



**Board of County Commissioners**  
**Leon County, Florida**

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**Agenda Item**  
**Executive Summary**

July 14, 2009

**Title:**

Consideration of Participation in a Regional Study of Management Alternatives for Nitrate Load Associated with Septic Tanks

**Staff:**

Parwez Alam, County Administrator *PA*  
Vincent S. Long, Deputy County Administrator  
Alan Rosenzweig, Assistant County Administrator *AR*  
Kim Dressel, Senior Assistant to the County Administrator

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**Issue Briefing:**

This agenda item seeks Board direction on whether to participate in Phase I of a regional On-site Treatment Disposal Systems (OSTDS) Alternatives and Management Feasibility Study.

**Fiscal Impact:**

Phase I of the study is estimated to cost the County \$20,000.

**Staff Recommendation:**

Option #1: Accept the update report on the April 28, 2009 Wakulla Springs Symposium from the 1000 Friends of Florida.

- Board Direction on either Option #2 or #3.

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## Report and Discussion

### Background:

The Board held a workshop on May 12, 2009 regarding On-site Sewage Disposal Systems and Establishment of Standards within the Primary Springs Protection Zone Consistent with the Comprehensive Plan. Much of the workshop focused on the phased replacement of on-site sewage treatment and disposal systems (i.e., septic tanks and drainfields) with nitrogen-reducing performance-based treatment systems (PBTS). Additionally, during the workshop, the Board directed staff to prepare a subsequent agenda item to further discuss cost feasibility for bringing central sewer, and its alternatives, to the Primary Springs Protection Zone. The issue of conducting a feasibility study for cluster systems and other alternatives to distributed systems was discussed during an April 28, 2009 Regional Government Springshed Meeting attended by Commissioner Rackleff.

A June 9, 2009 agenda item sought ratification of the actions the Board had taken during the workshop and further direction on what the Board was seeking in the requested agenda item relative to the feasibility study. During the June 9, 2009 meeting, the Board ratified the actions it had taken during the workshop. Additionally, there was considerable discussion regarding what the study would provide. As the City of Tallahassee was scheduled to discuss its participation in the study during its June 10, 2009 meeting, staff was directed to return with an agenda item subsequent to the City's action.

### Analysis:

A copy of the City's June 10, 2009 agenda item concerning the proposed study is provided as Attachment #1. The item sought approval for the City to participate with Leon and Wakulla counties in funding Phase 1 of a study to evaluate how to better manage the nitrate discharging from septic tanks in the Wakulla Springs recharge area. Staff estimates there are 6,640 on-site sewage disposal systems within the Leon County primary springs protection zone (6,609 in the unincorporated area and 31 within City limits), and more than 30,000 systems within the Wakulla Springs recharge area within Leon County. Staff estimates approximately one-half of the traditional systems, within the Leon County primary springs protection zone, would be exempt from the draft ordinance requirement to replace traditional systems that fail or that are being modified with performance-based systems, based on property values and household income levels. The draft ordinance does not address systems within the Wakulla Springs recharge area outside the primary springs protection zone.

Additionally, as a separate but related issue, the City received an update report on the April 28, 2009 Wakulla Springs Symposium, presented by Charles Pattison, President of 1000 Friends of Florida. Mr. Pattison seeks to present that report to the Board during its July 14, 2009 meeting. As the issues are related, staff anticipates the report would be received as a part of this agenda item.

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The goals for Phase I of the study "...will be to assess existing data and prior research, identify the treatment systems and management options, and through a preliminary assessment, narrow a subset of options to be evaluated in greater detail in Phase II." Phase I is anticipated to cost \$60,000, with Leon County, Wakulla County and the City of Tallahassee each paying \$20,000. Phase II of the feasibility study, according to the City's agenda item, is anticipated to cost approximately \$200,000 - \$300,000, hopefully funded from grants based upon the investment and findings from Phase I. The City's agenda item described the complete study (Phases I and II) to likely include steps such as:

1. "A summary review of previous reports, studies, recommendations, maps, inventories and current practices. The objective being to identify, and where practical, fill informational data gaps that are needed for decision making."
2. "Descriptive outline of various service levels for alternative management structures and their respective effectiveness at addressing the on-site system nitrate-loading problem."
3. "Evaluation of alternatives for effective, efficient and equitable finance mechanisms. This would include:
  - a. Evaluation of affordability and ability and willingness of the customer base to pay in accordance with the necessary fee structure.
  - b. Evaluation of economic sustainability with particular attention to the initial and lifetime O&M and Replacement costs.
  - c. Fee collection authority and collection mechanisms."
4. "Evaluation of impact on existing local on-site system service companies and how they might be integrated into one or more of the alternatives."

