

RFP Title: Request for Proposals for Leon County Comprehensive Wastewater Treatment Facilities Plan

Proposal Number:

Opening Date:

**I. INTRODUCTION:**

This Request for Proposals (“RFP”) is soliciting proposals (“Proposals”) from qualified firms to complete an evaluation of alternative wastewater treatment technologies to reduce nitrogen loading to the aquifer and surface waters throughout the Leon County unincorporated area. The outcomes sought from this Plan include the following (details are provided in the Scope of Services Section of this RFP):

- a) Development of regional nitrogen reduction performance criteria to reduce loading to aquifer and surface waters;
- b) Identification of associated construction and operating expenses for recommended technologies with cost-effectiveness analysis relating nitrogen reduction per household to all expenses;
- c) Identification and assessment of technical and physical factors which would guide selection of alternative wastewater treatment technologies in the unincorporated area;
- d) Development of maps to guide implementation of the appropriate technology throughout the unincorporated area; and
- e) Analysis of total annual nitrogen reduction achieved through implementation of recommended alternatives over a planning horizon of 20 years.

**II. PROJECT BACKGROUND:**

The following provides a broad overview of studies, findings, recommendations and actions taken to date to reduce the nitrogen load from domestic wastewater. This summary is by no means exhaustive or a complete recitation. Vendors are strongly recommended to review previous reports, studies, recommendations and current practices prior to submitting their Proposal.

The project goal is the reduction of nutrient loading from onsite sewage treatment and disposal systems (OSTDS) to groundwater and surface water bodies throughout unincorporated Leon County. OSTDS nutrient loadings in Leon County have been linked to surface water quality violations in the Upper Wakulla River, created by the discharge from Wakulla Springs in neighboring Wakulla County. The nutrient loadings are also a concern for surface waters in Leon County which are subject to Total Maximum Daily Loads (TMDLs) for exceeding state nutrient concentration limits.

The Successful Contractor will be required to address the most recent effective documents relative to the Upper Wakulla River Basin Management Action Plan (BMAP), including the OSTDS Remediation Plan, BMAP Update and Nitrogen Source Inventory and Loading Estimates (NSILT) Update.

Leon County is divided by an east to west geological feature known as the Cody Scarp. The Scarp marks an area where the soils change abruptly from red clay in the higher elevation northern section to soft sands in the southern Woodville Karst Plain. There are a large number of closed depressions and sinkholes in the Woodville Karst Plain, which is an unconfined area of the Upper Floridan Aquifer (UFA). Wakulla Springs lies within the Woodville Karst Plain, in Wakulla County. Wakulla Springs is an Outstanding Florida Spring, and is one of the longest and deepest known submerged freshwater cave systems in the world.

**A. State of Florida Activities**

- 1) “Nitrate Loading as an Indicator of Nonpoint Source Pollution in the Lower St. Marks – Wakulla Rivers Watershed” – 2002

The Northwest Florida Water Management District (District) evaluated the increasing concentrations of nitrogen discharged from Wakulla Springs since the 1970’s. Following

investigations of well and surface water quality throughout the contributing area to the Springs, a nutrient budget was developed. The report assumed that:

- a) Under steady-state conditions, the flux of Floridan Aquifer water crossing the Cody Scarp to discharge at Wakulla Springs was 200 cubic feet per second (cfs), approximately one-half the Springs discharge.
- b) The remaining discharge of 180 cfs is due to recharge to the Floridan Aquifer in the vicinity of the Springs.
- c) The nitrate concentrations in Floridan Aquifer water crossing the Cody Scarp from the semi-confined area up-gradient was determined to be 0.48 mg-N/L.
- d) The Floridan Aquifer ground water discharging from the Springs was established as 0.89 mg-N/L.

The report concluded that:

- e) Nitrate concentrations beneath the semi-confined areas of Leon County had been constant or slightly increasing over the period of 1980 to 2000. Consequently, the flux of nitrate-N from the semi-confined Florida Aquifer into the unconfined Floridan Aquifer (along the Cody Scarp) had been relatively constant over this period.
- f) Analysis indicated that the increase in nitrate-N output at Wakulla Springs was largely attributable to nitrogen inputs south of the Cody Scarp.
- g) Wastewater treatment facilities (WWTF), residuals management and OSTDS were determined to be the primary anthropogenic sources of loading to the land surface.

