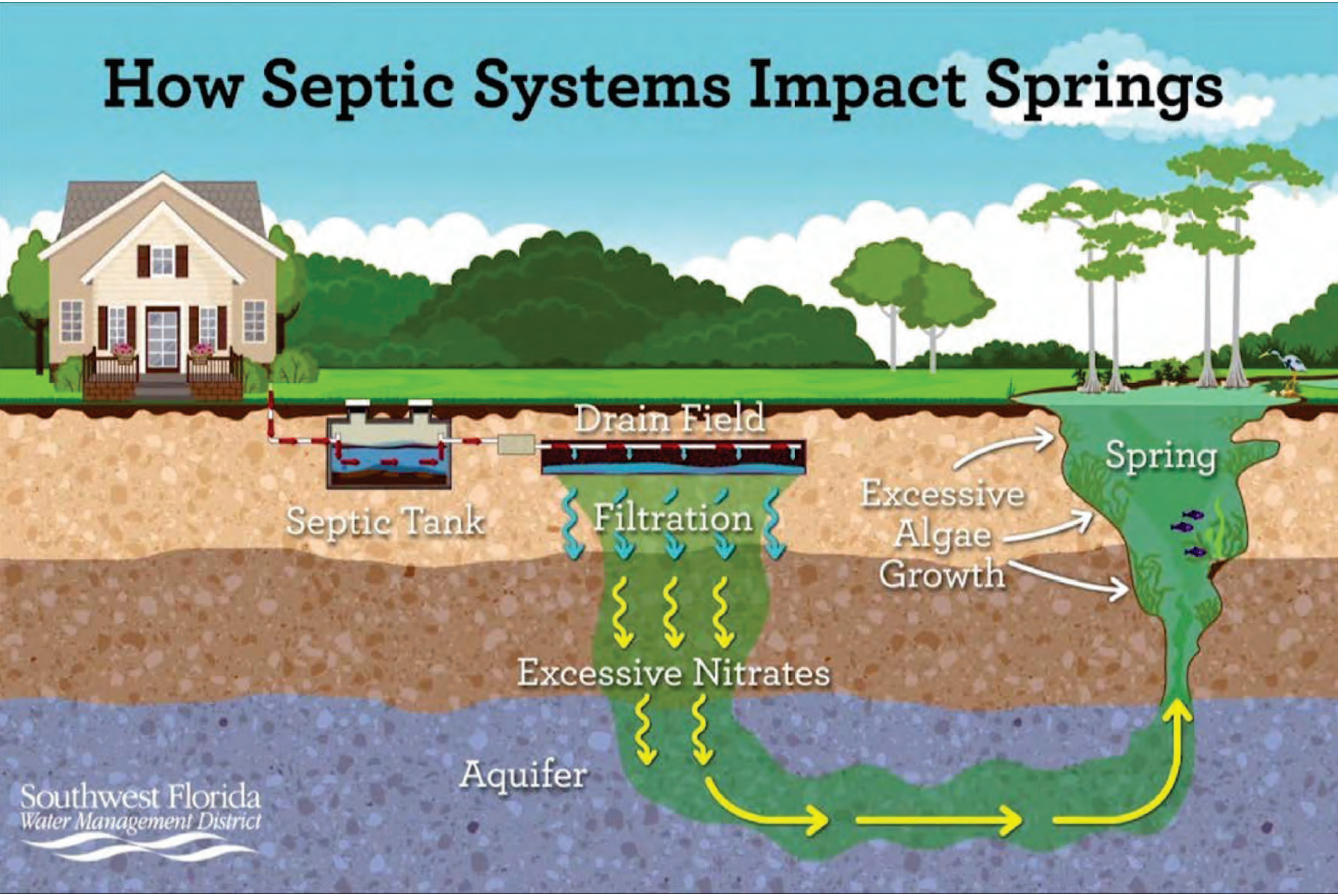
Legend

- Septic Tank
- 20 Year Projects
- Weeki Wachee PFA
- Weeki Wachee BMAP
- Hernando County Line

Number of Septic Tanks

Weeki Wachee PFA: 33,761 Tanks
Weeki Wachee BMAP: 35,191 Tanks

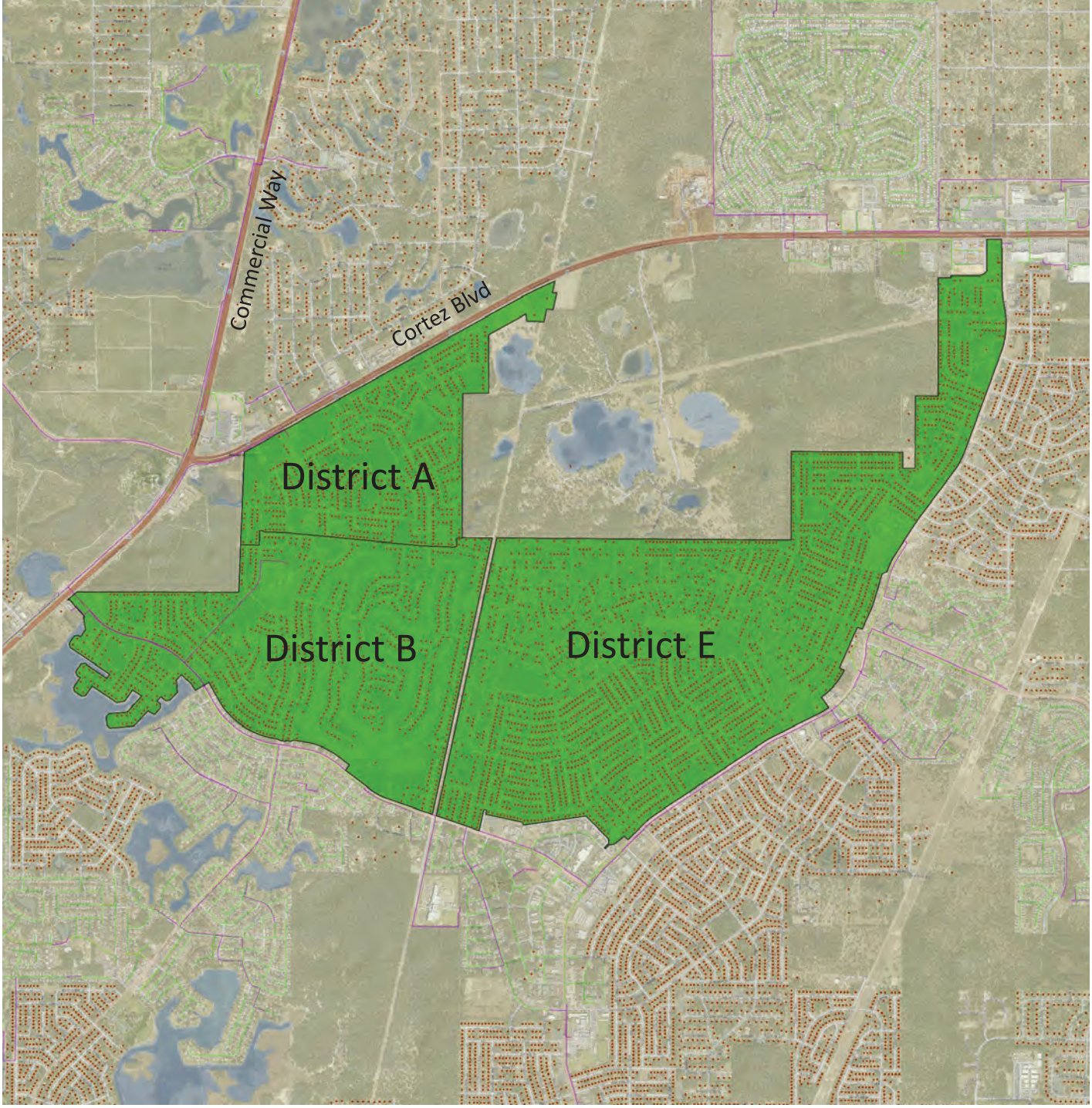
HERNANDO COUNTY FLORIDA


How Septic Systems Impact Springs
Drain Field
Septic Tank
Filtration
Excessive
Algae
Growth
Spring
Excessive Nitrates
Aquifer
Southwest Florida
Water Management District

SEPTIC TANK REMEDIATION PLAN REQUIREMENTS

- Required if septic tanks ≥ 20% of nitrogen pollution in PFA
- Septic tanks contribute approximately 30% pollutant loading in the Weeki Wachee PFA
- Lots of 1 acre within PFA require enhanced septic tank systems for new construction
- Develop Feasibility Analyses Document (FAD) to identify specific areas to be remediated within 20 years of BMAP adoption

HERNANDO COUNTY FLORIDA



IDENTIFIED PROJECT AREAS

1:10,000 0 0.5 Miles

JonesEdmunds

Coastal

Legend

- Septic Tank
- Gravity Main
- Force Main
- 20 Year Projects

Number of Septic Tanks

District A: 718 Tanks
District B: 1,083 Tanks
District E: 2,730 Tanks

Total 10,831

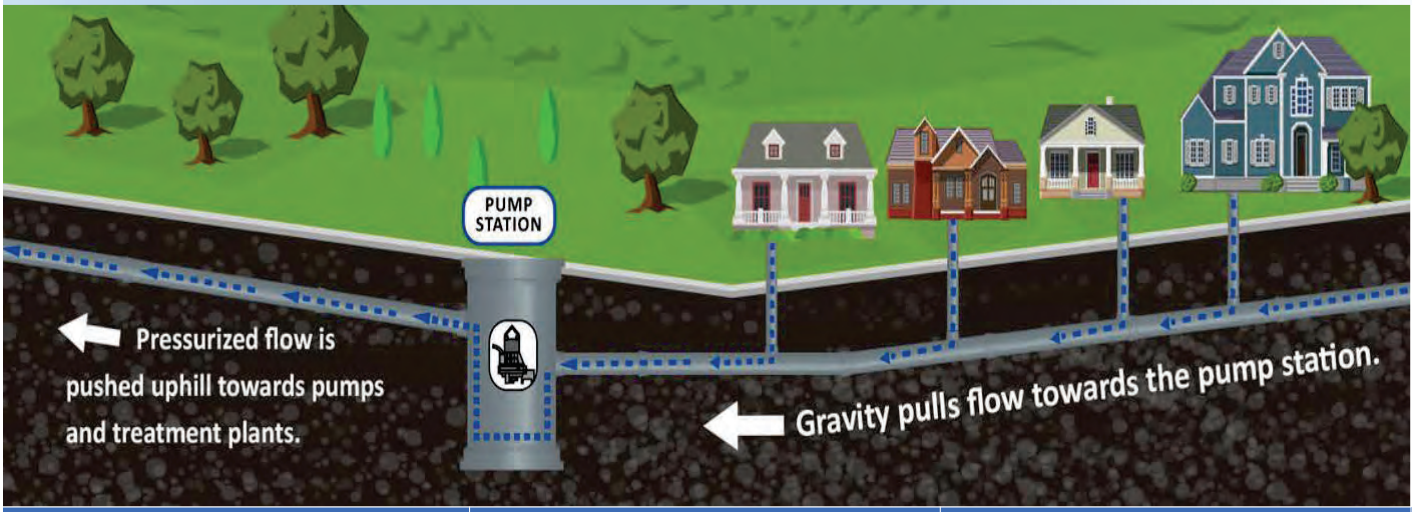
HERNANDO COUNTY FLORIDA

SEPTIC TANK REMEDIATION PLAN ELEMENTS

- A public education plan for understandable information about septic tanks and springs
- Identify options:
  - Enhanced septic system with nitrogen-reducing features
  - Connection to a central sewer system
  - Other action
- Cost-effective and financially feasible projects to reduce the nutrient from septic tanks

