

STATE OF FLORIDA
DEPARTMENT OF HEALTH
Division of Disease Control and Health Protection
Bureau of Environmental Health

REQUEST FOR QUOTES

FOR

Evaluate the Impact of Onsite Sewage Treatment and Disposal Systems (OSTDS) on Surface Water Quality

1.1 Project Summary

The Florida Department of Health (Department) Onsite Sewage Program (OSP) seeks a provider to evaluate and quantify the impact of OSTDS on surface water quality based on comparing existing data from before and after the presence of OSTDS changes. An example of this would be the conversion of a neighborhood from OSTDS to sewer. Methods will include geographic information system (GIS) and statistical analyses. This request for quotes will result in a fixed-price purchase order not exceeding \$20,000. The project is anticipated to begin no later than January 1, 2021 or immediately after a purchase order is issued by the Department, whichever happens first, and will be completed by June 30, 2021. Provider must be registered in MyFloridaMarketPlace before the purchase order can become effective, unless exempted, and assume any associated fees.

1.2 Specifications

The project is based on the approach that provider will identify existing water quality and other monitoring data that they can access and that bracket a change in the presence of OSTDS potentially impacting the monitored surface water body. These data will then be used to assess if the change in OSTDS is associated with a change in water quality, and ideally quantify the impact per OSTDS as load.

Monitoring studies of OSTDS environmental impacts have frequently involved near-field groundwater monitoring, or surface water quality observations have been linked to the concurrent presence of OSTDS in the area using multiple lines of evidence. Fate and transport of contaminants of concern, in particular nitrogen, between near-field groundwater and the surface water can be complex and dynamic, impeding quantification.

The present request looks for a case study proposal that relies on regional data to analyze the relationship between OSTDS distribution characteristics (such as age, density, installation type, proximity to receiving waterbodies, household size distribution, household income distribution, etc.) and surface water quality conditions (nutrient and pathogen concentrations in surface water). The case study may be limited by the specific constant environmental factors in the

study area (soil types, soil physical, chemical and hydrological characteristics, separation of water table, regional geological condition, land topography, weather condition, etc.). Another challenge is the potential occurrence of confounding factors, such as changes in stormwater management, fertilizing and irrigation practices or weather patterns.

Still, this approach may allow researchers to confirm observed correlations between OSTDS distribution and water quality effects as causative relationships. For example, if statistically significant spatial and/or temporal relationship can be identified between OSTDS distribution and water quality effects in an area with a septic to sewer conversion, the impact of OSTDS can be confirmed and possible OSTDS loading effect on water quality can be quantified.

1.3 The Department seeks a provider to provide the following tasks outlined in Table 1

The successful provider shall identify a geographic area in Florida with existing data on surface water quality adjoining to an area before and after a change in the presence of OSTDS (sewer conversion). Past studies estimating the impact of OSTDS on water quality in this area would be beneficial but not required. Spatial and temporal data related to OSTDS distribution and environmental quality for the same area shall be collected to evaluate the OSTDS environmental impact and determine whether statistically significant differences can be identified after the sewer conversion. Analyses on the influence of confounding factors on OSTDS impact, such as soil, weather, hydrology, and topographic conditions of the region as well as impacts from the other human activities such as urban and agricultural fertilizer application, and sewer line leakage and wastewater or biosolids land application should also be included in the analyses.

Table 1. Project Tasks, Deliverables, Anticipated Timeframe, and Costs

Project Tasks	Task Deliverables	Provider Anticipated Timeframe (number of days since the start of the project)	Provider Anticipated Costs
Task 1. Finalize the research approach and gather identified and supplemental data	A written research approach document identifying the proposed case study area where OSTDS were eliminated and describing the data to be analyzed, source of data, data quality control, and analytical approach. Discuss with OSP staff to get approval of the research approach report.		
Task 2. Collect the proposed data	A report summarizing the data collected, source of data, period		

	<p>of records, quality control results, and databases holding all the collected data. Provide the database to the Department as part of the deliverable.</p>		
<p>Task 3. Analyze the collected data</p>	<p>A report describing in detail data preparation for the analysis, analytical methods, results, results interpretation, and evaluation of possible confounding factors, and data files for software applications.</p>		
<p>Task4. Develop and present draft final report</p>	<p>Draft final report and presentation of preliminary results by online conference to the research review and advisory committee for comment. Gather comments from RRAC and OSP staff. The draft report shall include an introduction to the study site, the description of the approaches, methods, analytical tools and parameters to be included in the study, the results from the analyses, discussion of the results, and a conclusion and recommendation for further future studies. The final report shall also include a list of all references cited by the study.</p>		
<p>Task 5. Final report</p>	<p>Final report, revising the draft final report based on the comments received.</p>		

All deliverables of the project, including the research approach report, collected data and analytical procedures and results, task reports, and draft final report and final report shall be provided to the Department in formats compatible with the software and hardware standard of the Department (currently, Microsoft software, such as Microsoft Office applications including Word, Excel, and Access, and Microsoft SQL Server), ArcMap 10.3.6, ArcGIS Pro or lower, PASW Statistics 18 or lower or R programming code. The Department currently uses PC so PC compatible hardware and software shall be applied to this project.