2) Wakulla Springs Total Maximum Daily Load - 2012

Research by the District and the Florida Department of Environmental Protection (FDEP) determined that increased nitrate loadings in the groundwater discharged at Wakulla Springs are the primary cause for the decline in the water quality and biological health of the Upper Wakulla River. In 2012, the FDEP adopted a Total Maximum Daily Load (TMDL) of a monthly average nitrate target of 0.35 mg/L in the Upper Wakulla River to restore a healthy biological community.

There are no National Pollutant Discharge Elimination System (NPDES) wastewater or Municipal Separate Storm Sewer System (MS4) sources discharging to the Upper Wakulla River. Consequently, no wasteload allocations were made to point sources. A load allocation reduction of 56.2% was assigned to nonpoint source areas contributing to the Upper Wakulla River, although it was noted that the target concentration may be met before achieving the percent reduction.

3) The "Nitrogen Source Inventory and Loading Estimates for the Wakulla Spring Contributing Area" report prepared by the FDEP Groundwater Management Section in 2014 ("2014 NSILT") results are summarized in Table 1 below, excerpted in full from the report. The report identifies:

- a) Three zones of aquifer confinement (groundwater recharge areas) exist within Leon County which affect the attenuation of nitrate loading from surface inputs. These zones are unconfined, where nitrate loadings are multiplied by a higher weighting factor (0.9) than the semi-confined (0.4) or confined (0.1).
- b) Environmental attenuation factors are applied to the various loading sources to the UFA to reflect uptake by vegetation and soils. The wastewater attenuation factors range from 60 percent for wastewater treatment facilities to 40 percent for OSTDS. Additional information is provided in Table 1 below.
- c) Most OSTDS lie within the unconfined or semi-confined areas of the basin and have the lower attenuation factor.

- d) OSTDS are identified as the largest source of nitrogen loads to the UFA, after applying basin-wide attenuation and recharge factors, at 51 percent of the load.

Table 1: Estimated nitrogen inputs and loads to UFA in Wakulla Spring and River BMAP Area

	Confinement	NITROGEN LOADING CATEGORIES (Inputs and Loads in kg/yr)							Totals
		Atmospheric Deposition	WWTFs	Septic Tanks	Farm Fertilizer	Urban Fertilizer	Livestock	Sinking Streams	
<b>INPUTS</b>	Unconfined	339,424	54,219	195,871	2,831	27,470	54,348	46,140	<b>720,303</b>
	Semi-confined	263,138	12,546	246,395	102,117	111,705	69,368	N/A	<b>805,268</b>
	Confined	358,313	7,143	173,198	455,837	87,029	215,230	N/A	<b>1,296,750</b>
	<b>Total Inputs (kg-N/yr)</b>	<b>960,875</b>	<b>73,907</b>	<b>615,463</b>	<b>560,784</b>	<b>226,204</b>	<b>338,946</b>	<b>46,140</b>	<b>2,822,321</b>
<b>ATTENUATION FACTORS APPLIED</b>	<i>Attenuation Factors</i>	90%	60%	40%	70%	80%	75%	20%	
	Unconfined	33,942	21,688	117,522	849	4,945	13,587	36,912	<b>229,995</b>
	Semi-confined	25,648	5,018	147,189	23,433	22,188	17,342	N/A	<b>249,487</b>
	Confined	32,262	2,759	100,839	102,391	16,837	52,460	N/A	<b>350,572</b>
	<b>Total After Attenuation (kg-N/yr)</b>	<b>91,853</b>	<b>29,465</b>	<b>365,550</b>	<b>126,672</b>	<b>44,519</b>	<b>83,389</b>	<b>36,912</b>	<b>752,997</b>
<b>LOADS TO UFA (RECHARGE FACTORS APPLIED)</b>	<i>Recharge Factors</i>								
	Unconfined (90%)	30,548	19,519	105,770	764	4,945	12,228	33,221	<b>206,995</b>
	Semi-confined (40%)	10,526	2,007	59,135	12,254	8,936	6,937	N/A	<b>99,795</b>
	Confined (10%)	3,583	286	10,392	13,675	1,741	5,381	N/A	<b>35,057</b>
	<b>TOTAL LOADS TO UFA (kg-N/yr)</b>	<b>44,657</b>	<b>21,812</b>	<b>175,297</b>	<b>26,693</b>	<b>15,622</b>	<b>24,546</b>	<b>33,221</b>	<b>341,847</b>

