Comprehensive Wastewater Treatment Facilities Plan

Task 7: Public Input on Tasks 1 Through 6

Prepared by

Draft: November 16, 2022

Table of Contents

List of Figures

List of Tables

The cover photograph and the frontmatter margin photograph by PixelAnarchy (June 19, 2012), where the creator has released it explicitly under the license (https://pixabay.com/service/terms/#license): https://commons.wikimedia.org/wiki/File:Wakulla_Springs.jpg.

Acronyms and Abbreviations

AWTS	Alternative Wastewater Treatment Systems
BMAP	Basin Management Action Plan
CWTFP	Comprehensive Wastewater Treatment Facilities Plan
DEP	Department of Environmental Protection
FDOH	Florida Department of Health
GIS	Geographic Information System
INRB	In-ground Nitrogen Reducing Biofilter
JSA	Jim Stidham & Associates
NSILT	Nitrogen Source Inventory and Loading Tool
OSTDS	Onsite Sewage Treatment and Disposal System
PFA	Priority Focus Area
PSPZ	Primary Springs Protection Zone
TMDL	Total Maximum Daily Load
WWTF	Wastewater Treatment Facility

Executive Summary

Leon County is developing a plan to reduce nitrogen loads from existing onsite sewage treatment and disposal systems (OSTDSs), as well as future development, to groundwater and surface waters. OSTDSs are also known as septic systems. The Florida Department of Environmental Protection found that nutrient loads from several sources—including OSTDSs in Leon County—impaired Upper Wakulla River and Wakulla Spring.

Leon County's plan has two parts: (1) a comprehensive wastewater treatment facilities plan for the entire county, and (2) a more focused facilities plan for part of the county that loads nitrogen to the Wakulla River and Wakulla Spring. Objectives of the plan are to: (1) identify OSTDSs to transition to alternative wastewater treatment systems (AWTSs) where the transition will most reduce nitrogen loads to surface waters and groundwater; and (2) identify future development that will require AWTSs to reduce nitrogen loads to surface waters and groundwater.

Leon County is developing the plan by progressing through eight major tasks. This report describes the results of the seventh task: public input on tasks 1 through 6. This task involved a series of five public meetings with stakeholders throughout the county to obtain input on the findings from the project tasks.

1.0 Introduction

The Florida Department of Environmental Protection (DEP) found that nutrient loads from several sources impaired Upper Wakulla River and Wakulla Spring. To develop a plan to restore the river and spring, DEP calculated the maximum amount of nitrate that the river and spring can receive each day, while still satisfying water quality standards. This maximum amount is called a total maximum daily load (TMDL). DEP prepared the Upper Wakulla River and Wakulla Spring Basin Management Action Plan (BMAP) to restore these important waterbodies by identifying actions that will reduce pollutant loads to the river and spring. DEP adopted the BMAP in June 2018.

As part of the BMAP, DEP developed a Nitrogen Source Inventory and Loading Tool (NSILT) to provide information on the major sources of nitrogen in the BMAP area including atmospheric deposition, wastewater treatment facilities (WWTFs), urban fertilizers, onsite sewage treatment and disposal systems (OSTDSs) (also known as septic systems), livestock wastes, and agricultural fertilizers. The NSILT found that the largest contribution of nitrogen loading is from OSTDSs. Therefore, the BMAP requires that stakeholders, including Leon County, prepare a plan to reduce nitrogen loads to the river and spring from OSTDSs. Leon County contracted with Jim Stidham & Associates (JSA) to develop an OSTDS remediation plan. JSA partnered with Advanced Geospatial, Applied Technology & Management, The Balmoral Group, Magnolia Engineering, and Tetra Tech to develop this plan. JSA and these partners are referenced throughout this plan as the JSA team.

The Leon County plan has two parts: (1) a comprehensive wastewater treatment facilities plan (CWTFP), and (2) a more focused facilities plan for the part of the county governed by the BMAP. The CWTFP is funded through a grant from the Blueprint Intergovernmental Agency. DEP funded the BMAP plan with a grant to the county. About 40% of Leon County is served by OSTDSs, about 20% is served by five centralized WWTFs, and about 40% is government land that will not likely be developed during the next few decades and will not likely require wastewater treatment (Figure 1).