State-Mandated Septic Tank Remediation Plan

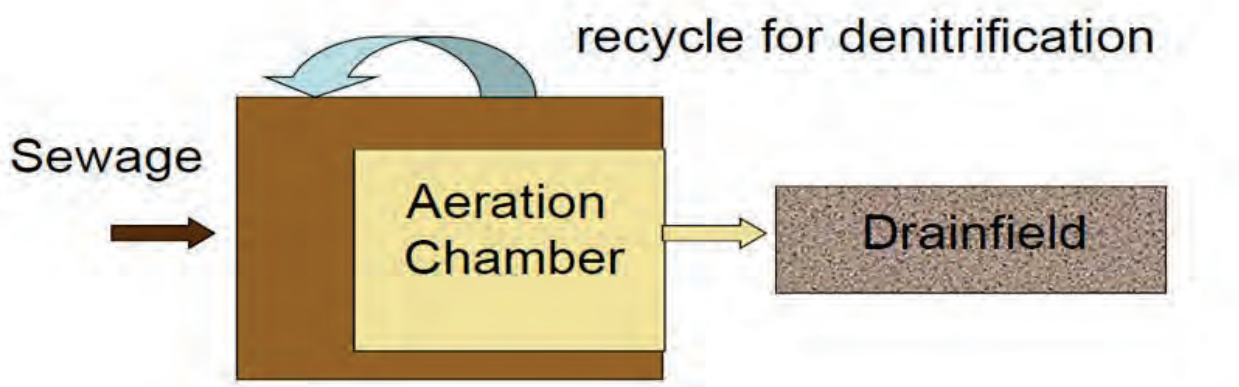
OPTION: CONNECT TO CENTRAL SEWER SYSTEM



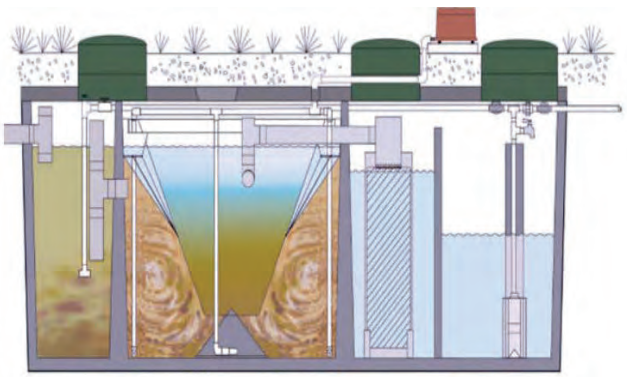
PROS	CONS	COST per ERC
Low Maintenance	Cost to Connect	$25,000 to $30,000
Long-term Reliability	Monthly Sewer Bills	Low Operating Costs

State-Mandated Septic Tank Remediation Plan

<u>OPTION:</u> INSTALL A NITROGEN-REDUCING AEROBIC TREATMENT UNIT

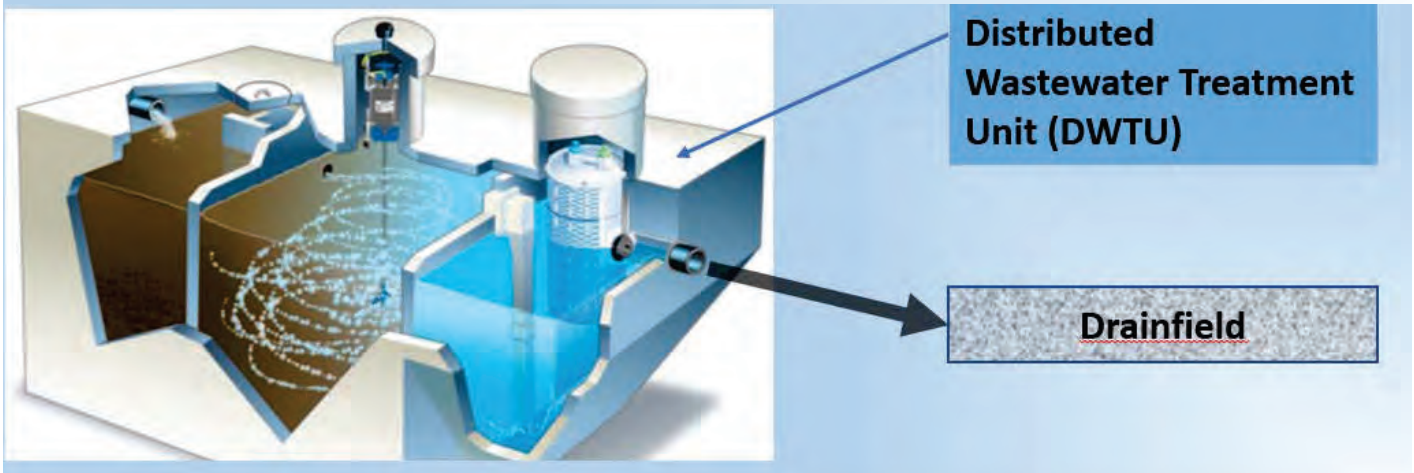


PROS	CONS	COST per ERC
Treats On-site Additional Funding for Homeowner	Operating Permits, Maintenance Entities and Service Contracts Monitoring and Inspections Required	$20,000 to $25,000 Higher Operating and Maintenance Costs



State-Mandated Septic Tank Remediation Plan

OPTION: DISPERSED SEWER NETWORK



PROS	CONS	COST per ERC
Treats On-site Centrally Managed-Performance Based Systems	Wireless Connection Supervision and Monitoring by a Professional WW Operator Pilot Phase Only	$20,000 to $25,000 Higher Operating and Maintenance Costs

COUNTY'S PLAN TO ASSIST RESIDENTS

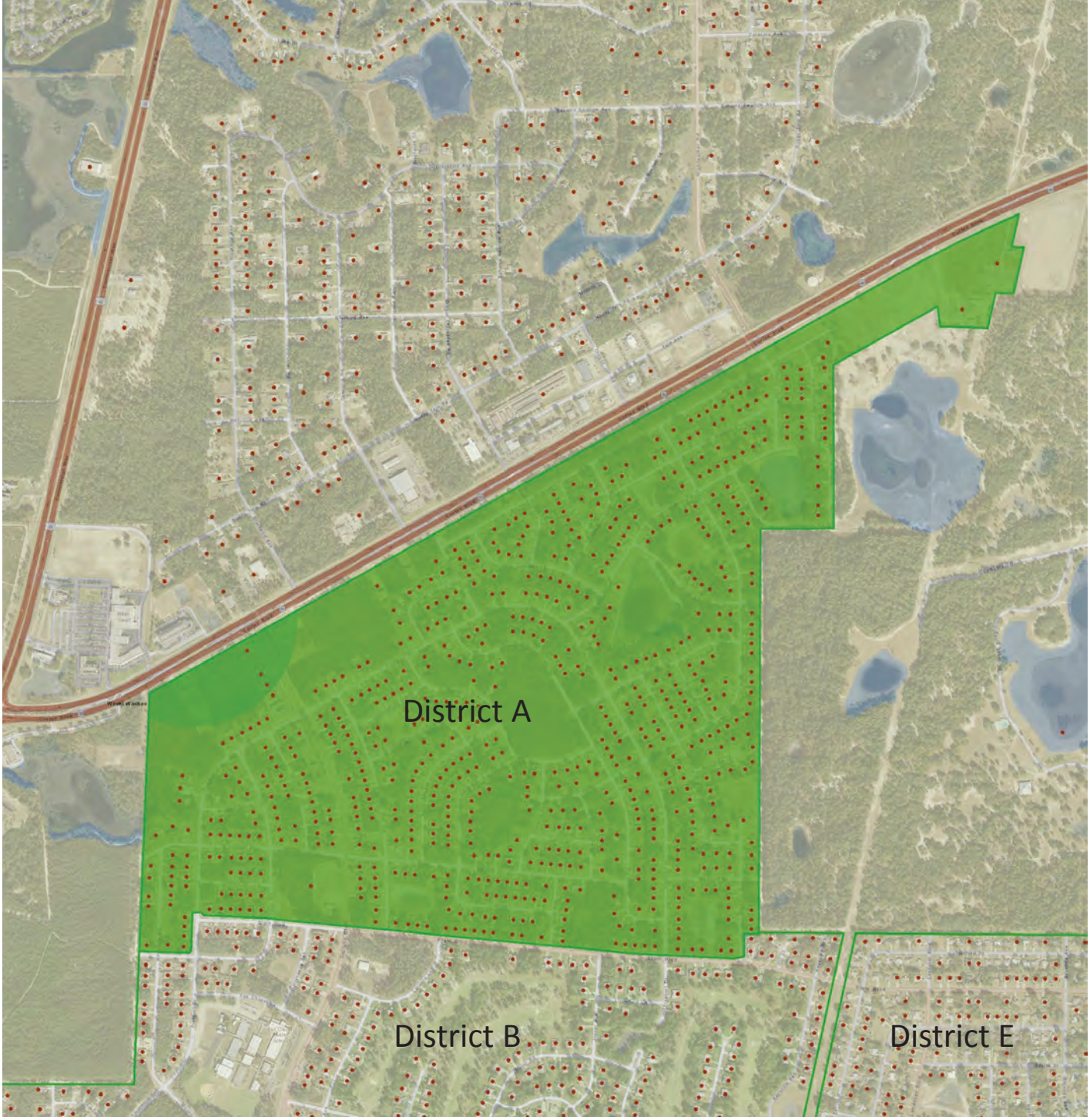
- Minimize financial impact for residents living in Priority Focus Area (PFA)
- Minimize operational and maintenance requirements for homeowners
- Support environmental protection initiatives and quality of life

DISTRICT A: MOVING FORWARD

- Proposed Option: **Gravity Sewer**
- Cost Information:

ITEM	COST
Estimated Cost per lot	$30,000
Anticipated Grant Offsets	$25,500 (85%)
County Contribution	$1,500 (5%)
Estimated Cost to Resident	$3,000 (10%)