Source: 2014 Florida Department of Environmental Protection Report, Nitrogen Source Inventory and Loading Estimates for the Wakulla Spring Contributing Area, Table 13, Page 30

- 4) Upper Wakulla River Basin Management Action Plan (BMAP) - 2015
  - a) Following adoption of the Upper Wakulla River TMDL, the FDEP started development of a BMAP to identify the necessary steps to restore the healthy biological system. The BMAP area encompasses 1,325 square miles within the state of Florida which contributes to the UFA discharging at Wakulla Springs. The BMAP area includes most of Leon County.
  - b) The target nitrate concentration of 0.35 mg/L is applied to the Wakulla Main Tunnel discharge at the Edward Ball Wakulla Springs State Park. The FDEP and the NFWFMD monitor nitrate + nitrite levels at the discharge as part of the BMAP implementation. Data indicate a decrease from peak of 1.10 mg/L in October 2001 to 0.41 mg/L in June 2017.
  - c) The BMAP established two Primary Focus Areas (PFAs) for the implementation of management strategies, accounting for a split groundwater flow between Wakulla Springs and the Spring Creek Springs group in Apalachee Bay. PFA 1 discharges to Wakulla Springs under both scenarios while PFA 2 discharges to Wakulla Springs only during the low flow conditions from Spring Creek Springs. PFA 1 includes both Leon and Wakulla counties while PFA 2 lies only in Wakulla county.

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- d) The focus of the BMAP is reducing nitrate loadings from sources upgradient from Wakulla Springs as documented in the NSILT report. The target for reductions are anthropogenic sources, primarily WWTF and OSTDS. The City of Tallahassee, Talquin Electric Cooperative, the Leon County School Board and other independent entities operate WWTF within Leon County. Leon County government does not operate any WWTF.
  - e) The BMAP includes a number of management strategies proposed by stakeholders to assist in achieving the necessary nitrate reductions. One of the strategies committed to by Leon County government was construction of central sewers in the Primary Springs Protection Zone (PSPZ), subject to annual budget and appropriation, utilizing funds from the County's share of the 2020 Sales Tax Extension. Strategies focused on OSTDS management included:
    - i) a GIS inventory of all septic systems in Leon County (complete);
    - ii) revision to the septic tank ordinance to require repairs to have a minimum 24-inch separation between drainfield and seasonal high water table (complete); and
    - iii) amend the code of laws to require appropriate nitrogen reducing OSTDS for new construction in the PSPZ (not complete).
  - f) The BMAP incorporates an OSTDS Initiative with the objective to "identify effective, financially feasible strategies to reduce existing loading and prevent future nutrient loading from OSTDS sources" to be described in an OSTDS Remediation Plan. Strategies to be considered include connection of existing development to central sewer as described above, requirements for new development to connect to central sewer, the use of cluster systems, the use of alternative technologies recommended by FDOH's Nitrogen Reduction Study, educational strategies, or other strategies that may be appropriate. The Initiative is to consider the inventory and geographic distribution of OSTDS in the priority areas such as the Leon County PSPZ, including both existing systems and areas where future growth is expected. Leon County participates in the OSTDS Remediation Committee formed by the FDEP to provide input in the preparation of the Initiative, together with representatives of Wakulla County, the City of Tallahassee, Talquin Electric Cooperative (water and sewer utility) and other local stakeholders.
  - g) FDEP is required by statute to adopt a BMAP update and the OSTDS Remediation Plan by July 2018. A "Draft Revised Nitrogen Source Inventory and Loading Estimates for the Upper Wakulla BMAP Area" was released in November 2017 to assist in this effort. The Successful Contractor will be required to address adopted agency action as part of the Project Scope of Work.
- 5) "Effects of Septic Systems in the Lake Jackson Watershed"
- The Northwest Florida Water Management District (District) evaluated the Lake Jackson Watershed in 1999 following the identification of elevated fecal coliform levels in the lake during stormwater sampling events. The report (Water Resources Special Report 00-2) was published in November 2000. As Lake Jackson discharges directly into the Floridan Aquifer as a consequence of the karst features in the lake bottom, consideration was given regarding the impact to the surface water quality of the lake as well as the impact to the UFA. The District noted frequent disconnects of graywater sources from septic tanks as well as some failures of OSTDS. Final recommendations were for public education and monitoring of water quality for further degradation before considering installation of central sewer.
- 6) Florida Onsite Sewage Nitrogen Reduction Strategies Study
- The Florida Department of Health (FDOH) was directed by the Florida Legislature in 2008 to contract for development of cost-effective nitrogen reduction strategies for OSTDS. The project, completed