The City Commission voted 3-0 (Commissioners Mustian and Katz absent) to approve participation in Phase I of the study, and authorized funding in the amount of \$20,000. If the Board seeks to participate and authorizes funding in the amount of \$20,000, staff will execute a budget amendment to realign the funds from the General Fund contingency.

**Options:**

1. Accept the update report on the April 28, 2009 Wakulla Springs Symposium from the 1000 Friends of Florida.
2. Participate in Phase I of the Regional Study of Management Alternatives for Nitrate Load Associated with Septic Tanks, and authorize staff to execute a budget amendment to realign \$20,000 from the General Fund contingency for this purpose.
3. Do not participate in Phase I of the Regional Study of Management Alternatives for Nitrate Load Associated with Septic Tanks.
4. Board Direction.

**Recommendation:**

Option #1, and Board Direction on either Option #2 or #3.

**Attachment:**

1. City of Tallahassee's June 10, 2009 Agenda Item

<b>CITY OF TALLAHASSEE</b>	
<b><u>CITY COMMISSION AGENDA ITEM</u></b>	
<b>ACTION REQUESTED ON:</b>	June 10, 2009
<b>SUBJECT/TITLE:</b>	Approval to Participate in Regional Study of Management Alternatives For Nitrate Load Associated with Septic Tanks.
<b>TARGET ISSUE:</b>	N/A

**STATEMENT OF ISSUE**

This item requests City Commission approval to participate with Leon and Wakulla counties in funding Phase I of a study to evaluate how to better manage the nitrate discharging from thousands of septic tanks in the Wakulla Springs recharge basin. When complete the multi-phase study will provide an assessment of management alternatives and associated costs along with functional capabilities and economic analyses. Depending on the management alternatives, if warranted, a financial plan and draft rate structure may be developed. The goals of Phase I of the study will be to assess existing data and prior research, identify the treatment systems and management options, and through a preliminary assessment, narrow a subset of options to be evaluated in greater detail in Phase II. The complete feasibility study will provide specific alternatives for elected officials to consider for implementation, either collectively as a region or on a coordinated local basis. Each of the three governments will contribute \$20,000 for Phase I of the study. It is anticipated that most, if not all, of Phase II will be grant funded. It is also probable the completed study and resultant decisions will play a role in the Basin Action Management Plan (BMAP) process associated with TMDLs for Lake Munson and Wakulla Springs.

**RECOMMENDED ACTION**

Option 1: Approve participation in Phase I of a regional OSTDS Alternatives and Management Feasibility Study and authorize funding in the amount of \$20,000 available in Wastewater Project No. 09057.

**FISCAL IMPACT**

The total funding required for the study (\$20,000) is available in Wastewater Project No. 09057.

Mike Tadros, General Manager  
 Underground Utilities

Anita Favors Thompson  
 City Manager

For information, please contact: John Buss, Water Resources Engineering, 891-6852

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### **SUPPLEMENTAL MATERIAL/ISSUE ANALYSIS**