The objective of Leon County's plan is to identify existing OSTDSs to transition to alternative wastewater treatment systems (AWTSs), where the transition will most reduce nitrogen loads to the river and spring. The plan will produce guidance for retrofit of existing development as well as direct technology selection for future development. The JSA team is creating the Leon County plan by performing the following tasks:

Task 1. Develop a nitrogen reduction score to identify the likely contribution of nitrogen from OSTDSs to groundwater and surface waters; use the score to quantify, rank, and identify OSTDSs to transition to AWTS; and establish nitrogen reduction criteria for AWTSs for each of the separate delineated areas (Completed)

Task 2. Quantify cost-effectiveness of AWTS (Completed)

Task 3. Identify other factors that influence selection of an AWTS (Completed)

Task 4. Provide education to the community regarding information compiled in tasks 1, 2, and 3 and survey opinions of the citizens of Leon County, with respect to this plan (Completed)

Task 5. Analyze implementation scenarios for AWTS (Completed)

Task 6. Calculate the anticipated decrease in nitrogen load to the Upper Wakulla River and Wakulla Spring, between 2020 and 2040, due to OSTDS transition to AWTS (Completed)

Task 7. Provide additional education to the community regarding the information compiled in tasks 1 through 6 and conduct additional survey of opinions of the citizens of Leon County, with respect to this plan (Draft Completed)

Task 8. Present the plan to the Leon County Board of County Commissioners

This report describes task 7 of the Leon County plan: public input on tasks 1 through 6. Section 2.0 summarizes the public meetings held and Section 3.0 summarizes the feedback received.

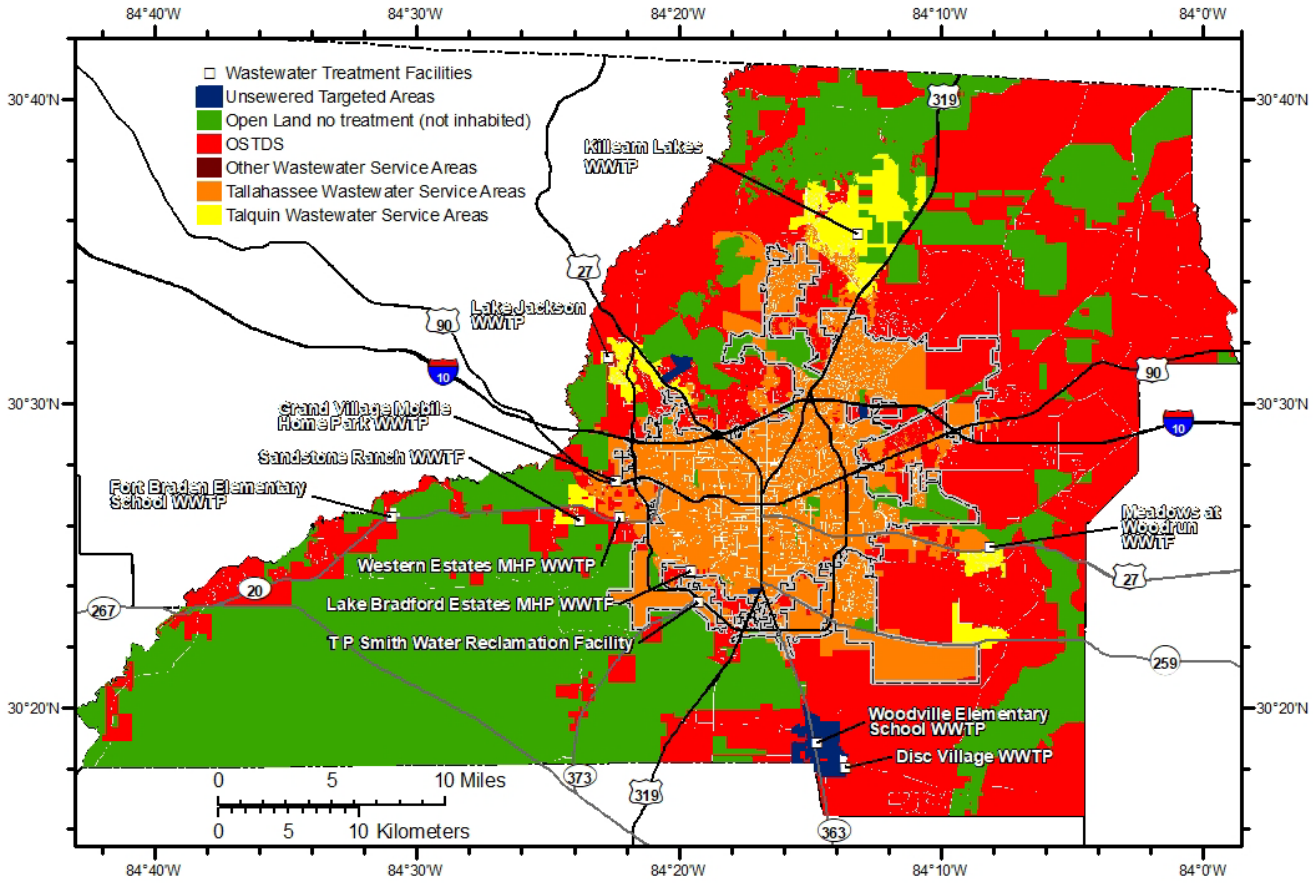

Figure 1. *Parcels with an OSTDS, parcels in the Tallahassee wastewater service area, parcels in the Talquin service area, and WWTFs.*