in December 2015, focused on the development of passive nitrogen reduction technologies, and the evaluation and prediction of the fate and transport of the OSTDS nitrogen. “Passive technology” was defined as using no mechanical components other than one effluent pump and using a reactive media, such as wood chips or sulfur, to reduce nitrogen concentrations. Pilot testing identified two-stage biofiltration as the most operationally simple, effective, and applicable system for prototype testing. The prototype testing results indicated an average 85% nitrogen reduction prior to discharge to the drainfield. The media used in the systems have a life expectancy of up to 50 years. The researched systems have not yet been adopted by departmental rule (Chapter 64E-6, F.A.C.).

7) Florida Legislative Activity – Chapter 2016-1

The 2016 Florida Legislature passed SB 552 which included specific prohibited activities within a Priority Focus Area for an Outstanding Florida Spring. The prohibitions relevant to this solicitation are quoted here from Section 28 of the bill:

- a) New domestic wastewater disposal facilities, including rapid infiltration basins, with permitted capacities of 100,000 gallons per day or more, except for those facilities that meet an advanced wastewater treatment standard of no more than 3 mg/L total nitrogen, expressed as N, on an annual permitted basis, or a more stringent standard if the department [FDEP] determines the more stringent standard is necessary to attain a total maximum daily load for the Outstanding Florida Spring.
- b) New onsite sewage treatment and disposal systems on lots of less than 1 acre, if the addition of the specific systems conflicts with an onsite treatment and disposal system remediation plan incorporated into a basin management plan in accordance with s. 373.807(3).

8) OSTDS Permitting Activities by FDOH Leon County Environmental Health Unit

Leon County government funded a local inventory of wastewater treatment methods by parcel. The initial project was complete in 2015, and has been maintained by Tallahassee-Leon County Geographic Information Services (TLC-GIS) since that time. The inventory identified the following breakdown for developed properties in Leon County, the PSPZ and PFA 1:

<b>Table 2: Wastewater Method Inventory by Parcel</b>			
	<b>Countywide</b>	<b>PSPZ</b>	<b>PFA 1</b>
Septic or Likely Septic	32,112	5,687	5,312
Sewer or Likely Sewer	62,216	2,816	3,579

Over 65 percent of OSTDS permitting activities within Leon County in the past five years are classified as “repairs” to existing systems, with only 20 percent associated with new systems. Table 3 below identifies the activities for the five year period beginning January 1, 2012 extending through December 31, 2016.

<b>Table 3: OSTDS Permits: January 2012 through December 2016</b>								
<b>Classification</b>	New	Existing New	Existing	Existing Modification	Repair	Existing Repair	Abandonment	<b>TOTAL</b>
<b>Number</b>	663	10	3	82	2,216	13	341	<b>3,328</b>

**B. Leon County Activities**

- 1) The Tallahassee-Leon County Comprehensive Plan was first adopted in 1990.
  - a) The Growth Management/Urban Services Area (USA) Objective 1.1 of the Land Use Element [L] established that the location and size of the USA shall be based upon the area necessary to accommodate 90% of new residential dwelling units within the County by the Plan Horizon; the ability to provide urban infrastructures, and, the presence of environmentally sensitive lands and water bodies, requiring protection from the impacts of urban development.
  - b) Policy 1.1.1: [L] directs that new development shall be concentrated in the urban service area plus in the Woodville Rural Community future land use category and the rural communities of Capitola, Chaires, Ft. Braden and Miccosukee, as designated on the future land use map.
  - c) Policy 1.1.4: [L] allows for the provision of central water and sewer in areas designated as Rural community, Woodville Rural Community, and enclaves within the Woodville Rural Community designated for Residential Preservation on the future land use map.
  - d) Policy 2.1.8: [L] establishes the residential densities range by Future Land Use Category, shown in Table 4 below:

