

## Comprehensive Wastewater Treatment Facilities Plan, Request for Proposals

Dear Commissioners:

Thank you very much for this revision of the CWTF Plan RFP. I really appreciate the time and effort staff put into listening and responding to all of the comments on this proposal.

The new RFP clearly is a request for a plan that addresses the need to protect all of Leon County's water resources, to mitigate the impact of existing development and to provide for future development. This RFP aims to provide us with sustainable wastewater treatment. Yeah!

I have a few remaining concerns about emphasis in the Scope of Services and the directions provided to the consultant. I request that you ask staff to consider the following issues and revise the RFP accordingly.

### **1. Accounting for future development wastewater needs**

**Please ask staff to remove references to maximum Future Land Use build out and zoning densities and to direct the consultants to rely on the COT Master Water and Sewer Plan (MSWP) for analysis of existing and future land use patterns. Specifically the analysis of the 14 Unsewered Targeted Areas and assessment of the remaining Urban Service Area – provides more realistic and census based data. Relying on FLU build out will not be useful.**

Throughout the RFP draft the consultant is directed to use Future Land Use maximum density and zoning to estimate future wastewater treatment needs and costs. These values will hugely overestimate development in the next few decades. For instance, FLU maximum densities would accommodate 350,000 people in the unincorporated area. According to the OEV demographic analysis, there are about 96,000 people in the unincorporated area now and the expected increase over the next 20-30 years is about 10,000. Clearly, using the build out to FLU is not a useful approach.

The Comp Plan policies that direct 90% of growth to the Urban Services Area (USA) and growth outside the USA to the Rural Communities are sufficient general direction to identify where future growth will occur. The MWSP estimates are in alignment with the realistic estimates.

Also, the MWSP provides a good template for how to geographically analyze the unincorporated USA. It identifies neighborhood and larger areas that were designated by the County: 14 Unsewered Target Areas, including Woodville Rural Community and for the remaining portion of the unincorporated USA. The MWSP provides location specific data on existing development, platting and other aspects of realistic future growth capacity for each of these areas. Its cost estimates for sewer were done in 2015 and are sufficiently recent so they can be used for this Facilities Plan. The Facilities Plan consultant can estimate the cost of alternatives to sewer: ie OSTDS and cluster in each

using the MSWP organization as a template and need not spend time and money on re-estimating sewer costs. Cost estimates for the remaining unincorporated area in outside the USA should be based on OEV data as FLU maximums and zoning would also result in huge overestimates of rural development.

## **2. Anticipated property owner participation rate in retrofit activities and time required for implementation.**

**Owner participation will strongly reflect when compliance with new treatment standards is required and who pays for it. Please ask staff to provide realistic options to the consultant for time of compliance and financing options so that the required scenarios will directly aid the Commission in addressing the next steps of the implementation of the Facilities Plan.**

Remember, this Facilities Plan is the first of three plans. The next two will be about how to implement this plan. At that later date, the Commission will want to know what the implication of financing and compliance options are in order to address these questions

The Facilities Plan can provide analysis of how different financing and compliance options will affect rates of nitrogen reduction, public and private costs and support future development. No decision about exactly what to require or how to pay for it is needed at this time, but scenarios of different options can be created to inform future Commission decisions in the Facilities Plan.

Future issues that will need to be addressed include:

Will connection to sewer be required when it is extended or can the owners wait to connect until their septic tanks fail? Are systems fees and plumbing costs going to be subsidized by the County? Or not?

If a septic tank fails on a rural property, is the owner required to meet the new treatment standard for replacement? Will this be a private expense or will there be some form of public assistance?

If sewer is the best option in side the USA, will all new development be required to connect to sewer and only be able to use nitrogen-reducing OSTDS in Rural areas?

Clearly, “participation” and acceptance of new standards by your constituents will be directly related to when compliance will be required and how it will be paid for. The consultant will not necessarily, be aware of the specific concerns the Commission will have about financing. The consultant will not decide what options are preferred, but this is the chance to get objective analysis of options you will want to consider in the next steps of implementation.

### 3. Analyses option of using different treatment standards for onsite vs sewer

**Differences in treatment standard should not be based on the age of development: ie new vs existing, but could be based on technology used for nitrogen reduction: ie OSTDS vs sewer. This could greatly affect owner participation, private and public cost.**

**Please direct staff to require the consultant to analyze the cost effectiveness, owner participation rates and capacity to meet overall nitrogen reduction needs based on using a less stringent nitrogen-reducing standard for replacement with OSTDS in comparison to connection to sewer. The permitted treatment volume limits of FDOH vs FDEP effectively distinguish between onsite and sewer technology.**

COT sewer connection is the same high level of treatment no matter where it is extended to and it also is usually the most costly. But it will often be the most appropriate due to higher density of existing development and needed support for more density in the future.