2.0 Public Meetings

Five public meetings were held to summarize tasks 1 through 3, which were previously presented to the public as part of task 4, and to discuss the tasks 5 and 6 reports and findings. The first meeting was a virtual meeting held through Zoom on October 17, 2022. In-person public meetings were held October 18 through October 20, 2022, in different areas of Leon County to make attending the meeting more accessible. A second virtual meeting was held on October 21, 2022, through Zoom. The virtual meetings were recorded and posted on the county's website at LeonCountyFL.gov/wastewater.

Table 1 summarizes the public meetings held as part of task 7.

Table 1. *Task 7 public meetings.*

Date	Meeting Location	Number of Participants
October 17, 2022	Zoom webinar	3
October 18, 2022	Oak Ridge Elementary School, 4530 Shelfer Road	8
October 19, 2022	Fort Braden Elementary School, 15100 Blountstown Highway	17
October 20, 2022	Celebration Baptist Church, 3300 Shamrock Street East	1
October 21, 2022	Zoom webinar	6

In addition, the JSA team presented the project findings to the Leon County Science Advisory Committee on August 5, 2022, through Zoom and to the Leon County Water Resources Committee on September 12, 2022, through Zoom.

2.1 Meeting Noticing

The Leon County Office of Community & Media Relations advertised the public meetings through the following methods:

1. Issued a public notice
2. Advertised on Twitter, Facebook, and Nextdoor
3. Placed variable message boards at locations near each of the in-person meeting venues including outside Fort Braden Elementary School, two locations near Celebration Baptist Church, Wakulla Springs Road, and two locations on Woodville Highway
4. Advertised on the Leon County website
5. Directly emailed the participants from the Task 4 meetings
6. Placed flyers at the Woodville and Fort Braden community centers and libraries

3.0 Feedback Received

During the public meetings, feedback was obtained through a comment/question period following the project presentation and from comment forms that were distributed to the participants. The comments and questions raised during the meetings are discussed here, and the formal comments provided through the comment forms are included in Appendix A.

For the first meeting, held via Zoom on October 17, 2022, none of the participants had any questions.

During the first in-person meeting on October 18, 2022, the following questions and answers were discussed:

Q: What do all these organizations [on the project team] do?
A: We are a group of engineers. Advanced Geospatial provides the geographic information system (GIS), database driven, support. This is where a lot of the maps and data came from for the algorithms used in the project. The Balmoral Group is looking at the costing and financial piece. Tetra Tech is public communications. JSA and Magnolia Engineering are civil engineering. Applied Technology & Management is environmental engineering.

Q: How did you calculate the additional load that will occur by extending sewer from above the Cody Scarp to below the Cody Scarp since that will add more load at the sprayfield?
A: The question is what happens if we take the nitrogen from the northern part of the county where it likely would not make it to the river and now send it to the T.P. Smith WWTF. We did not address this – we just looked at nitrogen reduction across the parcels. This is one of three plans to meet the BMAP requirements and this additional loading will be accounted for in the City of Tallahassee plan.

Q: How did you address growth? Even though the systems are going to advanced treatment, growth could increase the load.
A: We did have a population growth component where we looked at the number of dwelling units and the potential of growth for each parcel. This information was part of Task 2 where future growth was included to evaluate capacity at the WWTFs over a 20-year horizon.

Q: For the percent treatment from in-ground nitrogen reducing biofilters (INRBs), did your team have time to read the comments from around the country that were submitted to the Florida Department of Health (FDOH) during rulemaking? Not one said these are great systems and many said the systems are significantly flawed. Damon Anderson said the systems FDOH approved are not what he tested. There were two main differences: (1) liners, but the Wakulla Springs Alliance asked Leon County to include lined systems; and (2) pressure dosing since most systems locally are gravity systems. Those two factors have an impact on the efficacy of the systems and longevity. One of reasons the sawdust lasted so long in the testing is because of the anaerobic environment but this is now aerobic. Kevin Sherman, who was with FDOH and now is in the private sector, said his concern was the media would degrade and not only lose its ability to be a carbon source but also make people's yards a mess. My concern is that there are no tests. It will have an impact on these calculations if the systems go south.
A: INRBs are the passive systems discussed in the presentation, and these are one of most cost-effective options based on the numbers from the state. There are many people against this type of system. We have approached this as these systems are approved and permitted by the state of Florida so we will use these as allowed. Leon County has installed many of these systems and have been sampling them. DEP is also running a concurrent system side-by-side and sampling influent, each media layer, and discharge. The goal is to determine the actual treatment efficiency of these systems.
Q: You can put lysimeters in for pressure systems but where do you test to look at media? I have been asking the folks at DEP if they will provide a methodology for testing.
A: There will be preferential pathways in a gravity system. Leon County is also looking at the lined system, which does have more of a history of use. There is a memo of understanding with the county, DEP/FDOH, and Wakulla Springs Alliance to install some of these lined systems before the rule was out. These systems are being tested to determine treatment efficiency. If we find out that the efficiency is not what we have in the report, the GIS tool allows for updates to the values. This is a dynamic tool that can be updated as new are data available and parcels developed.