Table 4: Residential Densities Range		
Future Land Use Category	Maximum Gross Density - Dwelling Units (DU)/Acre (AC) <sup>1</sup>	Minimum Gross Density Dwelling Units (DU)/Acre (AC)
Rural	1 DU/10 AC	No minimum
Urban Fringe	1 DU/3 AC (standard) or 1 DU/3 AC (Conservation subdivision)	No minimum
Urban Residential	10 DU/AC	4 DU/AC
Urban Residential 2	20 DU/AC <sup>2</sup>	No minimum
Village Mixed use	20 DU/AC <sup>2</sup>	No minimum
Suburban	20 DU/AC <sup>2</sup>	No minimum
Planned Development	20 DU/AC <sup>2</sup>	No minimum
Bradfordville Mixed Use <sup>2</sup>	20 DU/AC	No minimum
Central Urban <sup>2,3</sup>	45 DU/AC	No minimum
Activity Center <sup>2,3</sup>	45 DU/AC	No minimum
University Transition <sup>2,3</sup>	50 DU/AC	No minimum
Central Core <sup>2,3</sup>	150 DU/AC	No minimum
Rural Community	4 DU/AC	No minimum
Residential Preservation <sup>2</sup>	6 DU/AC	No minimum
Lake Talquin Recreation /Urban Fringe <sup>4</sup>	1 DU/3 AC (standard)	No minimum
Lake Protection <sup>4</sup>	1 DU/2 AC (standard)	No minimum
Notes:		

- 1: Maximum gross density is based on the gross acreage of the site and may not be achievable after addressing applicable land development regulations (e.g., parking, stormwater, and other regulations that may limit maximum development potential).
- 2: Density ranges can be increased up to 25% above the maximum limits listed above for the purpose of providing affordable housing units, consistent with Policy 2.1.14[LU].
- 3: Density ranges can be increased up to 35% above the maximum limits listed above for the purpose of encouraging infill development and redevelopment consistent with Mobility Element Policy 1.1.10 [M].
- 4: Clustering Option Available

- e) The Land Use Plan establishes policies and guidance for the mapping of Future Land Use Categories as depicted on the Future Land Use Map. These categories are more fully described in Policies 2.2.1 through 2.2.25 [L]
  - f) The Groundwater Protection Objective 4.2 of the Conservation Element [C] required the establishment of a Primary Springs Protection Zone (PSPZ) for Wakulla Springs. Policy 4.2.5: [C] states that the preferred method of wastewater treatment in the PSPZ within the Woodville Rural Community and the USA shall be connection to sewer facilities designed to achieve Advanced Wastewater Treatment standards. When connection to sewer is not available, new development and redevelopment in the PSPZ shall use performance based OSTDS as defined in Policy 1.2.6: [SS]. Existing traditional OSTDS shall be upgraded to performance based OSTDS at the time of failure, allowing for alternatives for low-income households.
  - g) The Utilities: Sanitary Sewer Element [SS] addresses wastewater treatment including central sewer and septic tanks. Policies address the minimum lot size for OSTDS, the requirement for nitrogen reducing performance based OSTDS in the PSPZ, locations to receive central sanitary sewer, and the criteria for the use of an OSTDS or package plant. Policy 2.1.3: [SS] requires new developments to connect to central sewer if such service is defined as available within the current Water and Sewer Agreement between the City of Tallahassee and Leon County. Policy 2.1.5: [SS] addresses the City of Tallahassee's development and maintenance of a 20-year master plan for major sewer infrastructure facilities and services, based on the Future Land use Plan and its expected population within the USA.
- 9) In 2006, the Leon County Board of County Commissioners (BOCC) authorized an aquifer assessment model of the Florida Aquifer to identify areas which are more vulnerable to contamination from the land surface. The Leon Aquifer Vulnerability Assessment (LAVA) was accepted by the BOCC in 2007. The LAVA model was used to establish the PSPZ in the Woodville Karst Plain where the aquifer was determined to be most vulnerable to surface contamination.
- 10) Leon County utilized a citizens advisory committee to assist staff in developing ordinances relating to OSTDS management and assisting property owners to fund upgraded systems. The committee established a draft ordinance to require nitrogen reducing performance-based treatment systems (PBTS) within the PSPZ for new construction and to replace failing conventional systems where central sewer was not available. In response to public concerns, a revised draft ordinance was prepared to require PBTS, equivalent cluster systems, or central sewer for new construction and when conventional systems were being modified. The draft ordinance provided for a financial hardship exemption and other funding options to address the burden to property owners. During the course of the Committee's activities, the BOCC joined with the City of Tallahassee and Wakulla

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County to initiate a feasibility study of Onsite Sewage Treatment and Disposal and Management Options to reduce nitrate loads to Wakulla Springs. Consequently, the Committee's final report was accepted but no action was taken to enact the ordinance.