However, there will also continue to be locations where septic tanks are the only appropriate form of wastewater treatment, notably in the Rural and Urban Fringe areas. Depending on aquifer vulnerability, existing septic tanks in these areas will need to be replaced with nitrogen reducing OSTDS and new development should be built on nitrogen reducing OSTDS.

Nitrogen reducing OSTDS can be designed to provide a variety of different treatment rates, including equivalent to COT sewer. Costs are related to treatment rates.

Consideration should be given to allowing development on OSTDS to use a less stringent nitrogen-reducing standard for both replacement and new development. This could create significant cost savings for the portion of development that will continue to use onsite systems and should never be connected to infrastructure intended for higher density development. Given that many septic systems will be replaced by connection to sewer which will result in a lot of nitrogen reduction, it may be possible to achieve sufficient total nitrogen reduction with less stringent standards for the remaining OSTDS which will continue to use onsite technology. New and existing development on OSTDS will still, for much of the county, require a nitrogen reducing technology – but it could be less costly than COT sewer especially with a less stringent standard and still, overall, be very effective. (See graph at end of my comments.)

I suggest using the distinction between FDOH and FDEP volume limits. FDOH permits onsite and small volume systems. FDEP is responsible for larger volumes such as sewer and cluster systems. This distinction also reflects land use (rural and large lots vs suburban and urban development, respectively). Using more than one standard based on replacement technology is also an approach being considered in the BMAP.

#### 4. Equal evaluation cost-effectiveness of alternatives

**All components, whether usually paid by the owner or public, need to be considered in order to have an equivalent comparison of cost effectiveness. Please include plumbing from house to infrastructure on the list of costs to be considered.**

As a part of the comparison of sewer, cluster and OSTDS costs, the list provided in the RFP leaves the cost of plumbing from the house to the pipes for sewer or large cluster system. This plumbing is an inherent component of an OSTDS and cannot be separated to provide an equal evaluation. The design of cluster systems can make even these distinctions more complicated as some onsite treatment component may be required and effluent is piped instead of sewage. Separate accounting for them can be helpful, but all costs have to be included for an objective comparison of nitrogen reducing effectiveness and support for future development.

Thank you very much for your attention to my comments. I hope that County staff will find them useful.

Pamela Hall

References to RFP language:

**1. Accounting for future development wastewater needs**

- a. Project Background: B. Leon County Activities, 1d) Table of FLU maximum densities
- b. Scope of Services: 1)g) “Density of existing and future land use
- c. Scope of Services: end of section 1. “Land use shall be based on existing zoning and on build out conditions for future land use.”
- d. Scope of Services: end of section 2: “Deliverable will be table of relative expense for OSTDS, cluster system and central system per household for a range of housing density within areas identified in Task 1. Report shall document the impact of existing versus future land use in cost effective calculation.

Suggestion – cost estimates for a range of housing densities could be useful, though the densities could be as found in the Unsewered Target Areas. OSTDS densities are defined as not > 2DU/acre, of course.

**2. Anticipated property owner participation rate in retrofit activities and Time required for implementation**

- a. Scope of Services: 3) l) and 3) m) and
- b. Scope of Services: 4) “Develop scenarios to implement...”

Suggestion – Provide conditions to consider for financing (e.g. public payment for infrastructure, connection costs, plumbing costs, OSTDS replacement, etc.) and for time to implementation (e.g. new development, at septic tank failure, when infrastructure becomes available).

**3. Option of using different treatment standards for onsite vs sewer**

- a. Scope of Services: end of Section 1) “Deliverable will be a report of the classification system and map of recommended nitrogen reducing performance criteria for existing development retrofit and minimum standards for new development.”
- b. Scope of Services: end of Section 4) “Deliverable shall be a series of maps of retrofit target areas and standards for new development with associated technology recommendation.”

Suggestion – This language appears to indicate that the expectation is to have different standards based on whether development is new or existing. Differences in standards ought not to be based on age of development, but where it is located and what type of technology will be used to upgrade. It is development in areas that will use septic tanks might be a category for a less stringent standard, regardless of whether it is existing needing upgrade or

new. Use of OSTDS will remain throughout the Rural and Urban Fringe (and maybe other locations) and given the low amount of new development intended for these areas, a different standard such as NSF-245 could be a substantial savings in cost (public and private) and still overall provide sufficient nitrogen reduction, because most new and a lot of existing development will be on sewer or connected to sewer.

