

RESEARCH REVIEW AND ADVISORY COMMITTEE

ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS

ADVISORY TO THE DEPARTMENT OF HEALTH

AUTHORITY: SECTION 381.0065(4)(o), FLORIDA STATUTES

Final Minutes of the Meeting held at the Southwood Office Complex, 4025 Bald Cypress Way, Room 125N, Tallahassee, Florida
December 10, 2018

In attendance:

Research Review and Advisory Committee (RRAC) Members and Alternates:

In person:

- Eberhard Roeder (member, Department of Health)
- Elke Ursin (alternate, Department of Health)

Via teleconference:

- Carl Ludecke (Chair, member, Home Building Industry)
- Bob Himschoot (alternate, Home Building Industry)
- Roxanne Groover (member, Septic Tank Industry)
- Daniel Meeroff (alternate, State University System)
- Craig Diamond (member, Environmental Interest Group)
- Clay Tappan (alternate, Professional Engineer)
- Eric Rollings (member, Real Estate Profession)
- Thomas Baker (alternate, Real Estate Profession)

Absent members and alternates:

- Mark Tumeo (member, Professional Engineer)
- John Schert (member, State University System)
- Chris Pettit (alternate, Local government)
- Robert Washam (alternate, Consumer)
- Geoff Luebkemann (member, Restaurant Industry)
- Mark Repasky (alternate, Restaurant Industry)
- Matt Surrency (alternate, Local Government)

Department of Health (DOH), Onsite Sewage Program (OSP):

In person:

- Ed Barranco
- Xueqing Gao
- Debby Tipton

Other attendees:

Via teleconference:

- Alan Willett (Florida Department of Health)
- Denworth Cameron (Presby Environmental)

1. **Introductions** – Seven out of ten groups were present, representing a quorum. The meeting started at 9:00 am. The agenda was presented, introductions were made, and some housekeeping issues were discussed.
2. **Review of previous meeting minutes** – Chair Carl Ludecke called to review the RRAC meeting minutes of the June 20, 2018 meeting.

Motion by Dr. Eb Roeder and seconded by Mr. Eric Rollings for the RRAC to approve the minutes of the June 20, 2018 meeting with no

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changes. All were in favor, none opposed, and the motion passed unanimously.

3. Old Business and Research Program News – Xueqing Gao went over the action items from the last meeting.

Action Item 1 - Continue with high priority research projects. The five high priority research projects ranked by RRAC during the December 12, 2017 RRAC meeting are:

- 1) Continuation of Florida Water Management Inventory (FLWMI).
- 2) Continued Monitoring on Passive Nitrogen-reducing Onsite Systems.
- 3) Development of Funding Mechanisms for OSTDS Remediation and Upgrades.
- 4) Correlations between Water Quality, OSTDS, and Health Effect.
- 5) Estimation of Failure or Non-conformance Rates of OSTDS.

Xueqing Gao stated that the OSP had been focused on the top three research projects and would report to RRAC about their progress. The fourth and fifth projects were expected to start in 2019.

Action Item 2 – RRAC membership update. Xueqing Gao pointed out that the memberships of three (3) RRAC interest groups, including those for the Home Building Industry (Florida Home Builders Association), Professional Engineer (Florida Engineering Society), and Real Estate Profession (Florida Association of Realtors), will expire by the end of January 2019. Emails were sent to all these organizations and the RRAC members whose membership will expire, requesting recommendation letters, resume/curriculum vitae, and a filled application form for recommended candidates.

Action Item 3 – Final meeting minutes for the June 20, 2018 meeting. The final meeting minutes for the June 20, 2018 meeting approved by RRAC was posted on <http://www.floridahealth.gov/environmental-health/onsite-sewage/research/rrac.html>. In addition, all meeting materials related to the December 10, 2018 meet were posted on the same website.

Xueqing Gao summarized the Program News:

- (1) Mr. Ludecke will retire after serving RRAC for nine years and being the RRAC chair for three years. The OSP deeply appreciates all the expertise, knowledge, and leadership that Mr. Ludecke provided to this committee. Now, the Florida Home Builder's Association (FHBA) needs to recommend another representative to replace Mr. Ludecke and RRAC needs to elect a new chair. Xueqing Gao contacted the FHBA and was told by Mr. Doug Buck (director of FHBA's Governmental Affairs) that FHBA would like to recommend Mr. Himschoot as the primary representative of the organization. FHBA will consider a candidate for the alternate RRAC member and will inform the OSP when the decision is made.

Mr. Bob Himschoot confirmed the recommendation from FHBA and stated his willingness to serve on the RRAC as the primary member representing the organization.