- 11) The joint Leon County, City of Tallahassee, and Wakulla County study of Onsite Sewage Treatment and Disposal and Management Options was completed by Lombardo Associates, Inc. (LAI) in November 2011. LAI was contracted to perform a feasibility study with the goal of reducing nitrate load to Wakulla Springs from OSTDS, in consideration of the local economic, social, soil and environmental conditions, as well as political and government structures and other conditions and circumstances the Contractor deemed appropriate. LAI evaluated a number of reports listed above including a study prepared by the U.S. Geological Survey for the City of Tallahassee, Nitrate-N Movement in Groundwater from the Land Application of Treated Municipal Wastewater and Other Sources in the Wakulla Springs Springshed, Leon and Wakulla Counties, Florida, 1966-2018 (Scientific Investigations Report 2010-5099) to develop a comparison between the nitrate loads to the ground surface under 2007 and 2018 conditions in order to recommend reduction targets from OSTDS. The USGS field investigation focused on 500 square miles incorporating Wakulla Springs and other local springs, the City of Tallahassee's Southwest Farm Sprayfield adjacent to the City airport and the City's Southeast Farm Sprayfield. The USGS model then established the fate of nitrogen applied to the land surface from sources upgradient of the model boundary as an established "Inflow" and sources within the model boundary to determine the relative impacts from the sources. LAI concluded that reduction should be focused on the unconfined aquifer area south of the Cody Scarp, within the USGS Study Area, with a target of 29 percent reduction in OSTDS loading.

LAI evaluated alternative treatment technologies where central sewer is not available. Technologies ranged from advanced onsite systems serving individual structures to cluster systems serving localized areas of development. The conclusion was a recommendation to require treatment to 3 mg -N/L for all OSTDS in the Scenario 1 portion of the USGS Study Area. All other areas may remain with properly inspected and maintained conventional OSTDS, based on 79 percent or higher natural nitrogen attenuation or lack of discharge to Wakulla Springs. The City of Tallahassee Master Sewer Plan Target Areas for the Lake Munson Area and the Woodville Rural Community were deemed to be candidates for central sewer extension based on a life cycle \$/kg/yr nitrogen removal basis. The Lake Bradford area was recommended for consideration of sewerage. Further evaluation was recommended to establish limits for advanced treatment cluster and advanced treatment onsite systems in the vicinity of the City of Tallahassee Southeast Farm Sprayfields, Springhill Road, and the Woodville Community.

- 12) Leon County government has received four "septic-to-sewer" projects in the PSPZ through the State of Florida Springs Restoration Grant Program. Three have received design and construction funds: Woodside Heights neighborhood; Northeast Lake Munson area; and the Belair/Annawood area. The Woodville Rural Community has received design funds only. These projects target approximately 2,000 OSTDS for replacement with central sewer.
- 13) Leon County government has received a Springs Restoration Grant for a Passive Onsite Sewage Nitrogen Reduction Pilot project with the District, FDEP and FDOH. The project intent is to install passive OSTDS upgrades for further evaluation of the innovative technology identified during the

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FDOH study, verifying the nitrogen reduction achieved in local conditions. The pilot project is to occur in the vicinity of the Woodville Rural Community.

14) In addition to the declining health of Wakulla Springs and the Upper Wakulla River, streams and lakes within Leon County are demonstrating the impact from nutrient loading to surface waters. Jackson Heights Creek, a tributary entering Lake Jackson, has an adopted federal TMDL for phosphorus reduction to 0.15 mg/L. Lake Munson has an adopted state TMDL for nitrogen reduction by 32.5 percent and phosphorus reduction by 76.7 percent. Lake Talquin has a proposed state TMDL for nitrogen reduction by 27% and phosphorus reduction by 33%.

15) County Quick Facts: The following information (Table 5) is obtained from the most recent Statistical Digest, compiled by the Tallahassee – Leon County Office of Economic Vitality.

