

Revised Comments on Draft Leon County CWTFP Scope of Services
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I am submitting these comments in my capacity as a member of the Wakulla BMAP OSTDS Advisory Committee. They do not represent the position of the Wakulla Springs Alliance Board.

I do not believe that the Scope of Services as written provides sufficient direction to the respondents to assure that the study produced will meet the intent of Sales Tax Project #26 as originally formulated by the Leon County Water Resources Committee. I suggest the following revisions so as to more effectively guide the preparation of responses to the Scope of Services that are sufficiently explicit to be judged against the intended purpose of the study.

1. Planning horizon – The Scope of Services should specify a planning horizon for this study. It seems logical to have it conform to that of the City of Tallahassee 2035 Master Sewer Plan Update (Hatch Mott MacDonald, 2016).
2. Alternative treatment technologies to be evaluated
 - a. Advanced Treatment OSTDS technologies
 - i. The Scope of Services should specify a minimum total nitrogen removal rate for advanced treatment OSTDS to be assessed in the study
 - ii. Advanced treatment OSTDS technologies should not be confined to passive nitrogen-reducing systems
 - iii. The Scope of Services also should specify that all advanced treatment OSTDS technologies assessed must be currently licensed by the Florida Department of Health and/or have NSF-245 approval.
 - b. The “connection to sewer” option should only be assessed within Unsewered Target Areas defined in the City of Tallahassee Master Sewer Plan Update (Hatch Mott MacDonald, 2016) that are located outside the City of Tallahassee, and other unsewered areas located outside the City of Tallahassee and within the Urban Service Area. For these areas, the Scope of Services should specify that alternatives analyzed must include (a) connection to sewer, (b) cluster systems, and (c) advanced treatment OSTDS
 - c. Elsewhere, the alternatives analyzed should be limited to (a) cluster systems and (b) advanced treatment OSTDS
3. Scope of Services Task #1: Environmental Support
 - a. This project does not need to analyze “groundwater susceptibility to nitrates” for the entire unincorporated area. The consultant should utilize the PFA designation in the BMAP as the primary determinant of spatial prioritization and otherwise apply the recharge factors defined in the NSILT (Eller and Katz, 2014). PFA designation is based in part on LAVA.

- i. Areas located within the BMAP basin that are outside the PFA should be given higher priority than areas located outside the BMAP basin, including those areas within the Primary Spring Protection Zone (PSPZ) that are outside the BMAP basin
 - ii. Further delineation of priorities within non-PFA areas within the BMAP basin can be defined using the NSILT recharge area differentials. Doing so will facilitate a systematic approach to conducting a cost effectiveness analysis of alternatives for each project area – see 5.d. below
 - b. It's not clear what is meant by "provide environmental review of alternatives for Facilities Plan."
- 4. Scope of Services Task #2: Mapping
 - a. Project area mapping types: I urge the county to stipulate in the Scope of Services that all areas of the unincorporated area be classified into one of four types of project area:
 - i. Currently developed properties within Unsewered Target Areas and other unsewered areas as defined in the Master Sewer Plan Update (Hatch Mott MacDonald, 2016) that area located outside the City of Tallahassee and within the Urban Service Area (USA) where projects would comprise wastewater treatment system retrofits
 - ii. Currently developed properties outside the USA where projects would comprise wastewater treatment system retrofits
 - iii. Currently undeveloped properties within Unsewered Target Areas and other unsewered areas located outside the City of Tallahassee and within the USA where projects would comprise new wastewater treatment facilities
 - iv. Currently undeveloped properties outside the USA where projects would comprise new wastewater treatment facilities
 - b. Map layers should correspond to the criteria to be used for evaluating alternatives within the project areas and for prioritizing among the project areas – see next section
 - c. What should be the basic spatial units – property parcels? TAZs? Other?
- 5. Scope of Services Task #3: Utility Engineering – This section should more clearly specify the particulars of the desired analysis, including sets of minimum required evaluation criteria and prioritization criteria and applicable methods and assumptions.
 - a. What should be the nature of the "coordination with existing utility providers"?
 - b. Two sets of assessment criteria appear to be needed: (a) evaluation criteria to be used to select the most appropriate wastewater treatment technology within designated "project areas" and (b) prioritization criteria that can be used to select among project areas to determine which projects should be undertaken first during implementation

- c. This task directs the respondents to “develop prioritization criteria” as a project product, but then indicates several criteria that should be “considered at a minimum.” Ideally, the assessment criteria should be established prior to commencement of the study. I think the Scope of Services should stipulate criteria that must be used and invite the respondent to identify others in their response to the Scope of Services rather than in the final product.

The Scope of Services lists the following as minimum criteria: benefit/cost analysis, easement or right-of-way constraints, construction feasibility, permitting constraints, and established Rural Communities.

- d. Given the objective stipulated in the Introduction to “reduce nitrate loading to the aquifer” and the directive in Task #3 to determine capital and operating costs, it would be more straightforward to conduct a cost-effectiveness analysis rather than a benefit/cost analysis which entails calculating net social welfare discounted to present time.