- Anticipated Schedule
  - Planning
  - Design
  - Construction



DISTRICT A

Legend

- Septic Tanks
- 20 Year Projects

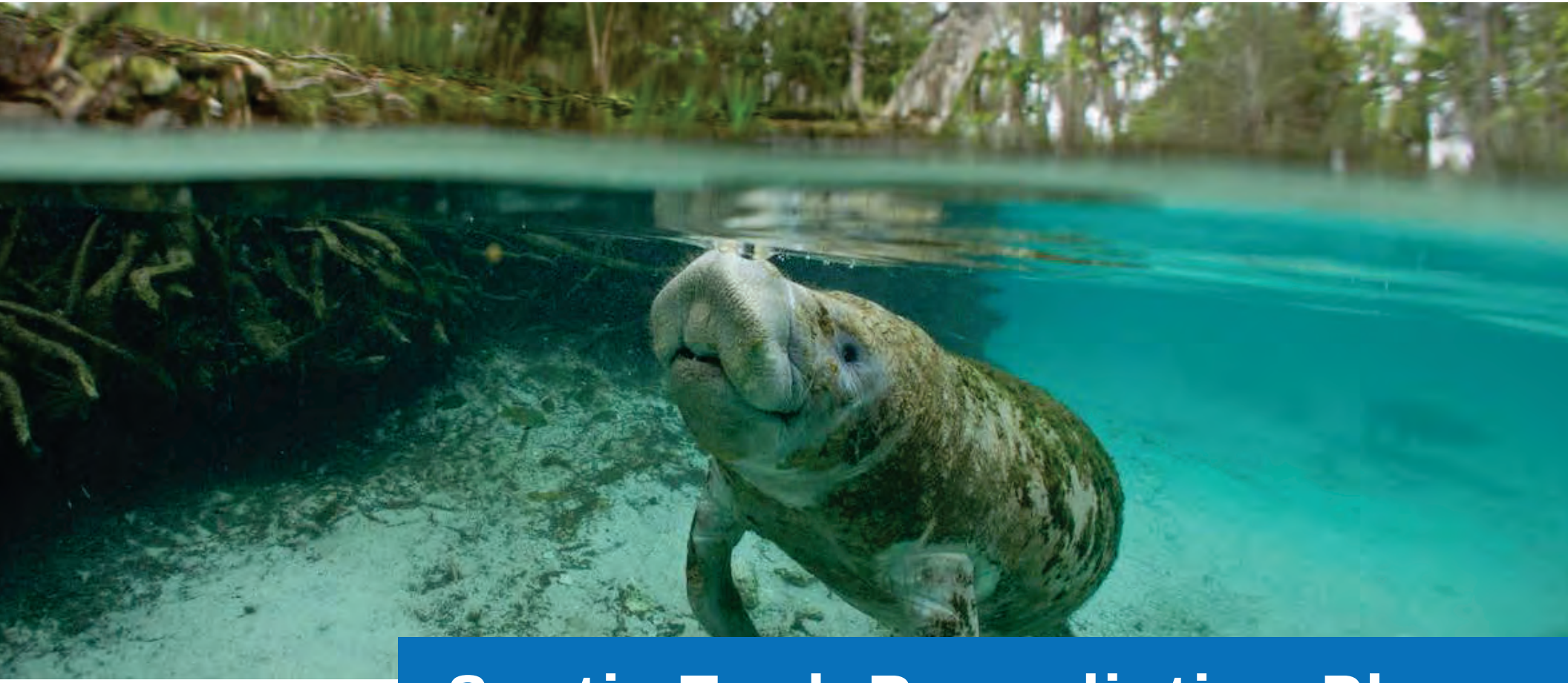
Number of Septic Tanks

District A: 718 Tanks
District B: 1,083 Tanks
District E: 2,730 Tanks

JonesEdmunds

Coastal

HERNANDO COUNTY FLORIDA



Septic Tank Remediation Plans to Help Protect Our Springs

Public Input Open House | February 4, 2020

Hernando County
Utilities Department

JonesEdmunds

Coastal engineering associates inc.
Engineering
Planning
Surveying
Environmental
Transportation
Construction Management