Population; 2017 est.	97,858
2040 forecast	107,600
Housing unit inventory; 2017 est.	41,182
2040 forecast	45,730
Land area (2016)/square miles	563.37
Persons per household; 2017 est.	2.63
Median household income; 2017	\$66,209
Median home value; 2017	\$214,749

C. Joint City of Tallahassee and Leon County Activities

- 1) The City and Leon County entered into the Water and Sewer Agreement on May 10, 2005. The City was granted an exclusive franchise to provide water and sewer to all properties located within the County that are not located within an existing or applied for franchise area. Target areas for water and/or sewer service were established for the Woodville Community, Centerville Trace Subdivision and Harbinwood Subdivision. (Note: the Harbinwood Subdivision lies within the area assessed by the District for septic tank impacts to Lake Jackson.) The document establishes the basis to determine the availability of City water and sewer service for new development; the requirement that standards for design and construction of water and sewer systems by providers other than the City shall be at least equal to those of the City; and the provision to revoke the City's franchise where service is determined to be unavailable in favor of other providers, or for the use of OSTDS and on-site potable wells.
- 2) The Water and Sewer Agreement also provides for County approval of the City's long range Master Plans, most recently updated for 2035, for water and sewer service within the franchise area. Thirteen Unsewered Target Areas in unincorporated Leon County are identified in the Master Sewer Plan with cost estimates for central sewer service. The following areas will remain designated for central sewer: Woodville Rural Community; Lake Munson/Four Points; Harbinwood Estates; and Centerville Trace. The remaining nine Unsewered Target Areas will be evaluated for alternative wastewater technologies as described in the Scope of Services.

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- 3) In 2012, the City and County Commissions, acting as the Blueprint Intergovernmental Agency (IA), established a Sales Tax Committee to assist in determining potential uses of extending the one cent sales tax for infrastructure and economic development. The Sales Tax Committee evaluated proposals from the City of Tallahassee, Leon County and community groups. One project proposed by the Water Resources Committee was to implement recommendations from the 2011 LAI project, entitled "Creating Comprehensive Wastewater Management for Leon County Unincorporated Area: Nitrogen Reduction and Infill Development". The project consisted of:
- a) Part I: Wastewater Management Plan and Execution at a cost of \$2.8 million
    - i) Evaluate options to establish a Level 4 or 5 Responsible Management Entity (RME), including scope, administrative structure and financing
    - ii) Adopt preferred options and establish the RME
    - iii) Establish regulations for a wastewater treatment standard, and requirement for connection to facilities when available
    - iv) Develop a Wastewater Treatment Facilities Plan for the PSPZ for the appropriate scale, capacity and location of sewer, cluster and septic tanks; including engineering standards for privately built facilities
    - v) Establish a Facilities Financing Plan relying on grants and sales tax for capital expenses and establishing user fees for operation and maintenance
    - vi) Determine engineering standards for stormwater treatment to achieve nitrogen reduction in the PSPZ and determine flooding patterns in the Woodville Basin to guide development permitting and stormwater facilities
  - b) Part II: Wastewater Treatment Facilities Plan Execution with \$2.2 million for a demonstration cluster facility to serve approximately 100 parcels in the PSPZ and \$50-60 million for residential retrofit or new residential development to support nitrogen standards through the use of sewer, cluster and retrofit of septic tanks.
  - c) Part III: Connection Assistance Funding at a cost of \$2 million to assist owners of existing structures with the cost of connecting to existing sewers in the City of Tallahassee or the unincorporated area.

The IA elected to fund \$2.8 million for the Alternative Solutions Study at their April 22, 2014 meeting. The IA subsequently voted to initiate the Comprehensive Wastewater Treatment Facilities Plan (CWTFP) at their June 13, 2017 meeting. Leon County was designated to implement the CWTFP as the jurisdiction responsible for the unincorporated area affected by the Plan.

### **III. Scope of Services**

The County and the IA are seeking to develop a Comprehensive Wastewater Treatment Facilities Plan (CWTFP) to guide selection of wastewater treatment technologies outside of the City of Tallahassee, where central sanitary sewer is the selected treatment method. The alternatives to be evaluated are conventional and advanced treatment OSTDS, cluster systems and central sewer. The options and cost information are to be sufficiently detailed to provide direction for wastewater retrofit as well as to guide new development within the 20 year plan horizon.