Xueqing Gao asked RRAC members what procedure should be followed to select a new chair or whether there is anybody who would want to volunteer to be the chair.

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Mr. Carl Ludecke asked whether Mr. Bob Himschoot could take over the chair position.

Mr. Bob Himschoot stated that he had no problem serving the position. But he recommended that RRAC discuss about the new chair election and identify the most appropriate candidate who has the most experience managing this committee.

Ms. Elke Ursin said that, Mr. Bill Melton, who is the alternate chair of the committee, was not able to attend this meeting. She suggested that the position should also be made available to those who did not attend this meeting so that they will have the chance to volunteer themselves if they are interested. Ms. Ursin suggested that an email can be sent to all the committee members to see who are interested in the position. The OSP staff can assemble a list of interested candidates and provide it to the RRAC for decision in the next RRAC meeting.

- (2) Ms. Robin Eychaner took the environmental administrator position vacated by retired Mr. Dale Holcomb. Ms. Eychaner joined Florida Department of Health in 1994 (then Department of Health and Rehabilitative Services) in Collier County. She worked with many human and environmental health programs including food, institutional care facilities, schools, mobile home parks, migrant housing, complaints and onsite sewage treatment and disposal systems (OSTDS). Her new job as the environmental administrator includes rule development, OSTDS early failure data, bill analysis, support of the Technical Review and Advisory Panel, and supervising two staff working on variances, variance advisory board, contractor registration, and training.
- (3) The revised section 64E-6.009(7), Florida Administrative Code became effective on July 31, 2018. Homeowners can now apply for and install the in-ground nitrogen-reducing biofilter (INRB) as one of the nitrogen-reducing options.
- (4) The OSP posted some basin management action plan (BMAP) related materials on the OSP program website, including:
 - 1) [Letter to home builders regarding OSTDS permitting.](#)
 - 2) [Overview over nitrogen-reducing systems for springs protection.](#)
 - 3) [General page of DOH-approved product lists.](#)
 - 4) A link to [Florida Department of Environmental Protection's Septic Upgrade Incentive Program.](#)

Mr. Bob Himschoot asked whether the "Letter to home builders regarding OSTDS permitting" was sent to each home builders or was just posted on the OSP website.

Mr. Ed Barranco stated that the letter was sent to the Florida Homebuilder's Association. The OSP does not have a list of all the home builders.

Mr. Bob Himschoot asked to whom the letter was sent to in the Homebuilder's Association.

Mr. Ed Barranco said he will check, find out, and inform Mr. Bob Himschoot.

- (5) **Xueqing Gao** provided a summary on a literature review conducted by the OSP staff to evaluate the factors that may impact the effectiveness of nitrogen removal using lignocellulosic materials as an organic carbon source for denitrification. Possible factors included in the review are: plant species, lignocellulose grain size, type of wood, porosity of plant materials, hydraulic

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efficiency of different plant materials, and leaching of dissolved organic carbon from different plant species.

The literature review showed that the effectiveness of nitrogen-removal was not significantly impacted by plant species as long as the lignocelluloses are woody materials. Materials containing low content of hemicellulose and lignin, such as maize cobs, wheat straw, and green waste, can provide more biological available organic carbon and support higher denitrification rate. However, they also decompose more rapidly than the woody materials. Therefore, they are not the optimal lignocellulosic materials for long-lasting nitrogen treatment.

The grain size and type of wood (hardwood or softwood) showed no significant impact neither. There were some discussions whether lignocellulose of different grain sizes and different type of wood may have different porosity and/or different hydraulic efficiency, which may provide different substrate surface area and different hydraulic residence time for denitrification bacteria. Studies from Cameron and Schipper (2012) showed that the porosity and hydraulic conductivity of different wood types and lignocellulose with different grain sizes were very similar. Different types of wood and wood of different grain sizes did show difference in original dissolved organic carbon release. However, the difference usually disappeared within 20 days after the lignocellulosic materials were exposed to hydraulic loading. In summary, as long as woody materials are used as the bioreactive media, impacts of different types of wood and different grain sizes of the wood on the effectiveness of nitrogen-removal are insignificant.

Mr. Bob Himschoot stated that he understood that the size of the materials might not have a large effect on nitrogen-removal. But he concerned that if the produced lignocellulosic materials are not properly screened and picked, the quality of the wood may not be guaranteed.

- 4. Updates on the Basin Management Action Plans (BMAP) Related Activities – Mr. Ed Barranco** indicated that, immediately after the 13 BMAPs for Outstanding Florida Springs (OFSs) were adopted by the secretary of DEP, all of them were stopped from becoming effective because of petitions challenging them. Fate of these BMAPs will be determined on January 4th, 2019, which means that the OSTDS permitting will not be impacted until Monday, January 7th, 2019. Once effective, new construction on lots less than one acre in the priority focus areas of these BMAP basins will either have to connect to a sewer if available, or using nitrogen-reducing systems of a sewer is not available and will not become available within the next five years.