Florida Springs and Aquifer Protection Act

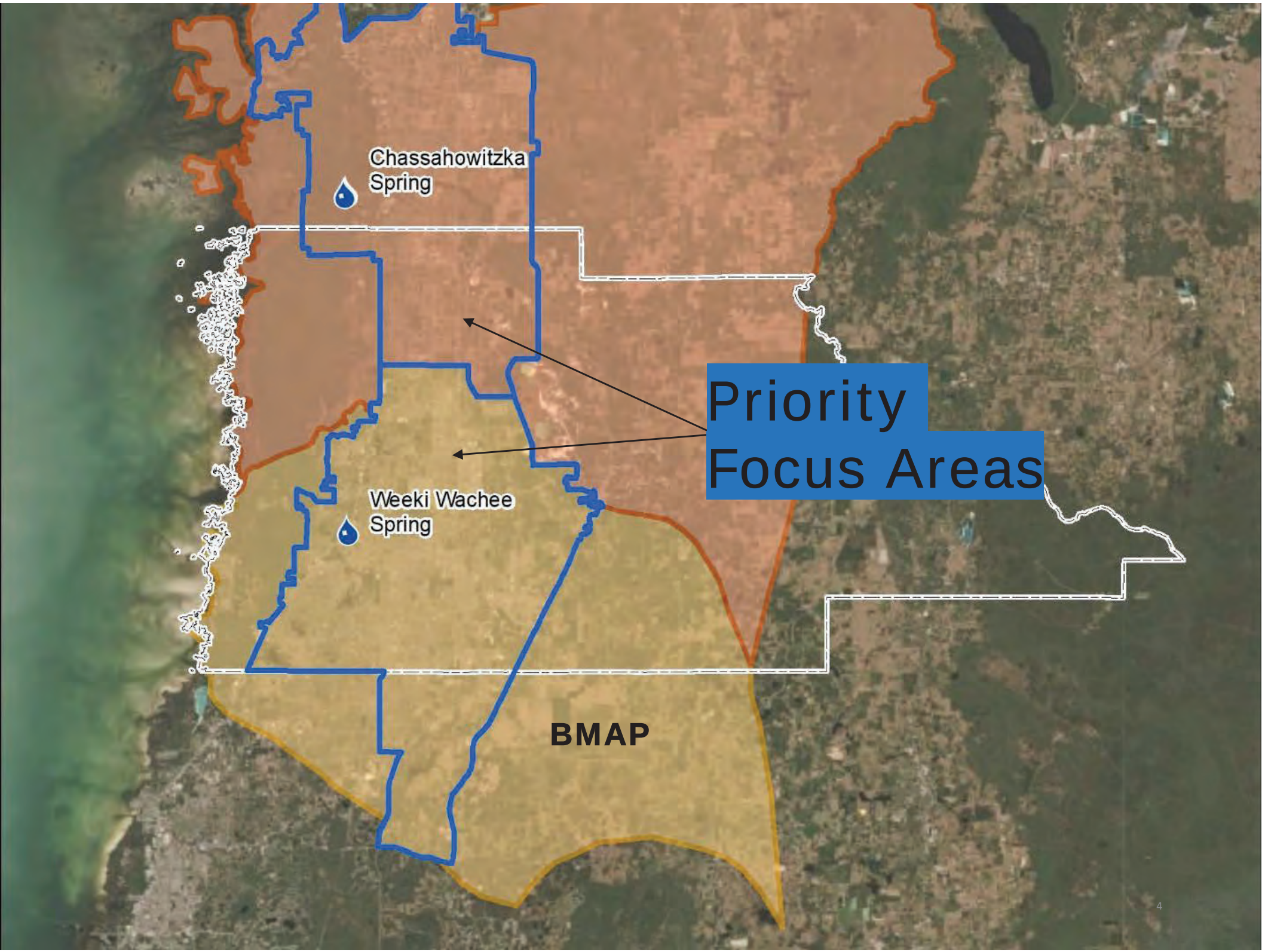
July 2016 - Governor Signed into Law

Protects 33 Florida Springs Threatened by Excess Nitrate Pollution

Florida Springs and Aquifer Protection Act

Actions Mandated by Senate Bill 552

- Must establish Priority Focus Areas for all first-magnitude springs


Chassahowitzka Spring
Weeki Wachee Spring
Priority Focus Areas
BMAP

Florida Springs and Aquifer Protection Act

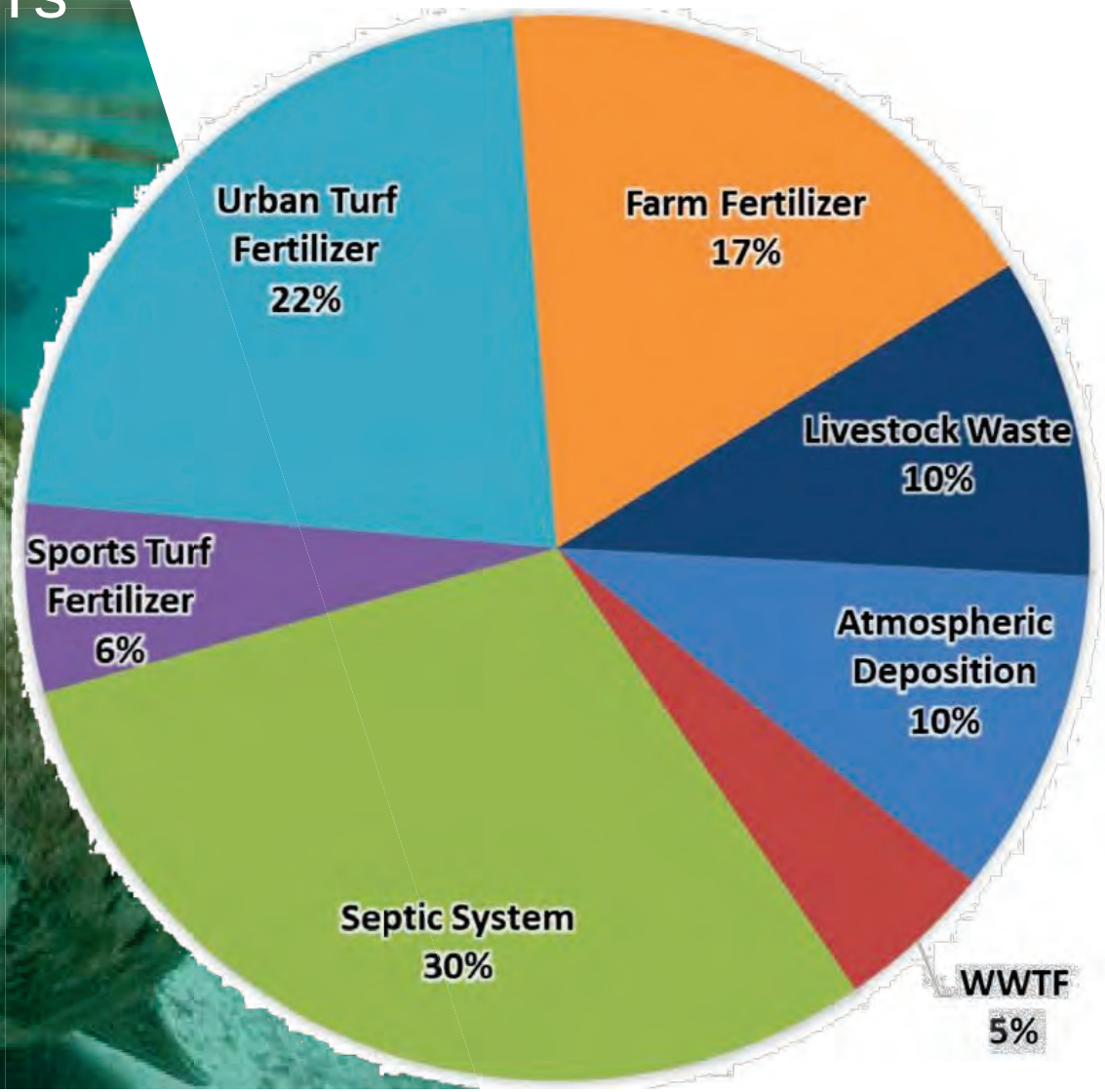
Actions Mandated by Senate Bill 552

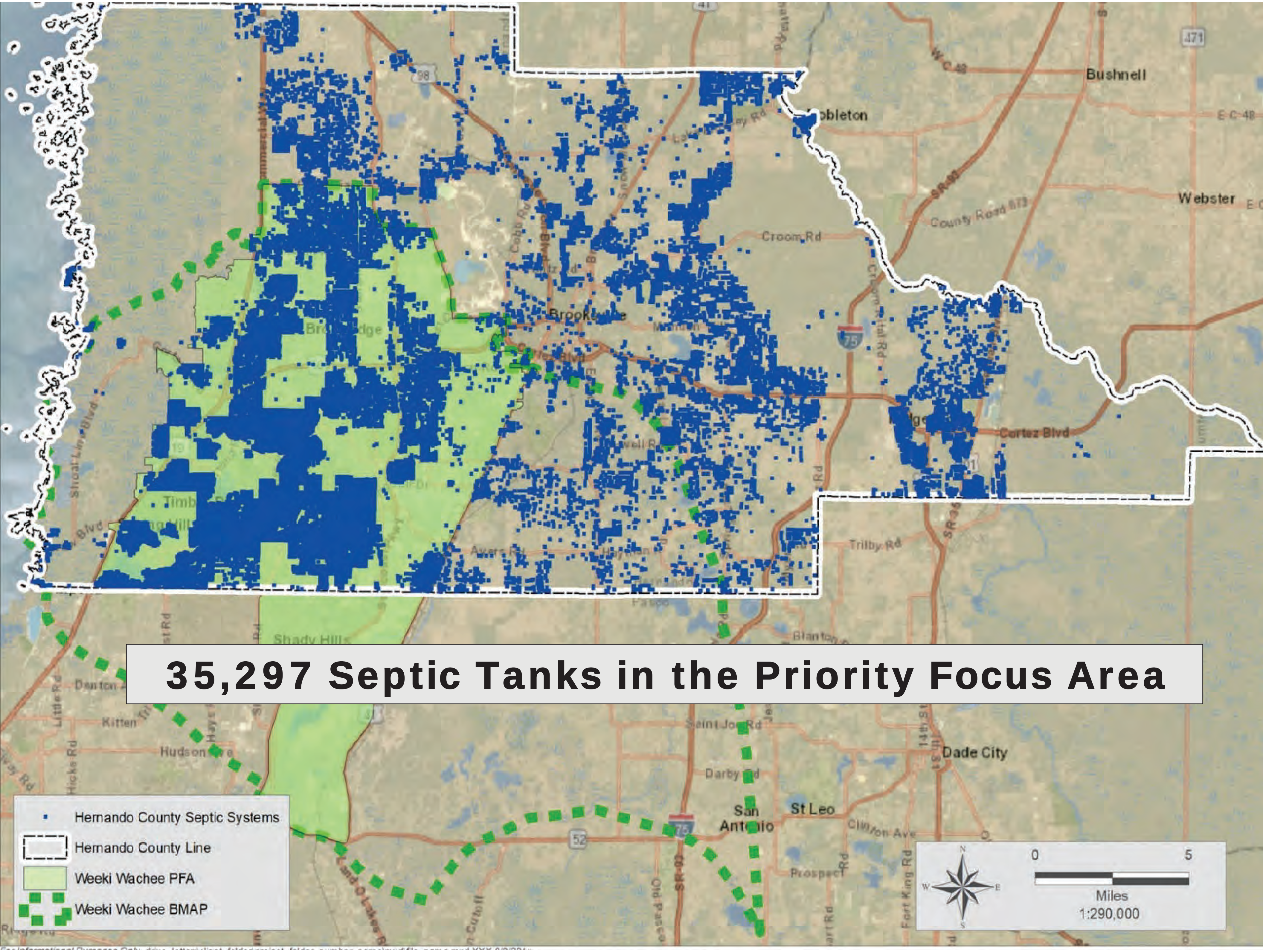
- Septic Tank Remediation Plans required for areas with more than 20% septic system nitrate contribution

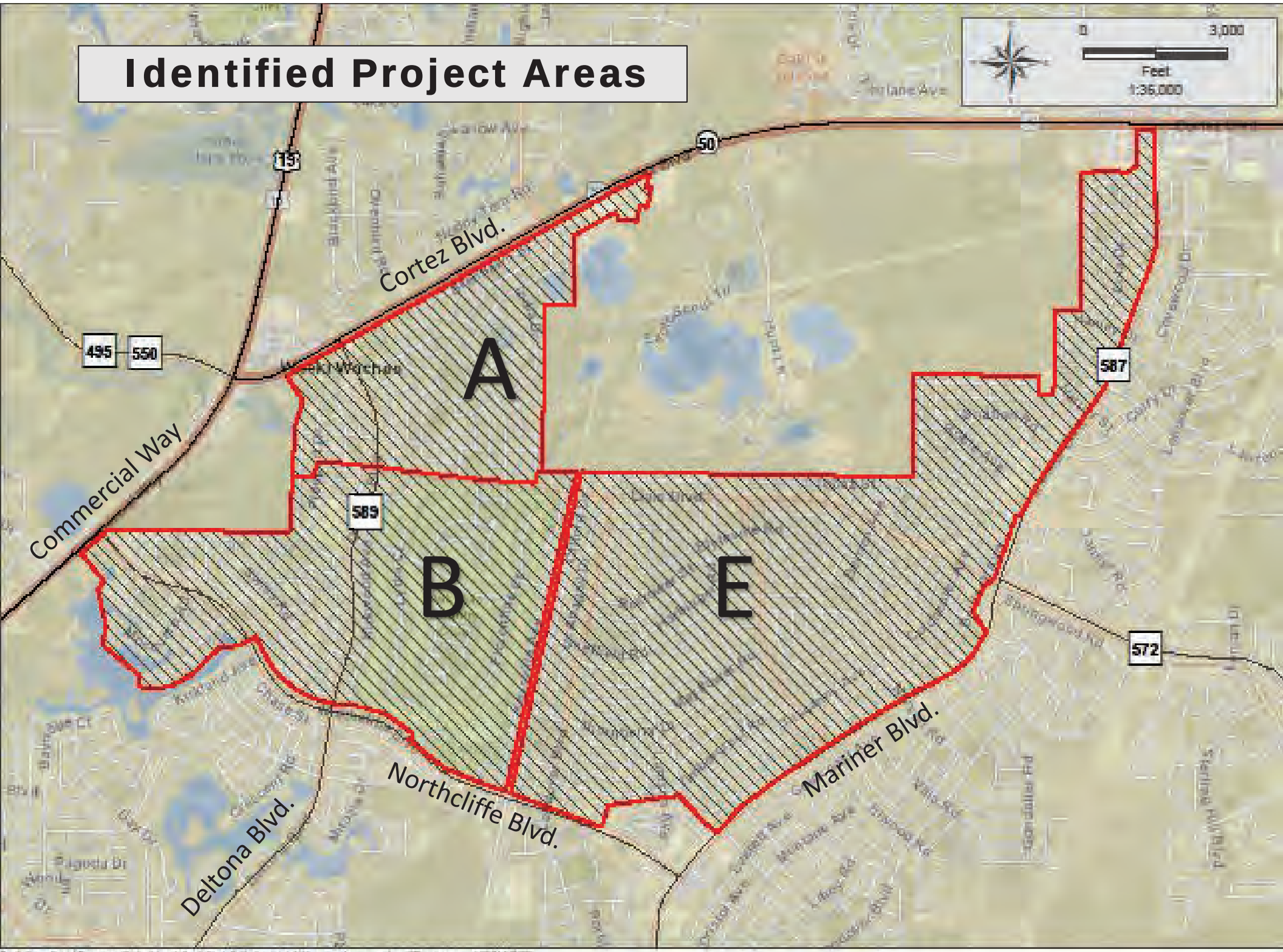
Weeki Wachee Springs

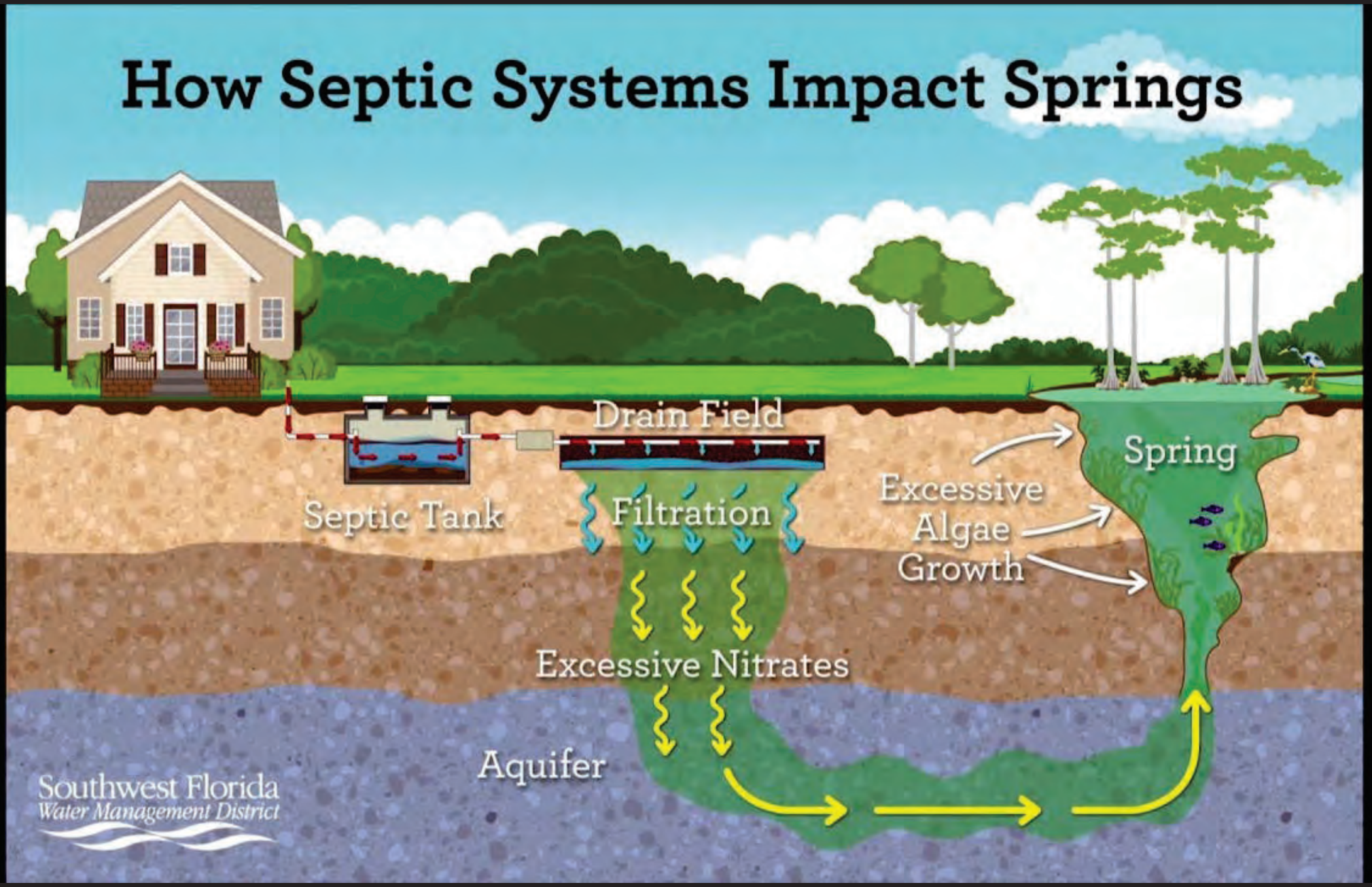
Major Nitrogen Contributors

- Septic Systems (30%)
- Urban Turf Fertilizer (22%)
- Farm Fertilizer (17%)