Q: I went to a meeting last year where some of these ideas were presented and there was mention of the cost to a homeowner. I filled out an application for grant funding and I had a lot of comments and a few phone conversations and that all disappeared with the change in administration. I looked at the chart of costs and appreciate you being realistic but where is the funding supposed to come from if no government funding is available? I heard that the Woodville project is being funded at no cost to them. In my part of the world, we are supposed to convert our systems so where is the money coming from?
A: This is a 20-year plan to go from where we are currently to fully converted. There have been some grants coming out to help with funding. If you could provide your contact information, Leon County staff will check where you are on the list because there is funding for pilot projects to test the INRB systems. There is a new grant coming from DEP that reimburses up to $7,500 but the homeowner can choose any system for upgrade, based on the conditions at your property and ideally what is recommended from the study. You would hire your own contractor and the county would reimburse you. There is a separate application that we can share with you. It would be up to the homeowner to pay until more grant funding is available.
Q: Is someone going after funds? I know my neighborhood and there is not a lot of money. I want to be part of solution but I do not want to bankrupt myself doing that.
A: Leon County is in constant contact with DEP about funding.

Q: How much is the new grant?
A: The grant is $1.11 million. It will cover 148 systems at a cost of $7,500 each. Leon County is not taking an administration fee from the grant.

Q: I am a homeowner nearby, and someone came into my yard with a tractor and placed a sewage line right in front of my door and are also putting meters in. What is going on?

A: Your area is part of the City of Tallahassee's sewer expansion project, so it sounds like they are installing the line in front of your house. Once they are finished, the city will approach you about connecting. I am not sure about their funding mechanism – sometimes they have grant funding and sometimes there is a fee.

Q: One of the things that set the price for INRBs was the original $10,000 grant. The installers loved them because they were able to install them at a great margin. Under Leon County's program, the average cost is about $16,000. I think when the $7,500 grant comes out it will drive down the prices. I am also very concerned about the Lake Munson extension. Our study estimated a cost of $20,000–$25,000 per household, and I am not sure how $7,500 will cover this. The big concern from homeowners is that they will have a monthly payment and will have to pay out of pocket to connect.
A: For any of the Leon County septic-to-sewer projects, if you sign up to connect to sewer while the project is under construction, there is no cost to the homeowner for the connection. Once the project is done and we leave, then the cost is on you as homeowner.
Q: What is the cost per home for the Woodville project?
A: The project has four phases including a master pump station and three or four smaller pump stations. When all the phases are completed there will be 1,000 homes connected.

Q: I live east of Woodville Highway. Will the city or county cover my area? I am part of an association that pays for everything so how does that affect me?
A: That area is part of the second phase of the Woodville sewer project. You should sign up to connect by either providing your contact information tonight or going to the county's website.

Q: What is the communication going to be? Will I wake up one day with a bulldozer in my yard or will you send a notice?
A: We will send you a notice and meet with you on your property before doing anything. Someone from JSA will contact you directly to perform soil borings to ensure that an INRB will work. Assuming that it does, we will go to the county for permitting. There are two contractors that will bid on the project and then we will set up a pre-construction meeting with you, county, and contractor before any work is done to discuss where everything will go and a timeframe. Construction usually takes about 4–5 days.

Q: One of the things that the county has done in the past, which is the reason why all the homes are not connected in Killearn, is that state law requires that a homeowner has to connect if they are notified that sewer is available. The county has not notified people so they did not have to connect.
A: In Leon County, a project like this requires notifying Development Services and they will notify everyone within the project area and hold meetings. For the Annawood project, public meetings were held in the subdivision and we went door-to-door and even made phone calls to get people signed up. The county does reach out to each property owner, and most grant funding requires a minimum participation percentage.