The successful Contractor will develop the CWTFP with the goal of reducing nutrient impacts to surface and ground water throughout the unincorporated area and Wakulla Springs, in consideration of the local environmental and soil conditions, technical feasibility, government structures and other conditions and circumstances the Contractor deems appropriate:

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- 1) Establish the appropriate target percent nitrogen reduction rate relative to conventional OSTDS, utilizing attenuation and loading factors provided in the 2014 FDEP NSILT report (or most recent adopted agency action). Document criteria used to establish recommended targets and associated land areas in unincorporated Leon County. Consideration shall be given to the following criteria:
  - a) Recommendations from adopted OSTDS Remediation Plan (if applicable)
  - b) Site location within BMAP PFA 1 and PSPZ;
  - c) Areas where the UFA is unconfined, semi-confined, and confined as designated by the 2014 FDEP NSILT report;
  - d) Karstic areas as designated by the 2007 LAVA map;
  - e) Proximity to surface waters with documented nutrient impacts;
  - f) Location relative to the Urban Services Area or Rural Communities;
  - g) Location within four Unsewered Target Areas defined by the City of Tallahassee Master Sewer Plan in Paragraph 3 below;
  - h) Density of existing and future land use; and
  - i) Locations served by existing wastewater treatment facilities.

Deliverable will be a report of the classification system and map of the recommended nitrogen reducing performance criteria for existing development retrofit and minimum standards for new development. Land use shall be based on existing zoning and on build-out conditions for future land use.

- 2) Evaluate cost-effectiveness of alternative technologies to achieve target percent nitrogen reduction. Costs shall be calculated for expense per kilogram-N reduced relative to conventional OSTDS, and shall include:
  - a) Design and permitting expenses;
  - b) Construction of treatment system;
  - c) Construction of collection system and connections as appropriate;
  - d) Systems charges as appropriate;
  - e) Right-of-way or easement acquisition; and
  - f) Operating, maintenance, repair and replacement expense, including license fees.

Deliverable will be a report with table of relative expense for conventional and advanced OSTDS, cluster system, and central sewer per household for a range of housing density within areas identified in Task 1. The report shall document the impact of existing versus future land use in cost-effectiveness calculation.

- 3) The four Unsewered Target Areas of Woodville Rural Community, Lake Munson/Four Points, Harbinwood Estates and Centerville Trace remain planned for central sanitary sewer. For all other areas of unincorporated Leon County, identify and describe factors influencing selection of treatment technology other than cost-effectiveness, such as:
  - a) Site location within BMAP PFA 1 and PSPZ;
  - b) Site location relative to the Urban Services Area and Rural Communities;
  - c) Adjacent land availability for cluster treatment system;
  - d) Right-of-way for collection and transmission system construction;
  - e) Density of existing development and future land use;
  - f) Anticipated impact to existing and future land use density;
  - g) Technology history of reliability in similar site conditions;
  - h) Scalability of technology;
  - i) Technology suitability for retrofit versus new development;

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- j) Existing WWTF available capacity;
- k) Proximity to existing and/or proposed central sewer collection system;
- l) Anticipated property owner participation rate in retrofit activities;
- m) Time required for implementation;
- n) Local Comprehensive Plan direction regarding wastewater treatment; and
- o) Other criteria the Contractor deems appropriate.

Deliverable shall be a matrix of pros and cons, including weighting factors, to guide technology implementation. A report shall be provided describing the development of the matrix and analysis of relevant criteria.

4) Five public meetings addressing Tasks 1 through 3 will be held to receive input from affected residents. Deliverable shall be a report summarizing input and how comments are addressed.

5) Develop a series of scenarios to implement OSTDS retrofit based on cost-effectiveness and greatest technology implementation score from Task 3 with consideration of public input from Task 4.

Deliverable shall be a series of maps of retrofit target areas and standards for new development with associated technology recommendation.

6) Evaluate total annual nitrogen reduction achieved through implementation of recommended alternatives of the planning horizon of 20 years. Identify any technical or physical constraints on implementation which will influence timing to achieve FDEP target reductions and maintain load targets in build-out conditions (future land use). In addition, specifically describe assumptions relative to the following criteria:

- a) Participation rates by property owners in the recommended retrofit strategy for each area;
- b) Rates at which existing conventional systems will fail; and
- c) Any other policy assumptions that influence timing of participation in retrofit.

Deliverable shall be a report describing assumptions affecting adoption of retrofit and outlining recommendations for phasing to achieve FDEP BMAP target nitrogen reduction within planning horizon.

7) Five public meetings addressing Tasks 5 and 6 will be held to receive input from affected residents. Deliverable shall be a report summarizing input and how comments are addressed.

8) Present the Comprehensive Wastewater Treatment Facilities Plan recommendations to the Board of County Commissioners.