1.4. Documents to Be Submitted for Application

- (1) This Request for Quote document with “Provider Anticipated Timeframe (number of days since the start of the project)” and “Provider Anticipated Costs” in Table 1 being filled.
- (2) A draft analytical approach for this project with a list of parameters to be used for the analyses. At a minimum, the approach must identify the water body and the change in OSTDS presence that will be evaluated and demonstrate that sufficient data exist for the proposed analyses.
- (3) Resume or curriculum vita of all individuals to participate in the project that demonstrate the experience, expertise and achievements of the candidate in fields of onsite wastewater treatment (technology and regulation), environmental health and human health protection, GIS and statistical analyses, and report preparation.

1.5 Term and Funding

This request for quote will result in a fixed-price purchase order with a fund not exceeding \$20,000. The project shall start no later than January 1, 2021 or immediately after a purchase order is issued by the Department, whichever happens first, and shall be completed by June 30, 2021. Provider must be registered in MyFloridaMarketPlace before the purchase order can become effective, unless exempted, and assume any associated fees. Payment to the successful provider will be done through reimbursement for each task based on the anticipated quote specified by the provider in Table 1 after the task is completed and approved by the Department.

1.6 Instructions for Bid Submittal

Respond to this solicitation with required documentations specified in **1.4**.

1.7 Bidder Inquiries

If there are any questions, please send an email to Xueqing Gao at Xueqing.Gao@flhealth.gov or call 850-245-4579

1.8 Basis of Award

A single award shall be made to the best candidate provider based on provider’s academic qualification as well as the approach, parameters, project timeframe, and costs proposed by the candidate. The criteria listed in Table 2 will be used to determine the best candidate. While the Department reserves the right to select any or none of the providers, it is expected that the providers with the highest points will be considered first.

Table 2. Provider Evaluation Criteria

Evaluation Items	Evaluation Criteria	Weighting factor	Scores
Provider experience in OSTDS evaluation	0 – 1 years	2	0
	2 – 5 years		1
	6 – 10 years		2
	11 – 20 years		3
	More than 20 years		4
Provider's experience in GIS Analyses	0 – 1 years	2	0
	2 – 5 years		1
	6 – 10 years		2
	More than 10 years		3
Provider's experience in statistical analyses	0 – 1 years	2	0
	2 – 5 years		1
	6 – 10 years		2
	More than 10 years		3
Identify a case study area	An OSTDS change project area clearly identified (with project area boundary),	3	2 (must have)
	OSTDS-removal project starting and ending times clearly defined,	3	2 (must have)
	The project is substantial with more than 100 OSTDS converted,	3	2 (1 for less than 100 OSTDS converted)
	An estimate of age and condition of removed OSTDS	3	2 estimates provided 1 estimation method proposed 0 absent
	The hydraulic connection between the project area and the waterbody clearly demonstrated (either showing the watershed boundary or USGS NHD hydraulic connection),	3	2 for project located adjacent the waterbody 1 for project located adjacent to a tributary of the waterbody

	Number of long-term representative water quality stations located in the waterbody under question: each station has more than 10 years of quarterly sampling data for parameters of interest and three years of data each before and after the project time period.	3	2 for four or more r water quality station 1 for fewer than four water quality stations
	A control water quality station located in same general area beyond the project area: each station has more than 10 years of quarterly sampling data for parameters of interest and three years of data each before and after the project time period.	3	1 (must have)
	Weather stations having at least daily rainfall data for the same period of records as the water quality data can be identified in nearby area.	3	1 (must have)
	Information regarding other stormwater projects can be identified for the project and control area.	3	1 (must have)
Responsive parameters expected to be included in the analysis (1) Nitrogen (must be included in this project. Nitrogen species analyses is preferred) (2) Other water quality constituents (e.g. phosphorus, bacteria)	Available parameters include all nitrogen species (ammonia, nitrate/nitrite, total Kjeldahl nitrogen, and total nitrogen), total phosphorus, and bacteria (e.g. fecal coliform, E. coli, or enterococcus), and salinity or other conservative tracer.	3	4
	Responsive parameters include only nitrogen analyses (including all nitrogen species) and salinity or other conservative tracer.		3
	Responsive parameters include only total nitrogen and either phosphorus or bacteria (e.g. fecal coliform, E. coli, or enterococcus)		2
	Responsive parameters include only total nitrogen (without nitrogen species)		1
Confounding factor analyses	Clearly identify anticipated relevant confounding factors and include approach to address these factors	2	3
	Not so well identified anticipated relevant confounding factors and include approach to address these		2
	No relevant confounding factors and		1

	approach to address them proposed.		
Data analysis approach	Data analysis approach clearly described and reasonable.	2	3
	Data analysis approach not well described or will not result in clear conclusion.		1
	Data analysis approach not provided.		0
Project cost All proposed project costs received by the Department will be ranked as percentile (1) Lower than 25 th percentile (2) Between 25 th and 50 th percentiles (3) Between 50 th and 75 th percentiles (4) Above 75 th percentile	Lower than 25 th percentile	1	4
	Between 25 th and 50 th percentiles		3
	Between 50 th and 75 th percentiles		2
	Above 75 th percentile		1