Q: If I am already connected to the city sewer, will there be another cost to me?
A: There will be no additional cost. As far as the state is concerned, connection to the sewer system is the best option for reducing nitrogen.

Q: When the Wakulla Springs Alliance helped get funding for this project, they did not think it would take this long or cost this much. The thought was existing information could be used to come up with a plan quickly.
A: We were hoping it would be a lot easier but, in getting into the project, we found that more information had to be brought into the process along with coordination with other groups. The end

goal is to improve the environment most cost-effectively. In addition, the BMAP was adopted that included other elements that had to be addressed.
Q: Blueprint set aside $2.8 million for this effort and only $500,000 was used for the plan. Can some of this funding be used to help offset homeowner costs?
A: This additional funding will not be available until 2035 and is allocated to other plans so it cannot be used for connections.

During the second in-person meeting on October 19, 2022, the following questions and answers were discussed:

Q: For the residents in the affected areas, will you be notifying them about the rule coming out and how they can apply for a grant? Will you provide them with reputable companies to install the systems? If they fail to install them, will you fine them?
A: There are grants available and an INRB project is underway now. A new grant will be coming soon from DEP that is $1.11 million for upgrading systems in the Priority Focus Area (PFA), since this is the area that is required to upgrade. For those homeowners within the PFA, DEP has list of contractors. The county generally does not recommend contractors. Outside the PFA, there is no funding available since upgrades are not a requirement. The county continues to have discussions with DEP about funding.

Q: There is one target area in the Fort Braden area. Is this the school?
A: No. This is a neighborhood that had a large density of septic systems where there would be good bang for the buck to upgrade the systems.

Q: This cannot be the first place this was implemented. How is it going in other areas?
A: There are some completed plans in central Florida. Wakulla County recently completed an implementation plan since they have a lot of septic system parcels. These plans are a requirement for all Outstanding Florida Springs throughout the state. In some areas, implementation is going well and in other areas, there is some push back on upgrading or connecting septic systems.
Q: In other areas, I am guessing the push back is coming from people who cannot afford it. Will they be fined or forced to connect?
A: There will likely not be a fine but if a septic system fails in the PFA, the owner will not be able to get a permit to repair it so they will have to upgrade. While the county has some regulations, they do not conduct septic system permitting. That occurs through FDOH/DEP. The county does work in close coordination with FDOH and DEP. As far as we know, they are not issuing fines but systems will be required to upgrade when they fail.

Q: Will this be required even if I do not live in the PFA?
A: No. If you live outside the PFA and your system fails, you can replace it with the same system.

Q: What is the extent of this project?
A: The requirements apply within the PFA and Primary Springs Protection Zone (PSPZ). Fort Braden is largely out this area.
Q: If Fort Braden is outside this area, why is a portion included in a target area?
A: The JSA team was tasked with looking at the entire county as part of this project. In task 1, we looked at variety of factors, such as development density, soil types, and how quickly water is going to the groundwater, to give an area a vulnerability score. Due to the number of homes and geologic conditions, this area received a higher score and was identified as a target area.

Q: Florida is getting 8,000 people moving in every month. My neighborhood has run out of property to build, which I see a lot around Lake Talquin. If any anyone builds new, will they have to comply with these requirements?

A: Not in the Fort Braden area because it is outside of the PFA. Any new development will have to meet county development codes that vary based on location. As part of this project, we developed a GIS system that is dynamic so if things change in terms of density, the county can put that information in and update the scoring.

Q: Is there an average cost to the homeowner?
A: The project does include estimates with the average cost by system type. The $7,500 grant reimbursement may cover most of an INRB upgrade but the costs for ATUs and PBTSs range up to $20,000. As soon as the rules and guidance went into place, the county jumped onto developing this plan to have as much of the 20-year timeline available to help get grants.
Q: If funding does not come through, will the homeowner have to pay?
A: Yes. This is not a county requirement but a state requirement. The county is trying to come up with a plan to help obtain grants. So far, the state has been forthcoming with funding.

Q: What happens with elderly people who are on a fixed income? Does the county help to find them financing?
A: The county only assists through the grant program. There are people on fixed incomes who have applied for funding and received funding through the existing grant program.

Q: In the presentation, you indicated that the state could expand the PFA. What would cause that?
A: If DEP made a change, it would be due to the target goals not being met. The reductions are being made to see improvements at the spring. However, if you think of how water is moving, this area flows to Lake Talquin so the PFA would likely not be expanded to Fort Braden.

Q: For the systems that were installed, have you seen a benefit?
A: It takes a while to see changes in the groundwater. There was an improvement in the water quality at the spring after the T.P. Smith WWTF was upgraded. When larger neighborhoods are fully converted, not just individual properties, we will be able to better see the benefits.