#### **HISTORY/FACTS & ISSUES**

1. Wakulla Springs, a natural resource of great ecological and recreational value, is suffering from decline due to excess nitrate loading in the spring recharge basin or springshed. Because the Wakulla Springshed is regional, the long-term success of restoration efforts for the Wakulla Springs will require coordinated regional efforts.
2. In May 2005, a Hydrogeology Conference was held to explore what the science could explain about the nitrate problem at Wakulla Springs. The science pointed at a couple of major sources of nitrate loading. One of these was the City of Tallahassee treated wastewater reuse spray field. A second major source identified was the cumulative discharge of thousands of septic tanks (On-site Treatment Disposal Systems or OSTDS) within the Wakulla Springshed. Following the 2005 conference the City of Tallahassee developed and funded a major capital improvement plan to address the spray field source. Those improvements are now underway, so the next major challenge to improve the health of Wakulla Springs is better management of the distributed nitrate load from septic tanks.
3. In February 2009, a follow-up regional conference was held on the Wakulla Springs nitrate problem. The science presented at this conference confirmed that septic tanks are likely the next largest nitrogen contributor to the Wakulla problem. The presentations also suggested that better management of both the installation as well as the ongoing operation and maintenance of OSTDS of all types, would be needed to abate this problem. One of the consensus recommendations of the conference was that a feasibility study be done to present alternative methods of implementing a program for better management of OSTDS.
4. The previous January the City Commission approved an Inter-local Memorandum of Understanding committing to work cooperatively with Leon County and Wakulla County to protect the shared regional Wakulla Springshed water resources. Among other commitments was an agreement to build upon recommendations derived from the February Wakulla Springs Restoration Conference.
5. The goal of the recommended feasibility study would be to develop specific alternatives for elected officials to consider for implementation, either collectively as a region or on a coordinated local basis. The alternatives developed would have to consider our local economic, social, and environmental conditions as well as our political and government structures. The core of the multi-phase study would be an assessment of alternatives and associated costs, functional capabilities, economic analyses, and, depending on the

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management alternatives considered, potentially a financial plan including structure.

6. It is anticipated that most of the study can be funded through grants; however, some initial work is needed to build the foundation to enable that to happen. A regional collaboration needs to be demonstrated and goals and potential alternatives narrowed. For this reason, it is proposed that the feasibility study be implemented in two separate phases.
7. Phase I is proposed to be funded jointly by the City and Leon and Wakulla counties. The goals for Phase I will be to assess existing data and prior research, identify the treatment systems and management options, and through a preliminary assessment, narrow a subset of options to be evaluated in greater detail in Phase II.
8. Phase II of the feasibility study will be more complex and detailed and accordingly will be more expensive; on the order of \$200,000 - \$300,000. Again, it is hoped that Phase II can be funded from grants based upon the investment and findings from Phase I. The complete study will likely include steps such as:
  1. A summary review of previous reports, studies, recommendations, maps, inventories and current practices. The objective being to identify, and where practical, fill informational data gaps that are needed for decision making.
  2. Descriptive outline of various service levels for alternative management structures and their respective effectiveness at addressing the on-site system nitrate-loading problem.
  3. Evaluation of alternatives for effective, efficient and equitable finance mechanisms. This would include:
    - a. Evaluation of affordability and ability and willingness of the customer base to pay in accordance with the necessary fee structure.
    - b. Evaluation of economic sustainability with particular attention to the initial and lifetime O&M and Replacement costs.
    - c. Fee collection authority and collection mechanisms.
  4. Evaluation of impact on existing local on-site system service companies and how they might be integrated into one or more of the alternatives.

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**CHARITABLE CONTRIBUTIONS**

N/A-This item seeks Commission approval to participate and cooperatively fund a feasibility study with Leon and Wakulla County. Charitable contribution preferences are not applicable.

**OPTIONS**

- Option 1: Approve participation in Phase I of a regional OSTDS Alternatives and Management Feasibility Study and authorize funding in the amount of \$20,000 available in Wastewater Project No. 09057.
- Option 2: Do not approve participation or funding and provide alternative direction.

**ATTACHMENTS/REFERENCES**

Wakulla Springshed Regional Partnership Memorandum of Understanding

**Wakulla Springshed Regional Partnership  
Memorandum of Understanding**

WHEREAS, the Wakulla Springshed is a rich and bountiful ground water system that supplies drinking water in the region;

WHEREAS, the Wakulla Springshed contains unique ecosystems that are dependent upon sustaining a natural balance of dissolved chemicals in both the ground and surface water (nutrients in particular);

WHEREAS, the Wakulla Springshed provides sustained economic benefits to the region through human enjoyment of the natural springs and spring fed river that issue forth to the surface from this precious ground water system;

WHEREAS, the Wakulla Springshed includes natural wonders such as Wakulla Springs, the Leon Sinks Cave System and a vast network of navigable underwater caves unsurpassed in the United States;

WHEREAS, the Wakulla Springshed exhibits porous and rapid surface-to-ground water drainage south of the Cody Scarp and direct conduits to the ground water through surface drainage to lakes north of the Scarp;