35,297 Septic Tanks in the Priority Focus Area
Hernando County Septic Systems
Hernando County Line
Weeki Wachee PFA
Weeki Wachee BMAP
0
5
Miles
1:290,000
N
S
E
W
Bushnell
Webster
Brooksville
Dade City
San Antonio
St Leo
Shady Hills
Croom Rd
Cortez Blvd
Trilby Rd
Saint Joe Rd
Darby Rd
Hudson Ave
Kitten Trl
Denton Ave
Blanton Rd
Clinton Ave
Prospect Rd
Cobb Rd
Ayers Rd
Hicks Rd
Little Rd
Shoal Line Blvd
Fort King Rd
14th St
Old Pasco Rd
Land O Lakes Blvd
County Road 673

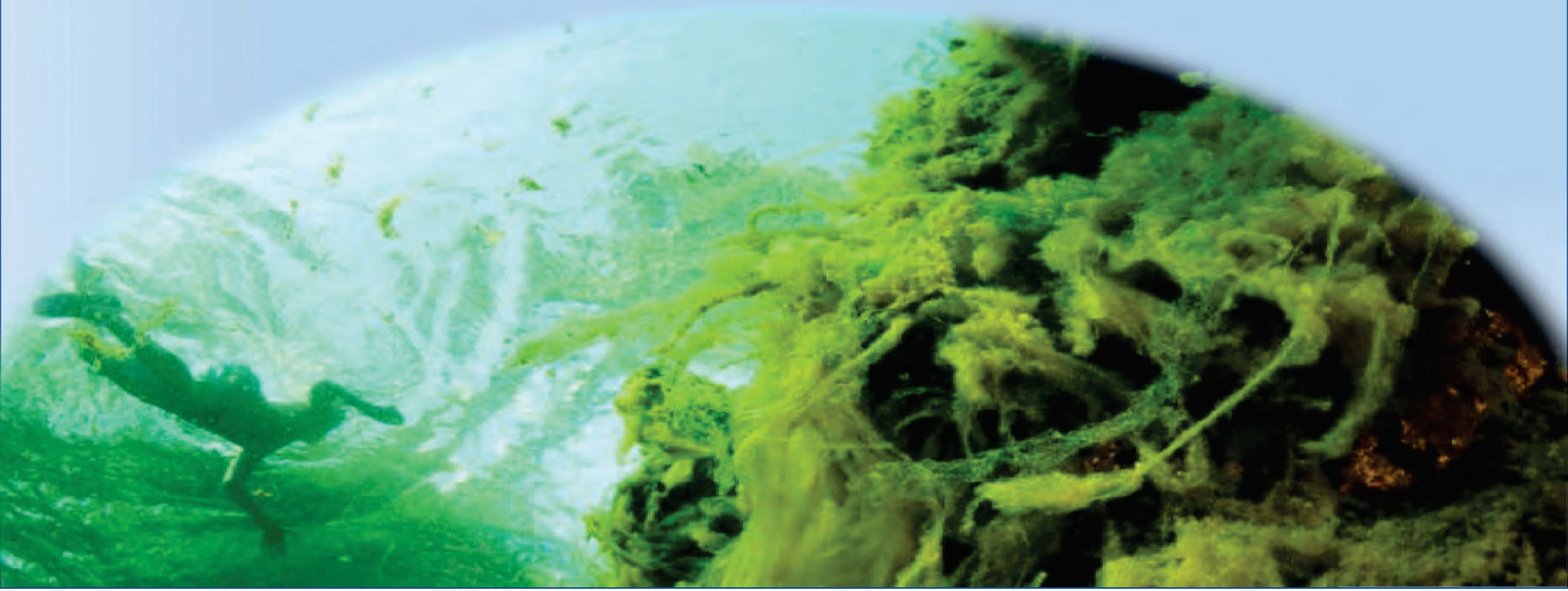

Identified Project Areas
0
3,000
Feet
1:36,000
Cortez Blvd.
Commercial Way
Northcliffe Blvd.
Deltona Blvd.
Mariner Blvd.
A
B
E
50
19
495
550
589
587
572


How Septic Systems Impact Springs
Drain Field
Septic Tank
Filtration
Excessive
Algae
Growth
Spring
Excessive Nitrates
Aquifer
Southwest Florida
Water Management District

Nitrogen Must Be Reduced to Protect Spring Water Quality

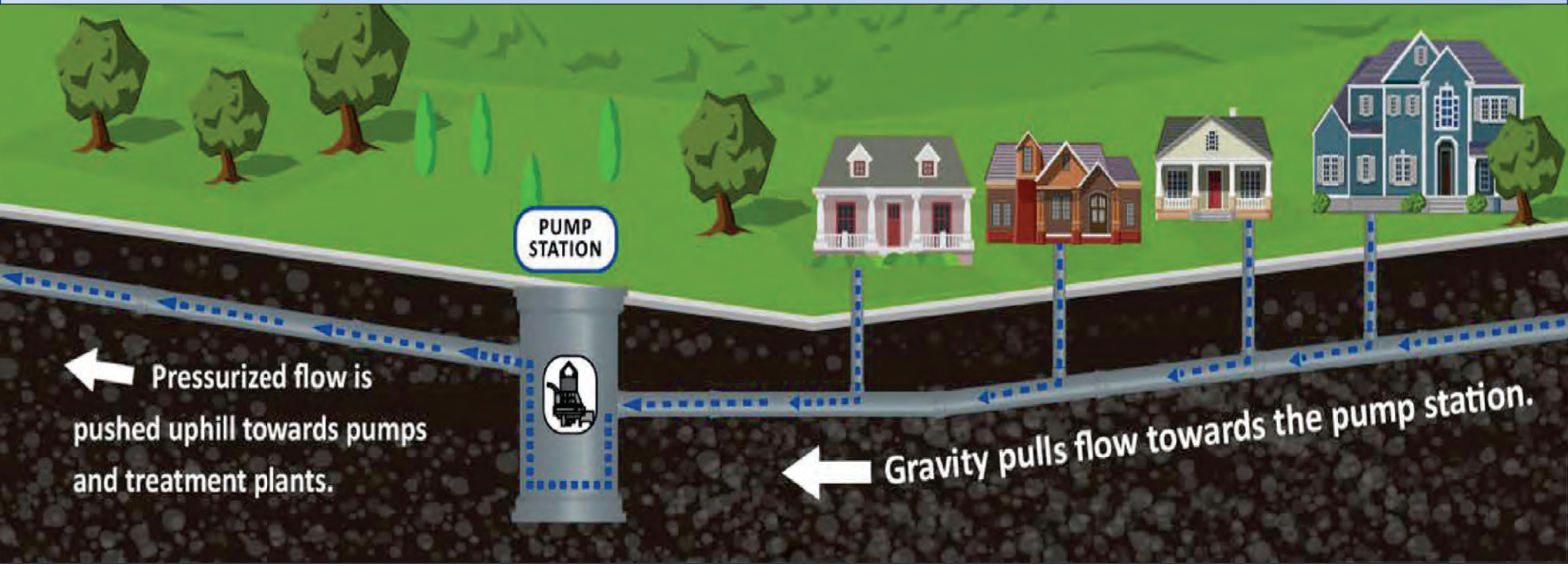
State-Mandated
Septic Tank Remediation Plan
ELEMENTS

- Cost effective projects to reduce nutrient impacts
- Funding from FDEP
- Remediation Plan options



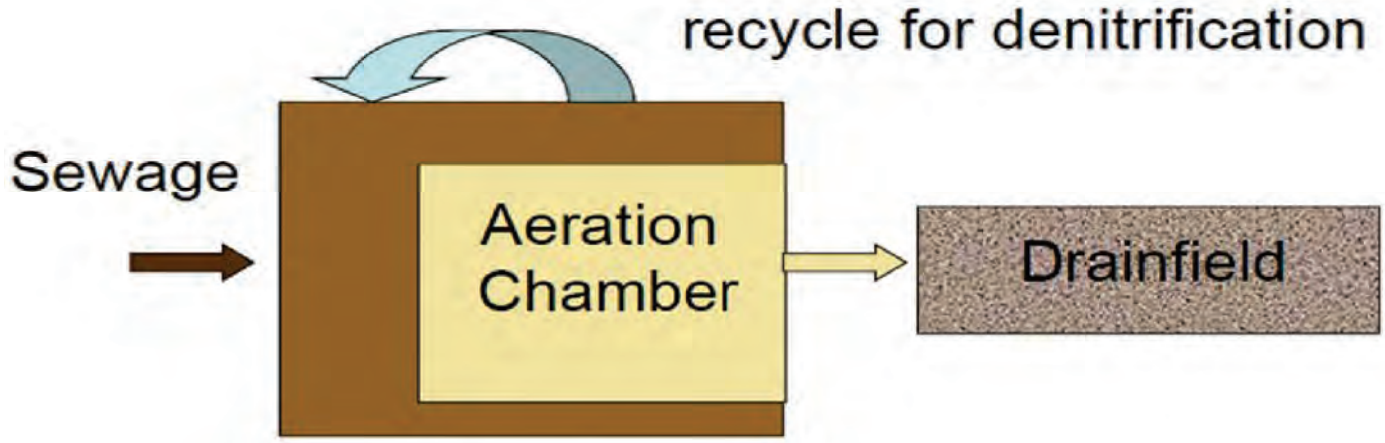
State-Mandated
Septic Tank Remediation Plan
OPTION

- Connect to central sewer system
  - Initial cost to connect, monthly sewer bills