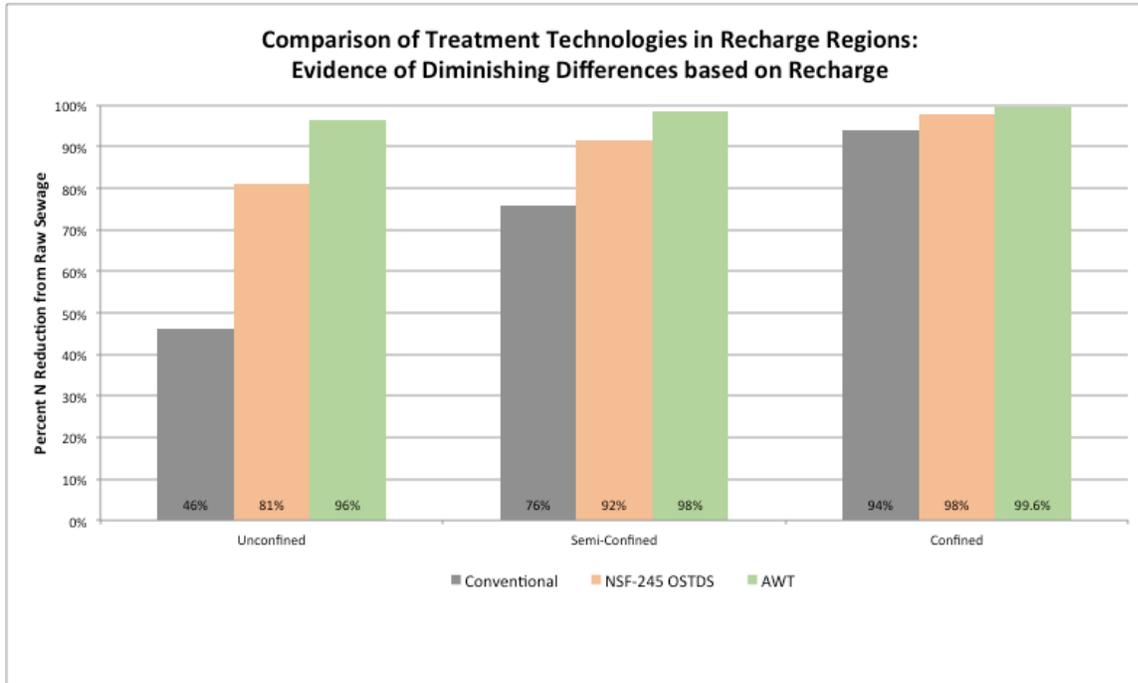
I may be misinterpreting what you intend here, so perhaps just clarification that standards could vary between technology used for nitrogen reduction, not on the age of the development on OSTDS – ie existing or new.

#### **4. Equal evaluation cost-effectiveness of alternatives**

- a. Scope of Services: Section 2). Add cost of plumbing from house to sewer or cluster infrastructure to list of items to include when evaluating cost effectiveness

Information supporting the value of considering different standards based on technology and location.

### Nitrogen Reduction accomplished by different Technologies in Locations based on Aquifer Vulnerability.



These results are based on values and computations used in the Wakulla Springs BMAP (2015). The amount of nitrogen that reaches the ground water, aquifer and springs depends on treatment, attenuation and recharge.

**“Conventional”** = nitrogen reduction of typical gravity septic systems

**“NSF-245”** = FDOH permitted nitrogen reducing OSTDS that can achieve 65% reduction

**“AWT”** = Advanced Wastewater Treatment that achieved 90% reduction

Attenuation of nitrogen levels occurs in drain fields and spray fields.

**“Unconfined”** very high soil permeability, areas south of Cody Scarp and the PSPZ

**“Semi-confined”** less permeable, most of the rest of Leon County

**“Confined”** very low permeability, limited areas of northeastern Leon County

The graph shows that the differences in the overall effectiveness of treatment technology varies among recharge categories. Specifically, differences among technologies are greatest in Unconfined areas, less so in Semi-Confined and there is hardly any difference in Confined. As cost is related to treatment levels, cost effectiveness (\$/kg N reduced) of technologies varies among regions of Leon County.