WHEREAS, the Wakulla Springshed is easily polluted by land use changes and the associated human activities including wastewater disposal, stormwater management and fertilization practices that alter the natural balance of chemicals in the surface and ground waters;

WHEREAS, the degradation of water quality in the Wakulla Springshed has been documented to include increasing levels of nutrients and increasing algal and aquatic plant growth;

WHEREAS, this degradation of water quality in the Wakulla Springshed has been of concern for some time, and has been documented in numerous reports, including the May 2005 Peer Review Committee report on the workshop entitled, "Solving Water Pollution Problems in the Wakulla Springshed of North Florida";

WHEREAS, at the April 2008 meeting of affected local governments and interests the parties continued to express concern about pollution problems in the springshed and the stated need to consider joint efforts and solutions;

WHEREAS, it is in the best interest of Wakulla County, Leon County and the City of Tallahassee to protect our shared regional Wakulla Springshed water resources;

Therefore we agree to participate in the following inter-local efforts:

- To work cooperatively to investigate and consider methods to limit nutrient pollution inputs to surface and ground waters within the Wakulla Springshed;
- To work cooperatively to investigate and consider methods to lessen pollution inputs from both existing and new wastewater disposal systems;
- To work cooperatively to investigate and consider methods to explore the development of either a common regional entity or coordinated and consistently structured local entities to address management of the numerous septic systems in our area;
- To work cooperatively to identify and deploy the stormwater collections, management systems, and best management practices that reduce the generation of pollutants that enter stormwater;
- To allocate staff to jointly review and consider the recommendations derived from the February 25-26, 2009 Wakulla Springs Restoration Workshop and return with recommendations on appropriate follow-up actions by each respective government; and,
- To build upon the recommendations derived from the February 25-26, 2009 Wakulla Springs Restoration Workshop and jointly pursue regional, state and federal funding opportunities to further these recommendations.

I agree to the aforementioned statements and strategies

Date

City of Tallahassee

Deborah A. Lightsey

2-26-09

Leon County

Bob Kunkley

2-26-09

Wakulla County

[Signature]

2-26-09

## Board of County Commissioners Agenda Request

Date of Meeting: August 4, 2009

Date Submitted: July 17, 2009

To: Honorable Chairman and Members of the Board

From: Benjamin H. Pingree, County Administrator  
Lindsay Stevens, Assistant County Administrator  
Melissa Corbett, Planner II

Subject: Request Board Approval to Participate in Phase I of a Regional OSTDS Alternatives and Management Feasibility Study and Authorize Funding in the Amount of \$20,000 for the County's Share of the Study's Costs

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**Statement of Issue:**

This item requests Board approval to participate with Leon County and the City of Tallahassee in funding Phase I of a study to evaluate how to better manage the nitrate discharging from thousands of septic tanks in the Wakulla Springs recharge basin.

**Background:**

Wakulla Springs, a natural resource of great ecological and recreational value, has suffered from excess nitrate loading in the spring recharge basin. Due to the fact that the Wakulla Springshed is regional, the long-term success of restoration efforts for Wakulla Springs will require coordinated regional efforts.

In May 2005, a Hydrogeology Conference was held to explore what science could explain about the nitrate problem at Wakulla Springs. The science pointed at a couple of major sources of nitrate loading. One of these was the City of Tallahassee treated wastewater reuse spray field. A second major source identified was the cumulative discharge of thousands of septic tanks (On-site Treatment Disposal Systems or OSTDS) within the Wakulla Springshed. Following the 2005 conference, the City of Tallahassee developed and funded a major capital improvement plan to address the spray field source. Those improvements are now underway.

In January of 2009, the three involved government entities preliminarily approved an Interlocal Memorandum of Understanding committing to work cooperatively to protect the shared regional Wakulla Springshed water resources. At the Wakulla Springs Restoration Conference, which was held in February of 2009, the Interlocal Memorandum of Understanding was officially signed by representatives of each government (Attachment #1). Among the many important commitments contained in the agreement was the investigation into the coordinated management of on-site septic systems.