For assessing technology alternatives within project areas, a cost-effectiveness analysis should be conducted for annual total nitrogen load reduction per household for each applicable technology alternative in that project area, i.e. cost per kg/yr of total nitrogen reduction per household

- i. Cost: Task #3 speaks only to capital and operating costs. I believe actual connection costs (not connection fees) also should be included, regardless of who would pay for them, since these are not likely to be the same for each alternative. Cost estimates should reflect the type of project area – see section 4.a. above
- ii. Annual total nitrogen load reduction per household: Calculate by applying NSILT values for annual loading per capita, persons per household in Leon County, and the attenuation factor for each wastewater treatment technology (Eller and Katz, 2014, pp. 16; 28)¹:

$$\text{TNLR}_{ic} = \text{TNPP} * \text{PPHH}_c * (\text{TMTR}_i) * (\text{AF}_i)$$

Where TNLR_{ic} = annual total nitrogen load reduction per household (kg-N/hh/yr) for technology i in county c

TNPP = annual total nitrogen loading per capita = 4.5 kg-N/per/yr

PPHH_c = persons per household in county c = 2.48 per/hh

TMTR_i = total nitrogen reduction by technology i [insert values for T.P. Smith WWTP or selected advanced treatment OSTDS used for individual OSTDS or cluster system]

¹ Substitute the revised NSILT values if they become available in time to be useful. It's probably more important to use a consistent method than to use the most recent values for annual total nitrogen loading per capita and persons per household in the county except to the extent that they affect costs.

AF_i = attenuation factor for technology *i* = 0.60 for WWTPs and 0.40 for OSTDS

- e. The Scope of Services should specify additional evaluation criteria that the respondents must employ in assessing alternatives within each project area as well as other prioritization criteria for prioritizing among the project areas in which strategies should be implemented first.
- i. Which of the other criteria listed in Task #3 (easement or right-of-way constraints, construction feasibility, permitting constraints, and established Rural Communities) should be used as evaluation criteria within project areas and which should be used as prioritization criteria among project areas?
 - ii. “Permitting constraints” is vague; the following specifics at a minimum ought to be required:
 1. Land use types and maximum residential densities permitted by current zoning (see section v. below)
 2. Local and state regulations regarding minimum lot size for OSTDS
 - iii. Adequate available land for cluster system central treatment operations
 - iv. Population estimates for currently undeveloped Project Areas (see 4.a.iii and iv.) should be developed using the same methods used in the Master Sewer Plan Update (Hatch Mott MacDonald, 2016).
 - v. Priorities among individual project areas ought to be assessed on the basis of total load reduction to the Upper Floridan Aquifer within the BMAP basin (see section 3.a.i. above) by applying the applicable NSILT recharge factor (Eller and Katz, 2014, p. 29) for the project area locations (confined = 0.1; semi-confined = 0.4; unconfined = 0.9) to the load reductions formula above:

$$TNLR_{ic} = TNPP * PPH_c * (TMTR_i) * (AF_i) * (RF_{pa})$$

Where RF_{pa} = the NSILT recharge factor project area *pa*

1. As a general rule, projects located within the BMAP Primary Focus Area (PFA), which corresponds to the unconfined recharge area within the BMAP basin, should take precedence unless projects elsewhere can reduce total loading to the Upper Floridan Aquifer to a greater extent at lower cost per kg-TN/hh/yr, taking into account project area recharge factors.
2. Total load reduction estimates should include explicit assumptions about the percent of households that would participate as well as substantiation for those assumptions including assumptions about mandatory versus voluntary participation, subsidies for connection costs or other costs.

3. Total load reduction estimates for new development and redevelopment (as opposed to retrofits) should include explicit assumptions about projected development densities (based on current zoning) and numbers of new households within project areas within the planning horizon (based on TAZ population projections as in the Master Sewer Plan Update)
6. Maximize bang for the buck
 - a. The Scope of Services should direct consultants to utilize cost and performance information already produced to the greatest extent feasible including the Lombardo Report (citation) and the City of Tallahassee 2035 Master Sewer Plan Update (Hatch Mott MacDonald, 2016).
 - b. Leon County should provide all extant data layers needed for the mapping of optimal technologies by priority area and for selecting priorities among project areas
7. Demonstrate suitable expertise and experience to conduct this work
 - a. The Scope of Services should require respondents to demonstrate that they have the expertise and prior experience to conduct the types of analyses required for this project.
 - b. The county should invite other consultants to respond to the Scope of Services to maximize the likelihood of obtaining bids from the most qualified firms

References Cited

- Hatch Mott MacDonald. 2016. City of Tallahassee 2035 Master Sewer Plan Update. Tallahassee, FL: City of Tallahassee.
- Eller, K.T. and B. G. Katz. 2014. Nitrogen Source Inventory and Loading Estimates for the Wakulla Spring BMAP Contributing Area. Tallahassee, FL: Florida Department of Environmental Conservation.
- Florida Department of Environmental Protection (FDEP). 2015. Final Basin Management Action Plan for the Implementation of the Total Maximum Daily Load for Nutrients (Biology) by the Florida Department of Environmental Protection in the Upper Wakulla River and Wakulla Springs Basin. Tallahassee, FL: Author.