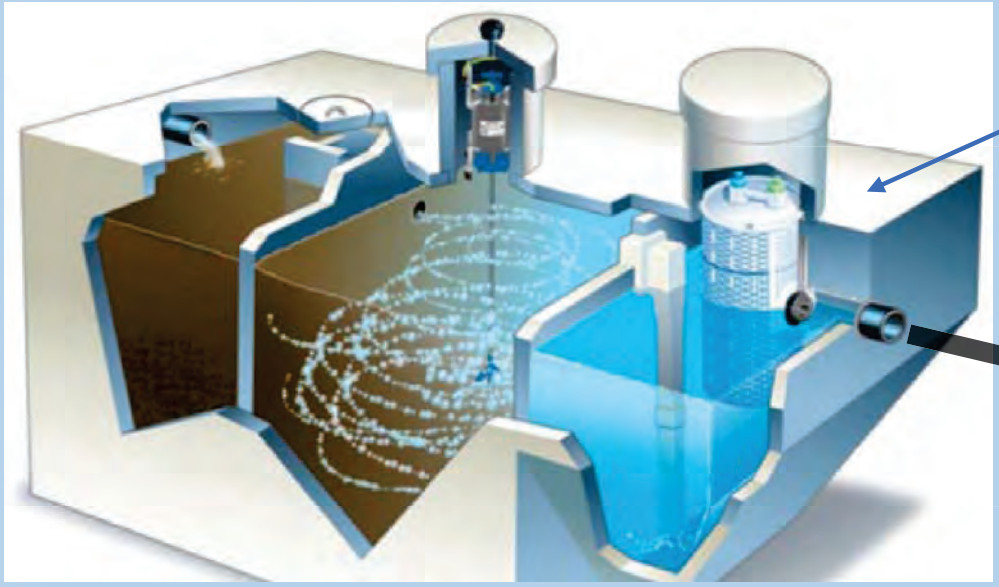
State-Mandated
Septic Tank Remediation Plan
OPTION

- Install a Nitrogen-Reducing Aerobic Treatment Unit
  - Systems require maintenance entities, service contract agreements and operating permits



State-Mandated
Septic Tank Remediation Plan
OPTION

- Install Dispersed Sewer Network
  - Centrally Managed - Performance Based Septic Systems (DWTU) at Each Home
  - Systems require wireless connection and supervision by a professional wastewater operator.



Distributed Wastewater Treatment Unit (DWTU)

Drainfield

Stakeholders in the Process

- Regulatory Agencies (FDEP, SWFWMD, FDOH)
- Local Government
- Business and Industry
- Agriculture
- Utilities
- Residents

We Need Your Input / Comments!

- Current Opportunity-Funding Availability
  - Springs
  - SWFWMD CFI
  - HCUD
  - Property Owner
- Concerns with the Current Plan
- Public Meetings

We Need Your Support!

- ❑ Join the County in its efforts to improve our water quality.
- ❑ Help spread the word about State requirements associated with the with the Florida Springs and Aquifer Protection Act.
- ❑ Let us know how we can improve our communication process.

Questions?

Hernando County Utilities Department

Rick Kirby, P.E.
Engineering Division Manager
Phone: (352) 754-4037 ext. 35147
Email: RKirby@co.hernando.fl.us

Jones Edmunds

Tom Friedrich, PE, BCEE
Phone: (813) 258-0307
Email: TFriedrich@jonesedmunds.com

Terri Lowery
Phone: (352) 377-5821
Email: TLowery@jonesedmunds.com

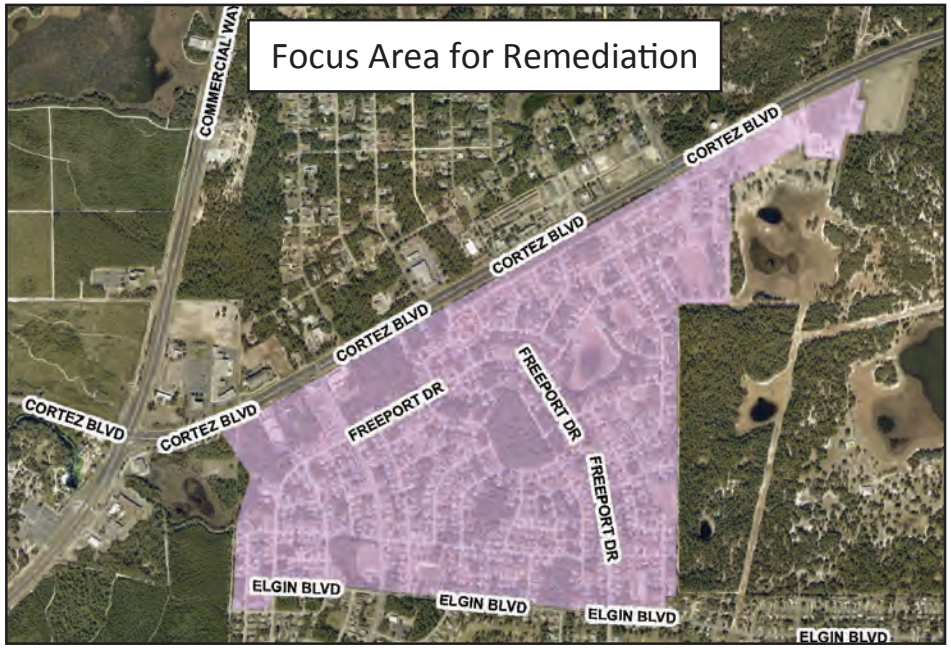
Hernando County Utilities Department
15365 Cortez Boulevard
Brooksville, FL 34613

YOU ARE INVITED:

Public Input Open House

February 4, 2020

When: **Tuesday, February 4, 2020**
Time: **ANY TIME between 4pm and 7pm**
Where: **Sandhill Scout Reservation**
11210 Cortez Blvd., Brooksville



In July of 2016 the Governor signed into law the **Florida Springs and Aquifer Protection Act** to protect 33 Florida springs threatened by excessive nitrate pollution. As a result, Hernando County has been tasked to find ways to comply with the requirements associated with the 2016 legislation. The **State mandated Onsite Sewage Treatment & Disposal System (OSTDS) Remediation Plan** requirement for Weeki Wachee Springs is the driving force for Septic to Sewer Conversion plans. Information to be presented:

- **How the Florida Springs and Aquifer Protection Act affects Hernando County and you**
- **What has been done so far**
- **What this means for residents of Hernando County**
- **Future plans for Hernando County and its residents**

We look forward to your input and feedback regarding the information provided at this important Open House event.

We feel it's important for our residents to be well-informed of potential upcoming changes.

Please visit: www.hernandocounty.us/S2S prior to the meeting

for helpful background information pertaining to the state mandates and how our County can move forward.

We look forward to meeting with you, Hernando County Utilities Department and JonesEdmunds Staff

Appendix E

Interlocal Agreement with Pasco County

INSTR #2017038015 BK: 3485 PG: 408 Page 1 of 15
FILED & RECORDED 7/5/2017 11:10 AM ADM Deputy Clk
Don Barbee Jr, HERNANDO County Clerk of the Circuit Court
Rec Fees: $129.00

15
2

INTERLOCAL WHOLESALE WASTEWATER AGREEMENT

THIS AGREEMENT is made and entered into by and between PASCO COUNTY, a political subdivision of the State of Florida, acting by and through its Board of County Commissioners, the governing body thereof, hereinafter referred to as "PASCO," and HERNANDO COUNTY, a political subdivision of the State of Florida, acting by and through its Board of County Commissioners, the governing body thereof, hereinafter referred to as "HERNANDO."

WITNESSETH:

WHEREAS, PASCO has requested HERNANDO to provide wholesale wastewater service to PASCO for the benefit of some potential new customers located within the PASCO wastewater system; and,

WHEREAS, HERNANDO has requested PASCO to provide wholesale wastewater service to HERNANDO for the benefit for some potential new customers located within the HERNANDO wastewater system; and,

WHEREAS, subject to the conditions and limitations set forth herein, HERNANDO desires to provide wholesale wastewater services to PASCO for the purpose of offering retail wastewater services to existing and proposed developments in North Pasco County along County Line Road; shown in exhibit 1 and,

WHEREAS, subject to the conditions and limitations set forth herein, PASCO desires to provide wholesale wastewater services to HERNANDO for the purpose of offering retail wastewater services to existing and proposed developments in South Hernando County along County Line Road; if requested by Hernando County in the future and,

WHEREAS, CUSTOMER shall mean the County requesting service and SERVICE PROVIDER shall mean the County providing service; and,

WHEREAS, Chapter 163, Florida Statutes authorizes public agencies to enter into cooperative agreements for public purposes.

NOW, THEREFORE, in consideration of the premises which shall be deemed an integral part of this agreement and of the mutual covenants and conditions set forth herein, HERNANDO and PASCO intending to be legally bound thereby, agree as follows:

Section I. Whereas Clauses.

The WHEREAS clauses set forth above are incorporated herein by reference and made a part of this agreement.

Section II. Purpose.

It is the purpose and intent of this agreement to make public wastewater services available to existing and proposed developments located along County Line Road and to provide for assurances of timely payment to the SERVICE PROVIDER of all charges legally assessable under this agreement to compensate the SERVICE PROVIDER for those costs incurred in the provision of such service by the SERVICE PROVIDER including, but not limited to, cost of operation and maintenance, debt service costs, capital costs, renewal and replacement costs, and expansion costs. All terms and conditions contained herein shall be read and interpreted in a manner consistent with and in furtherance of this purpose and intent.

Section III. Wholesale Wastewater Service.

Subject to the conditions and limitations set forth in this agreement, the SERVICE PROVIDER shall provide wholesale wastewater services to the CUSTOMER. The CUSTOMER shall be responsible for making all actual connections of its wastewater systems to the SERVICE PROVIDER wastewater system, including the construction and dedication of the metering facilities at the point of collection by the CUSTOMER to the SERVICE PROVIDER. The location and type of each connection to the SERVICE PROVIDER wastewater system shall be approved, in writing, by the SERVICE PROVIDER's Administrator for Utilities Services,

equivalent, or that person's designee (hereinafter referred to as the "SERVICE PROVIDER staff") prior to the time the work is actually performed. Such work within CUSTOMER County may be supervised and directed by the SERVICE PROVIDER staff and shall meet all applicable State and SERVICE PROVIDER standards. It shall be the responsibility of the CUSTOMER to furnish proof from its Administrator for Utilities Services, equivalent, or that person's designee (hereinafter referred to as the "CUSTOMER staff") to the SERVICE PROVIDER staff that all equipment and materials furnished meet applicable State and SERVICE PROVIDER standards. Any deviation must be approved in writing by the SERVICE PROVIDER staff.

1. The CUSTOMER shall furnish and install, as part of its connection to the SERVICE PROVIDER wastewater system, an appropriate metering device meeting SERVICE PROVIDER specifications at the mutually approved point of connection to those systems for the purposes of determining the amount of wastewater services being provided by the SERVICE PROVIDER pursuant to this agreement. It shall be the responsibility of the CUSTOMER to pay all costs associated with the purchase and installation of such meter(s). The SERVICE PROVIDER shall own, operate, and maintain the meter(s), and the SERVICE PROVIDER shall have the absolute right of access for testing, reading purposes, and for any necessary repairs to maintain the integrity of the SERVICE PROVIDER wastewater system. The CUSTOMER shall also be provided reasonable access to the meter(s) for testing and reading purposes, provided a 48 hour (2 business days) notice is given to SERVICE PROVIDER.