Q: I thought the major source was fertilizer. Am I wrong about that?
A: Fertilizer is a component of the loading but it has been addressed to an extent.
Q: How do you stop people from going to buy fertilizer and putting it down?
A: The county has a fertilizer ordinance that blacks out when fertilizer can be applied. The county also conducts public outreach to remind people about the fertilizer ordinance requirements.

Q: If I have a parcel in the PFA and I want to build a home, can I put in a traditional septic system?
A: No. You will have to install an upgraded system or connect to the sewer system.

Q: You mentioned that the city has a master plan. Did the county help with that plan?
A: The city's master plan is periodically updated to plan for potential sewer routes. The target sewer areas from that plan were added as target areas in this project. The county does work in conjunction with the city on sewer projects, such as in the Woodville area.

Q: I know that the state has put in a lot of test wells, including some near here in the forest. Have you looked at the water from these wells?
A: Those wells are for a different effort. For this project, we are using the BMAP approach to estimating the nutrient load reduction benefits.

Q: What is the timeline before the drainfield has to be retrofitted again?
A: ATUs and PBTSs have similar lifespans as traditional septic systems. INRBs are newer systems that are still being tested but the estimate is that they will also have the lifecycle.

Q: What is the cost to fix the system if it breaks?
A: The costs vary depending on the system. The estimated costs in the project include repair costs.

Q: For current septic systems, pump out is the normal maintenance routine. What is the routine for these systems and what is the cost?
A: The cost estimates in this project for each system include operation and maintenance, as well as repair costs. INRBs just have a modified drainfield so the pump out for the tank would be similar to a traditional system. ATUs and PBTSs involve changes to the tank with pumps and blowers so there are electrical costs and repair costs for those components. The estimated costs in the project include repair and replacement over a 20-year life cycle.

Q: The cost table shows that a central WWTF with a lift station that will handle 1,000 or 10,000 people has a permitting cost of $100. However, the INRB permit cost is $600.
A: The larger WWTF permitting fee is spread across multiple people, which is why the fee is $100. The cost of one permit is being applied to multiple homes instead of just one.

Q: Have you considered running sewer to those areas in the PFA that are close to the WWTF?
A: The county has run a line to Woodville for that purpose. The cost per homeowner for sewer is higher than an upgraded septic system but there is a large population and a large load that will be addressed. The county is working on several septic-to-sewer projects including Northeast Munson and recently completed Woodside Heights and one phase of Belair and Annawood. While those county projects are in design and construction, the county covers the cost for anyone who chooses to connect to sewer. The homeowner will only have the monthly sewer charge. The county is working to tie in more areas as funding becomes available.

Q: Is there a website where all this information can be found?
A: Leoncountyfl.gov/wastewater will take you to the page for this project. If you go to leoncountyfl.gov/waterresources, it will have the information on all the septic-to-sewer projects.

Q: What is the target date for presenting the plan to the Board of County Commissioners?
A: We are presenting at the December 13 meeting.

During the third in-person meeting on October 20, 2022, the following questions and answers were discussed:

Q: Even though Leon County wanted you to look at the entire county for this project, it seems that you are primarily looking at the southern portion.
A: The state requirements are for the southern portion of the county, and that part of the plan must be implemented by 2040. We did look at the entire county for reduction opportunities because nitrogen will be an issue as additional development occurs. The plan allows the county to know where focus areas should be moving forward.

Q: Is Killearn not an issue right now?
A: There is an issue in the Killearn chain of lakes but that area does not have as much of a focus from the state. The state is mostly focused on the springs, and there is state funding available for projects in the PFA.

Q: It will be interesting to see how you will address all the parcels in the south. Someone will have to pay for this.
A: The county has received some grant funding that people are taking advantage of to upgrade their systems.

For the second Zoom meeting, and final public meeting, on October 21, 2022, the following questions and answers were discussed:

Q: I wanted to confirm that the 33,353 pounds per year of additional nitrogen reductions is just within Leon County.
A: Yes. This is the estimated load reduction from the target areas within Leon County and outside the PFA.

Q: I have been trying to find the task 6 report but the link for task 6 keeps giving me the task 1 report.
A: The county will fix the link and send you an email once it has been corrected.

Q: Could you please provide the target nitrogen load reduction for the entire PFA?
A: DEP estimated that for the 11,917 septic systems in the two PFAs, the potential TN reductions range from 77,277 pounds per year, if all OSTDSs were upgraded, to 112,943 pounds per year, if all OSTDSs were connected to sewer. The 2,438 septic systems within Leon County in the PFA are about 20% of the total so our target range was 15,455 to 22,589 pounds per year.