Agenda Request: Request Board Approval to Participate in Phase I of a Regional OSTDS Alternatives and Management Feasibility Study and Authorize Funding in the Amount of \$20,000 for the County's Share of the Study's Costs

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The February 2009 meeting focused again on the Wakulla Springs nitrate problem. The science presented at this conference confirmed that septic tanks are likely the next largest nitrogen contributor to the nutrient problem. The presentations also suggested that better management of both the installation as well as the ongoing operation and maintenance of OSTDS of all types, would be needed to abate this problem. One of the consensus recommendations of the conference was that a feasibility study should be done to present alternative methods of implementing a program for better management of OSTDS.

When complete, the multi-phase OSTDS feasibility study will provide an assessment of management alternatives and associated costs along with functional capabilities. Each of the three governments has been asked to contribute \$20,000 for Phase I of the study. Staff with the City of Tallahassee anticipates that most, if not all, of Phase II will be grant funded.

**Analysis:**

The goal of the recommended feasibility study would be to develop specific alternatives for elected officials to consider for implementation, either collectively as a region or on a coordinated local basis. The alternatives developed would have to consider the local economic, social, and environmental conditions as well as political and government structures. The core of the multi-phase study would be an assessment of alternatives and associated costs, economic analyses, and depending on the management alternatives considered, potentially a financial plan including a rate structure. It is anticipated that most of the study can be funded through grants; however, some initial work is needed to build the foundation to enable that to happen. A regional collaboration needs to be demonstrated and goals and potential alternatives narrowed. For this reason, it has been proposed that the feasibility study be implemented in two separate phases.

Phase I of the study is proposed to be funded jointly by the City of Tallahassee and, Leon and Wakulla Counties. The goals for Phase I will be to assess existing data and prior research, identify the treatment systems and management options, and through a preliminary assessment, narrow a subset of options to be evaluated in greater detail in Phase II. Phase II of the feasibility study will be more complex and detailed and accordingly will be more expensive. City of Tallahassee staff has estimated the cost of Phase II to be in the range of \$200,000 to \$300,000. The complete study will likely include steps such as:

1. A summary review of previous reports, studies, recommendations, maps, inventories and current practices. The objective being to identify, and where practical, fill informational data gaps that are needed for decision making.
2. Descriptive outline of various service levels for alternative management structures and their respective effectiveness at addressing the on-site system nitrate-loading problem.

Agenda Request: Request Board Approval to Participate in Phase I of a Regional OSTDS Alternatives and Management Feasibility Study and Authorize Funding in the Amount of \$20,000 for the County's Share of the Study's Costs

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3. Evaluation of alternatives for effective, efficient and equitable finance mechanisms. This would include:
  - a. Evaluation of affordability and ability and willingness of the customer base to pay in accordance with the necessary fee structure.
  - b. Evaluation of economic sustainability with particular attention to the initial and lifetime O&M and Replacement costs.
  - c. Fee collection authority and collection mechanisms.
  
4. Evaluation of impact on existing local on-site system service companies and how they might be integrated into one or more of the alternatives.

To cover the costs of Wakulla County's participation in this study, \$20,000 would need to be allocated by the Board for this purpose. Therefore, staff is seeking the Board's approval of this expenditure. The City of Tallahassee Commission voted to approve their participation in the study and provide the necessary funding at their June 10, 2009 public hearing. Leon County also considered their participation in the study during their July 14, 2009 public hearing, which concluded with a vote for approval to participate and contribute the funding. Staff would like to thank the Leon County/City of Tallahassee staff for their continued participation in this effort and we look forward to working with them on this regional effort.

**Options:**

1. Approve participation in Phase I of a regional OSTDS Alternatives and Management Feasibility Study and authorize funding in the amount of \$20,000 for the County's share of the Study's costs.
2. Do not approve participation or funding of the regional OSTDS Alternatives and Management Feasibility Study.
3. Board Direction.

**Recommendation:**

Option #1 Staff recommends approval of Wakulla County's participation in Phase 1 of the regional OSTDS Alternatives and Management Feasibility Study. As on-site septic systems have been indicated as a major contributor to nutrient loading at Wakulla Springs, this study will be the next step in remedying pollution problems in the Wakulla Springs Basin.

**Attachment(s):**

1. Wakulla Springshed Regional Partnership Memorandum of Understanding

[LS/mc]