2. The CUSTOMER shall own and maintain in accordance with applicable laws and regulations, solely at its own expense, its facilities on its side of the Point of Collection. The quality of sewage received by the SERVICE PROVIDER from the CUSTOMER pursuant to this Agreement shall always be domestic strength in accordance with the waste parameters as adopted by the SERVICE PROVIDER in all then applicable Ordinances, including Hernando County Code Sec 28-243 (Exhibit 2).

3. The SERVICE PROVIDER shall own and maintain in accordance with applicable laws and regulations, solely at its own expense, all mains, lines, pumps and the other facilities necessary to receive and transport the wastewater to be treated pursuant to this Agreement from the Point of Collection to the SERVICE PROVIDER'S wastewater system.

4. The maintenance to be performed by the SERVICE PROVIDER and the CUSTOMER shall be performed in such a manner as is necessary to meet the standards prescribed by applicable regulatory agencies and to maintain the facilities at the Point of Collection at a level of performance, maintenance and repair which will not adversely affect existing customers of either the CUSTOMER or the SERVICE PROVIDER.

5. Capacity Allocation: This Agreement only relates to providing service to the CUSTOMER service area delineated on Exhibit 1 of this Agreement (the "PASCO Service Area"). The CUSTOMER will apply in writing to the SERVICE PROVIDER, requesting the amount of reserved capacity and wastewater treatment service for a connection. Once the SERVICE PROVIDER has deemed the application complete, the SERVICE PROVIDER will respond within 30 days approving or denying the request. The SERVICE PROVIDER reserves the right to deny a request based on the SERVICE PROVIDER's current or projected availability of capacity. If approved, the amount of capacity to be reserved will be mutually established between the CUSTOMER staff and SERVICE PROVIDER staff and subsequently approved through a Letter of Commitment or equivalent instrument from the SERVICE PROVIDER based on each customer connection under consideration. The "Contracted Capacity" shall be defined as the sum total of reserved capacity approved by the SERVICE PROVIDER. In the event that the 3-month average wastewater flow from the CUSTOMER's Service Area as metered at the

Point of Collection exceeds the Contracted Capacity, the amount of wastewater flow above the Contracted Capacity is defined as Excess Flow and may be subject to additional charges. The additional charges are being imposed upon the CUSTOMER to discourage it from using the SERVICE PROVIDER's wastewater capacity that has not been reserved by CUSTOMER by agreement and which may have been previously allocated to other customers of the SERVICE PROVIDER. The excess service charge for the portion of flow defined as Excess Flow shall be 150% of the then current fees being charged for wastewater treatment service by the SERVICE PROVIDER.

Section IV. Meter Reading and Payments.

1. The SERVICE PROVIDER will calibrate the meter on an annual basis. The SERVICE PROVIDER will invoice the CUSTOMER on a monthly basis in accordance with meter readings taken. The CUSTOMER shall make payment based upon the meter readings within thirty (30) days after receipt of the invoice from the SERVICE PROVIDER. In the event that the payment is not made within forty-five (45) days after receipt of the invoice, the CUSTOMER agrees to pay interest or penalties as established from time to time in the SERVICE PROVIDER's utility system service regulations on any delinquent balance until paid in full. Nothing contained herein, including the charging of interest, shall extend the due date for any payment and any failure to pay on or before the due date shall be considered a default under the terms of this agreement entitling the SERVICE PROVIDER to those remedies set forth in the default section. In the event the CUSTOMER staff disputes the accuracy of any meter reading, it must notify the SERVICE PROVIDER within thirty (30) days of receipt of an invoice. All meter readings not disputed within thirty (30) days of receipt by the CUSTOMER are final and not subject to dispute. In the event the CUSTOMER staff disputes the billing, it shall still pay the amount billed by the SERVICE PROVIDER unless the error is self-evident or obvious when compared to typical average usage and/or historical flows. If it is subsequently

determined, in accordance with the procedure specified below, that the billing is in error, then the CUSTOMER will be reimbursed or credited for any difference within forty-five (45) days of such determination. CUSTOMER shall have the right, with 48 hour notice to SERVICE PROVIDER, to have the meter tested at its own expense. If the CUSTOMER demonstrates that the SERVICE PROVIDER meter is not working properly, then the SERVICE PROVIDER shall be responsible for the cost of testing, repair, or replacement. In the event of any unresolved dispute concerning the meter's performance or accuracy, the parties agree to mutually select an independent testing company qualified to perform appropriate tests upon the meter. The decision of this mutually selected testing company as to the meter's performance or accuracy shall be binding upon the parties. In the event the meter is determined to be accurate within the manufacturer's range of tolerance, then the cost of testing shall be paid by the CUSTOMER. If the meter is determined to be inaccurate and outside the range of tolerances, then the SERVICE PROVIDER shall pay for the cost of testing.

2. Service Rates and Fees: The CUSTOMER agrees to pay the SERVICE PROVIDER as per its approved service rates in effect at the time of billing as established by the SERVICE PROVIDER's Board of County Commissioners for wastewater service. HERNANDO currently does not have an approved Wholesale Wastewater User Rate and has thus developed a rate specific to this agreement until said rate structure has been approved by the HERNANDO's Board of County Commissioners, HERNANDO shall charge the CUSTOMER $4.86 per 1000 gallons of wastewater metered. This approved rate structure will be applied to the agreement and will reflect updates as approved by HERNANDO's Board of County Commissioners.

3. Lease Fees: In addition to the monthly wholesale rate, the parties agree a Lease Fee to reserve service capacity shall be applied in addition to the Service Rates

and Fees. The Lease Fee per customer connection shall be based upon the SERVICE PROVIDER connection fee or impact fee and the meter size:

(Connection Fee or Impact Fee per meter size)/120 = Monthly Lease Fee.

Upon full realization of the SERVICE PROVIDER's connection fee or impact fee for a particular customer connection, the lease fee will no longer be paid to the SERVICE PROVIDER. Meter size is to be determined based upon anticipated buildout of the service area. An increase in meter size shall be considered when there is an unexpected increase in service demand and shall result in additional connection fees to be paid at the rates then in effect at the time of installation of the new meter. Connection fees shall be based upon the water use equivalent for the anticipated average daily wastewater contribution.

4. The CUSTOMER shall provide the SERVICE PROVIDER quarterly reports identifying new service connections and Upgraded Service Connections made during each fiscal quarter by no later than April 30, July 31, October 31, and January 31 of each fiscal year. The SERVICE PROVIDER shall have the right to request and receive from the CUSTOMER documentary support to substantiate the new service connection or Upgraded Service Connection information provided in such report, at no cost to the SERVICE PROVIDER. The SERVICE PROVIDER further shall have the right to audit the CUSTOMER'S books and records associated with such new service connections and Upgraded Service Connections, including the right to retain an independent third party to conduct such audit, at the SERVICE PROVIDER's expense. The CUSTOMER shall cooperate with the SERVICE PROVIDER or its third party designee in the performance of such audit.

Section V. <u>Customer Obligations</u>.

Public Water and Wastewater Systems: The CUSTOMER shall be responsible, at its expense:

(a) For furnishing and installing all lines, valves, and other facilities and appurtenances necessary to tap into or make connection with the SERVICE PROVIDER wastewater system.

(b) For arranging the performance of all investigations and testing required to place said connection equipment into service.

(c) For conveying all such connection equipment installed on the SERVICE PROVIDER side of the meter to the SERVICE PROVIDER for ownership, operation, and maintenance along with sufficient interests in real property necessary to perform such operation and maintenance. Any materials and equipment dedicated to the SERVICE PROVIDER shall be warranted by the CUSTOMER for a period of 12-months from the date of acceptance.

(d) For operating and maintaining all such connection equipment installed on the CUSTOMER side of the meter.

The CUSTOMER shall have the responsibility of securing and maintaining all necessary permits from all governmental agencies having regulatory authority of the CUSTOMER water and wastewater systems. The SERVICE PROVIDER shall have the same responsibility as to its water and wastewater systems.

Section VI. General Provisions.

These conditions are binding upon the successors and assignees of the parties hereto. Whenever one party gives notice to the other party concerning any of the provisions of this agreement, such notice shall be given by certified mail, return receipt required. The said notice shall be deemed given when it is deposited in the United States mail with sufficient postage prepaid (notwithstanding that the return receipt is not subsequently received). Notices shall be addressed as follows:

PASCO COUNTY: Assistant County Administrator (Utilities Services)
Utilities Services Branch
Utilities Administration Building
19420 Central Blvd.
Land O' Lakes, FL 34637-7006

HERNANDO COUNTY: Director of Utilities
Hernando County Utilities Department
15365 Cortez Blvd.
Brooksville, FL 34613

These addresses may be changed by giving notice as provided for in this paragraph.

No waiver of breach of any of the terms of this agreement shall be construed to be a waiver of any succeeding breach.

Section VII. Default.

If either party materially fails or defaults in keeping, performing, or abiding by the terms and provisions of this agreement and does not cure the default within thirty (30) days after the date of a written notice from the nondefaulting party specifying the nature of the default, then this agreement, at the option of the nondefaulting party, shall terminate. In the event the SERVICE PROVIDER elects to terminate pursuant to this section, such termination shall include the cessation of bulk water and wastewater services. Neither party shall be relieved of liability to the other for damages sustained by virtue of any party wrongfully exercising this provision. This paragraph is not intended to replace any other legal or equitable remedies available to any nondefaulting party under Florida law, but it is in addition thereto. Notwithstanding the foregoing, any failure to make timely payments shall be considered a material default under the terms of this agreement without the necessity for any written notice to the CUSTOMER.

Section VIII. Miscellaneous Provisions.

A. In the event the parties' performance of this agreement, other than the payment of money, is prevented or interrupted by consequence of an act of God, or of the public

enemy, or national emergency, allocation, or other governmental restrictions upon the use or availability of labor or materials, rationing, civil insurrection, riot, racial or civil rights disorder or demonstration, strike, embargo, flood, tidal wave, fire, explosion, bomb detonation, nuclear fallout, windstorm, hurricane, sinkholes, earthquake, or other casualty or disaster or catastrophe, unforeseeable failure or breakdown of pumping, transmission, or other facilities, governmental rules or acts or orders or restrictions of regulations or requirements, acts or actions of any government, except the SERVICE PROVIDER, or public or governmental authority, commission, board, agency, official, or officer, or judgment or a restraining order or injunction of any court, the party shall not be liable for such nonperformance, and the time of performance shall be extended for such time period that the party is diligently attempting to perform.

B. The parties hereto agree that from and after the date of execution hereof, each will, upon the request of the other, execute and deliver such other documents and instruments and take other actions as may be reasonably required to carry out the intent of this agreement.