Q: Are there discussions with Wakulla County to see how much they expect to do?
A: As part of the BMAP, each county had to complete a similar plan. Wakulla County recently completed their facilities plan, which has gone to their board for approval and has been submitted to DEP. When we selected the 20% target value, we talked with DEP and they appeared to be on board at that time. Since the estimated reductions fall within the middle of the target range of reductions, this plan should be sufficient.

4.0 Appendix A. Public Comments Received and Responses

The following table includes the formal comments received during the public review period for task 7, as well as the JSA team response.

Task 7: Formal Public Comments Received

Commenter	Task	Location	Comment	Response
Bill Landing	N/A	N/A	During the presentation I wondered how well we have quantified the various nitrogen sources to the springshed so I re-read Chapter 3 of the BMAP document. I think it would be very helpful to start your public meetings with a quick review of the loading data so that the public understands why sewage is the target of your evaluation and reporting. These data should also be included in any sort of "executive summary", once again to emphasize why sewage treatment is the important topic.	Additional detail about the nitrogen sources and why the focus is on septic systems was added to the Task 7 and Task 8 reports.
Bill Landing	N/A	N/A	I also think it is important to re-evaluate the impact of livestock on nitrogen loading. Livestock excrement cannot be a net source of nitrogen unless they are being fed with fodder that has been imported from outside the springshed. If they are eating from fertilized pastures then the input is from fertilizer and the livestock themselves serve to lower the net loading as they grow. If they are eating from unfertilized pastures then they are a net sink for nitrogen (as they grow). I think loading from livestock is improperly quantified (too large) in the BMAP Chapter 3.	Noted. This item would need to be addressed by the Florida Department of Environmental Protection (DEP) in future updates to the nitrogen loading estimates.
Scott Hannahs	N/A	N/A	A metric to show that this plan is effective and working is essential. A periodic repeat of the NSILT survey would tell us if we are reducing nitrate/nitrite loading into the ecosystem. This has shown in the past the city spray fields reduced from the major contributor to one of several and the current leading contributor to nitrate/nitrite at the Wakulla springs is now OSTDS in the area.	Noted. This item would need to be addressed by DEP through future updates to the Nitrogen Source Inventory and Loading Tool (NSILT).
Scott Hannahs	N/A	N/A	The INRB is a label that hides a host of issues. The original design called for a site specific engineered solution. Now it is whatever the local installer can do for the $10K allocation and still make a profit. These need a proven design and the capacity to monitor their functionality. Monitoring all the advanced treatment systems for correct installation and operation is essential. I know this is a future phase but starting to show the necessity of a Responsible Management Entity is necessary for any of this to make sense. Otherwise we are just helicoptering money and hoping it does some good. There are many assumptions in the operation of this Wastewater Treatment Plan and one needs to have actual data that the reality is matching the plan.	Leon County and DEP are monitoring several options for INRBs currently and the Task 8 report includes a recommendation to continue monitoring.
Scott Hannahs	5	Figure 3	Task 5, figure 3 is sort of confusing and trivial? It has multiple boxes but they all go to the same point. It could just be summarized that the lowest cost solution should be selected without a diagram. It is one of those things where the report writer was trying to make it look sciencey. Just be straight forward about the result. Which does turn out to be “lowest cost”. However, that should be lowest cost effectiveness, in that getting a cheap solution that doesn’t remove nitrate/nitrite is not really what you want. It should be the lowest cost/effectiveness solution.	This figure outlines the queries used in the GIS database to factor in cost in the selection of the technology. The text will be clarified to better explain what is occurring in this step.
Scott Hannahs	5	Section 4.0	And my last note that I have asks about if it is recommended that all future development that is now sewered be AWTS? Including other areas of the county outside the PFA and the PSPZ? These are lower infiltration as shown in the vulnerability maps, but there are always significant karst features nearby. Thus the vulnerability of the area is not controlled by just the underlying geology but by the nearest direct line to a karst feature. I don’t think there are hydrological maps that can show the underground direction of flow to each karst feature from any point so a direct line is the best guess for a uniform topology.	The report focus on future development is within the PFA and PSPZ since this portion of the County has requirements related to OSTDS. Application of the report recommendations for future development areas outside the PFA and PSPZ would be at the discretion of the County.
Sonia Nalon	N/A	N/A	This is a worthwhile project. While meetings have been informative, communication between meetings has been difficult for me.	Leon County staff took your contact information during the meeting and followed up by phone the next day.
Sonia Nalon	N/A	N/A	Nobody brought it up, but what about nitrogen runoff from fertilizer? Is that a part of your study? There are a lot of lawns & gardens in SW Leon County, plus some small scale farming.	As part of the basin management action plan (BMAP), DEP developed the NSILT to provide information on the major sources of nitrogen in the BMAP area including atmospheric deposition, wastewater treatment facilities, urban fertilizers, septic systems, livestock wastes, and agricultural fertilizers. The NSILT found that the largest contribution of nitrogen loading is from septic systems. Therefore, the BMAP requires that stakeholders, including Leon County, prepare a plan to reduce nitrogen loads from septic systems so those were the focus of this project.
Sonia Nalon	N/A	N/A	I’m concerned that so few homeowners or residents attended this week’s meeting, also the one last August. I know your responsibility is to present the information, but more people need to know about this.	The Leon County Office of Community & Media Relations advertised the public meetings through a variety of methods, and meetings were held throughout the county and via webinar to provide options for interested residents to attend. The meetings were noticed according to state requirements with at least two weeks' notice.
Wakulla Springs Alliance	N/A	N/A	Calculations do not adequately address the increase in Load for the capture of waste in Septic to Sewer projects from projects north of the Cody scarp that are in areas with a confining clay layer. Although the COT Wastewater treatment facility treats to a low concentration of N, any added waste from these areas adds pounds of N to the Target Area that may decrease the chances of achieving the 17K+ lbs. of N removal the plan is trying to achieve.	A portion of the loading from septic systems above the Cody Scarp does impact the river and spring. Treating that wastewater at the City of Tallahassee WWTF instead of through individual septic systems will have an overall benefit to the river and spring.
Wakulla Springs Alliance	N/A	N/A	Growth in the county in the 2040 window is not adequately addressed in the plan for both residential and commercial new Septic and sewer connects. The plan does recognize that any growth will be served by either advanced treatment Onsite systems or sewer that will generate low concentrations of N, these new generators of waste will add load to the target area.	New development within the PFA and PSPZ must connect to the sewer system or use nitrogen reducing septic systems per state requirements. The estimated load reductions presented in the plan focus on existing septic systems, consistent with the BMAP. The new development will contribute to the nitrogen loading but at a lesser amount than if it used traditional septic systems.

Task 7: Formal Public Comments Received

Commenter	Task	Location	Comment	Response
Wakulla Springs Alliance	N/A	N/A	Septic to sewer projects assume a high participation rate in the CWTFP to achieve targeted N reduction, but tie in rates have historically been low in past Leon County projects. This is exemplified by the very low tie in rate in Killearn Lakes sewer project.	As noted in the Task 6 report, the property owner participation rate has varied from 60% to 96%. Within the PFA and PSPZ, the connection to the sewer system or upgrade to nitrogen reducing systems is a state requirement, which should increase the participation rate.
Wakulla Springs Alliance	N/A	N/A	The use of INRBs as the primary, and almost exclusive, choice for conversions of conventional septic to Advanced treatment poses a significant risk of over-estimating the N reduction from the use of these types of systems for these reasons. These INRBs that do not conform to the systems that were designed in the Passive Nitrogen Study done for The State of Florida by Hazen and Sawyer. They lack both a liner and pressure dosing which the study systems had. Lacking a liner reduces the time the Effluent can come in contact with the ligneous carbon source media confined to this part of the drain field. Adequate time is need for the carbon source media to chemically interact with the effluent to reduce N discharge. Also, without a liner the ligneous carbon media source is in an aerobic environment instead of the anaerobic environment that the liner provides which will result in a much more rapid degradation of the carbon source which may result in Loss of efficacy of the carbon source as it degrades resulting in lower ability to remove N, As the carbon source degrades and shrinks in volume it may cause a depression in the drain field area causing the system to fail. Lacking pressure dosing INRBs, that distributes effluent to the entire drain field, there are challenges for even being able to test them properly. With installations using liners and pressure dosing it is possible to use proven testing methodologies by placing test well Lysimeter in various locations around the drain field to determine how much N is being reduced and discharged into the environment. DEP has yet to come up with an effective way of testing installations of INRBs without liners and pressure dosing, although some test sites are currently being set up. INRBs installed without liners and pressure dosing, even though this is a FL DEP approved design, have yet to be tested to determine their ability, in both the long and short run, to actually reduce N and to what degree. INRBs installed with liners and presser dosing have had some limited testing but not enough to demonstrate their efficacy in the short and long run either. Very few of these more robust INRB	The recommendations in the plan are made based on the best available information about the systems, local conditions, costs, and benefits. As new information is available, it can be incorporated into the plan GIS tool to evaluate any changes to the recommended technologies. Leon County and DEP are currently installing and monitoring several INRB systems, including those with liners, to obtain better information on the efficiency within the county conditions.