C. This agreement shall not be considered an obligation on the part of the SERVICE PROVIDER to perform in any way other than as indicated herein. The SERVICE PROVIDER shall not be obligated under the terms of this agreement to provide water and wastewater services to the CUSTOMER from areas outside of its service area or areas which are not serviced by the CUSTOMER unless the SERVICE PROVIDER staff issues written notification that it does not object to such additional service.

D. This agreement shall be binding upon the heirs, representatives, and assigns of the parties hereto and the provisions hereof shall constitute covenants running with the land for the benefit of the heirs, representatives, and assigns of the party. However, this agreement shall not be assigned by the CUSTOMER without the express permission of the

SERVICE PROVIDER; however, such consent shall not be unreasonably withheld by the SERVICE PROVIDER.

E. Term. This agreement shall have a term of fifteen (15) years commencing on the date of execution of this agreement. Upon approval of the SERVICE PROVIDER, the CUSTOMER may have the right to renew this agreement for an additional ten (10) years. The CUSTOMER shall notify the SERVICE PROVIDER within six (6) months prior to the expiration of the initial term of its request to renew. Except in the event of default, this Agreement may be terminated by either party without penalty, for any or no reason, by providing the other party two (2) years prior written notice of such termination.

F. Each party acknowledges that it has played an equal role in drafting this agreement and, as a result, in the event of any ambiguity contained herein, the same shall not be construed against or in favor of either party.

G. Filing. A copy of this Agreement shall be filed with the Clerk of the Circuit Court of Pasco County and the Clerk of the Circuit Court of Hernando County, as required by the Interlocal Act.

H. Any dispute, claim or action relating to or arising under this agreement shall be brought solely in the Circuit Court in Hernando or Pasco Counties, Florida. Venue shall be limited to Hernando or Pasco Counties, Florida. This agreement shall be governed by Florida law. Each party hereto agrees to bear their own attorney fees and costs in the event of any dispute. To the extent permitted by law, the respective parties in this instrument agree to and do waive trial by jury in any action, proceeding or counterclaim brought by either of the parties against the other on any matters whatsoever arising out of or in any way connected with this agreement or any claim of damage resulting from any act or omission of the parties or either of them in any way connected with this agreement.

l. This agreement does not create any third party beneficiaries. This agreement confers no rights whatsoever upon any person other than Hernando and Pasco Counties. This agreement does not create and shall not be interpreted as creating any standard of care, duty or liability to any person not a party hereto, except indemnified parties.

IN WITNESS WHEREOF, the parties hereto have hereunto placed their respective hands and seals this 27th day of JUNE, 2017.

BOARD OF COUNTY COMMISSIONERS
OF PASCO COUNTY, FLORIDA

PAULA S. O'NEIL, Ph.D.
CLERK & COMPTROLLER

APPROVED
IN SESSION
MAY 23 2017
PASCO COUNTY
BCC

MIKE MOORE, CHAIRMAN

(SEAL)

ATTEST: by Darlene M. Christensen
Darlene M. Christensen
Deputy Clerk

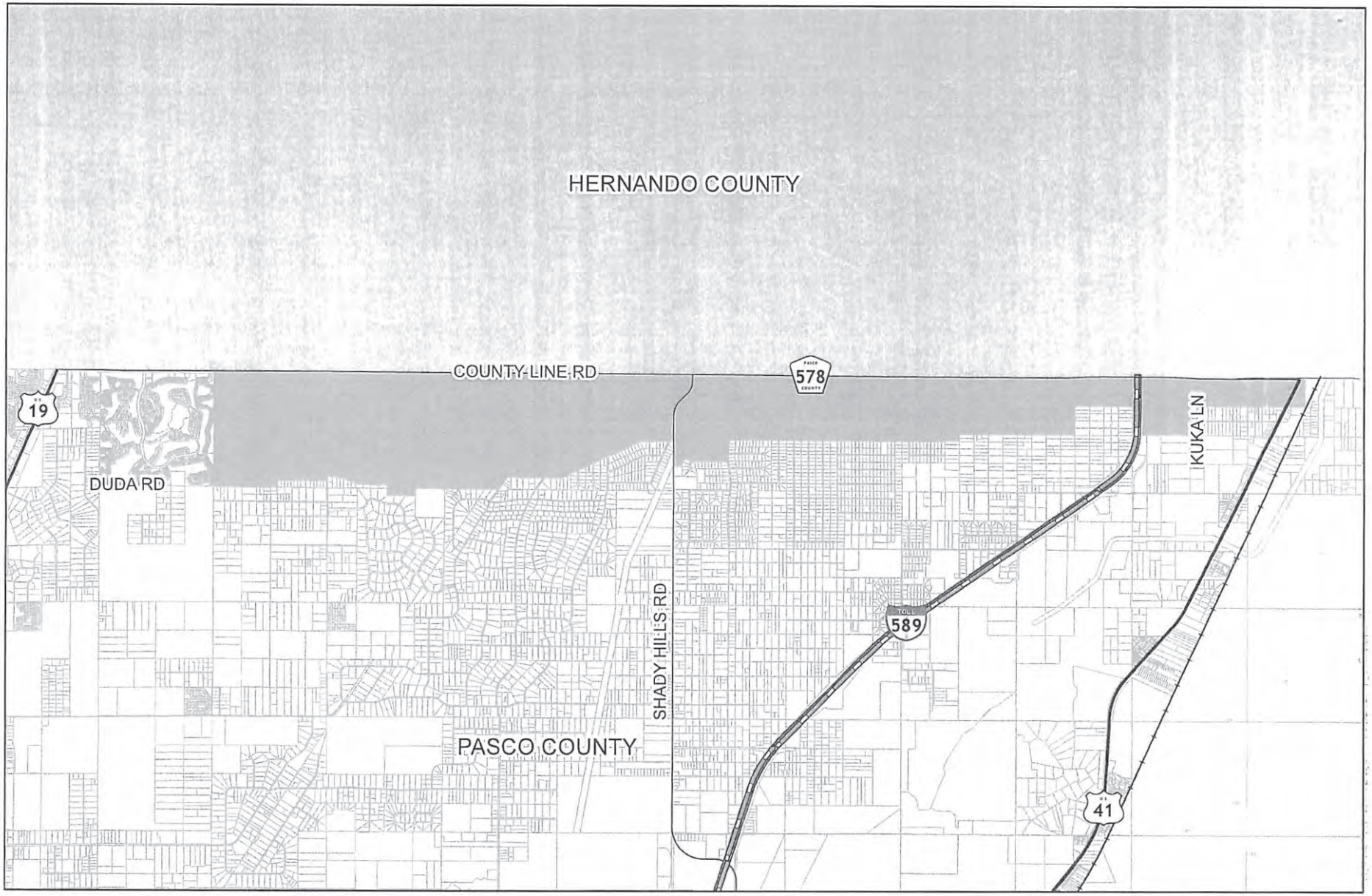
DONALD C. BARBEE, JR.
CLERK & COMPTROLLER

BOARD OF COUNTY COMMISSIONERS
OF HERNANDO COUNTY, FLORIDA

WAYNE DUKES
CHAIRMAN

APPROVED AS TO FORM
AND LEGAL SUFFICIENCY
BY
County Attorney's Office

Exhibit 1



This map is for informational purposes only. The data contained herein is not collected under the supervision of, or approved by, a licensed surveyor. It is not intended for any legal use. The data does not meet the minimum technical standards under the Florida Administrative Code 61G17-6. The Pasco County Board of County Commissioners does not accept any responsibility for errors or omissions of any kind contained in the data herein. All products and derivations from the data contained herein must retain this disclaimer.

Pasco County, Florida
Utilities Administration Office
Geographic Information Systems
(G.I.S.)
19420 Central Blvd.
Land O' Lakes, FL 34637

Pasco Hernando Interlocal Sewer Agreement Map

Author: Gabriel Lama | Date: December 5, 2016

Exhibit 2

Sec. 28-243. - Wastewater effluent requirements.

a)

1) *Pretreatment requirement for non-domestic source pollutants.* Any producer of non-domestic source pollutants that pass through, interfere with, or are otherwise incompatible with the department's wastewater treatment plants and/or systems shall comply with Federal Pretreatment Standards in 40 CFR Part 403 or other applicable federal laws or rules regulating pretreatment for such pollutants, and with any applicable requirements of Florida Statutes or administrative rules or regulations adopted thereunder, as such laws or rules may be amended from time to time, and shall install necessary pretreatment requirements at producer's own expense, prior to connecting to the district sanitary sewer facilities.

2) *County and department review.* County departments or officials with review authority over new industrial use siting or construction, including but not limited to growth and development services or successor agencies, the building official, airport staff and any economic development office, shall promptly notify the department whenever staff of such departments or officials become aware of any existing or potential issue concerning pretreatment for non-domestic source pollutants, and the department shall conduct an independent review and advise any current user or applicant for approval of site or building plans as to the applicability of this section or other relevant provisions of ordinances or state or federal laws, rules or regulations that may affect such use.

3) No substance may be discharged into the sanitary sewers which could be injurious thereto or potentially dangerous to the public or which exceeds domestic waste standards.

b) *Non-sanitary waste prohibited.* There shall be no connections for surface drainage, storm water or any non-sanitary waste into the district's sanitary sewer facilities within or without the limits of the Hernando County Water and Sewer District, nor shall anyone knowingly discharge surface drainage, storm water or any non-sanitary waste into the district's sanitary sewer facilities. As used herein, non-sanitary waste shall be defined as synonymous with the phrase "prohibited discharge" under federal laws, rules or regulations applicable to discharges to publicly owned treatment works.

c) *Fats, oils and greases (FOG).* Any person or entity disposing of fats, oils or greases (FOG), including but not limited to waste petroleum, sand or grease products, through the district sanitary sewer systems shall:

1) Provide for an appropriately sized and configured grease and/or sand trap or other device approved in writing by the department through which the FOG shall pass before entering the district sanitary sewer lines;
2) Obtain approval of such trap or device design by the building official or designee, with advice as may be required or desirable from the department;
3) Provide for connection of such trap or device with the district sanitary sewer line;
4) Provide reasonable access to the department for inspection of such trap or device and pay a surcharge to be established by board resolution for each such inspection, which inspections shall occur when the department deems it reasonably necessary to ensure the continued proper operation of the department's

sanitary sewer lines or mains, either upon notice of deficiencies or pursuant to a regular program of inspections; and

5) Maintain such trap or device in a clean and effective operating condition at all times.

d) *Violations and penalty.* Any person or entity responsible for damage to any component of the wastewater system resulting from a violation of any provision of this section other than subsection (a)(2) shall be liable to the district for all costs reasonably incurred by the district, its contractors or agents in remedying such damage, and restitution for such costs shall be in addition to any fine or other penalty imposed for such violation.

(Ord. No. 2005-19, § 8, 10-18-05; Ord. No. 2007-01, § 1, 1-23-07)

CERTIFIED TO BE A TRUE COPY
DON BARBEE, JR.
CLERK OF COURTS

BY: Sue Burns D.C.

THIS 5TH DAY OF July 2017