Mr. Barranco provided a list of situations in which a system construction will be considered as a new construction, including:

- 1) Where none has been.
- 2) Where the previous system was abandoned.
- 3) Where the previous DEP-regulated treatment facility is withdrawn.
- 4) To serve a house addition rather than modifying the existing system.
- 5) To serve an additional structure on the property.
- 6) To replace a system when a structure expands into the location of the existing, or where the pool placement or other structure impacts the existing system.
- 7) Where domestic flow increases over 20% at a non-residential establishment.

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8) Where there is any increase in commercial sewage flow.

Mr. Barranco indicated that any applications for new constructions completed prior to January 4, 2019 (not including the Site Evaluation) will not be subject to the BMAP requirement of a nitrogen-reducing systems. However, if sewer is available, these new systems are required to connect to sewer based on statutory requirements even without spring BMAPs. Permit applications for new construction completed after January 4, 2019 for systems on lots less than one acre in a PFA will be subject to the spring BMAP requirements.

Mr. Barranco stated that the spring BMAP requirements on existing systems will not be implemented until DOH makes some more rule revisions, DEP makes the funding available to support upgrading the existing systems to nitrogen-reducing systems, and the local governments complete wastewater management master plans and conduct wastewater management feasibility studies. DEP has established an incentive program, which became effective on September 17, 2018. Now the homeowners in the spring PFAs can opt to install the nitrogen-reducing systems and benefit from the incentive program funding, which will provide up to \$10,000 to cover the nitrogen-reducing aspect of the system. The incentive program fund will be paid directly to the licensed septic tank contractors and registered plumbers who carry out the construction. The septic tank contractors and plumbers who wish to construct nitrogen-reducing systems and be paid by the incentive money need to submit applications to the DEP Septic Upgrade Incentive Program and register with the MyFloridaMarketPlace. Currently, the incentive program fund is only available for PFAs located in non-agricultural BMAP areas. The counties eligible for this fund are Citrus, Hernando, Leon, Marion, Orange, Pasco, Seminole, Volusia and Wakulla counties. It is not foreseen that nitrogen-reducing systems will be required for repairing existing systems in agricultural BMAP areas. However, the BMAP requirements on new constructions also apply to the new constructions in agricultural BMAP areas. Mr. Barranco mentioned that, up to the RRAC meeting date, he heard that DEP has received an application for incentive program money from Marion County to install a NSF 245 nitrogen-reducing aerobic treatment unit (ATU).

Mr. Barranco stated that the overall goal for the nitrogen-reducing OSTDS is a minimum 65% of nitrogen removal. There are three general permitted categories that homeowners can choose from, which include the nitrogen-reducing ATU and performance based treatment systems (PBTSS), and the inground nitrogen-reducing biofilters (INRBs). The nitrogen-reducing ATU and PBTSS will need operating permit and maintenance contract agreement with maintenance entities. The INRBs will be regulated in the same way as conventional OSTDSs are regulated.

Mr. Barranco provided a brief introduction on the structure of nitrogen-reducing ATUs and indicated that ATU are not new to Florida. They have been used in Florida for 20-30 years since the first system was introduced into the state. Currently, there are about 8,000 NSF 40 certified ATUs installed in Florida. About 600 of them are nitrogen-reducing ATUs certified to meet NSF 245 standard, which reducing at least 50% of the nitrogen from domestic wastewater.

Mr. Barranco showed a partial list of nitrogen-reducing ATUs approved to be used in Florida. This list continues to grow. More ATU products are applying for approval from OSP. A complete list of nitrogen-reducing ATUs currently approved to be used in Florida can be found at

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<http://www.floridahealth.gov/environmental-health/onsite-sewage/products/ documents/245cert-atu-18.pdf.pdf>.

Mr. Barranco stated that PBTS is another permitted technology category that has been used in Florida for a while. Compared to ATU, PBTS needs to be designed by engineers. They are designed to treat specific pollutants to specific levels. Mr. Barranco showed a partial list of the nitrogen-reducing PBTS approved to be used in Florida. They all meet that the requirement of removing nitrogen at least 50%. The complete list of nitrogen-reducing PBTSs approved to be used in Florida can be found at <http://www.floridahealth.gov/environmental-health/onsite-sewage/products/ documents/npbts-components.pdf>.

Mr. Barranco briefly introduced both the in-tank and inground nitrogen-reducing biofilters. He provided some detailed descriptions on the INRB prescribed in the 64E-6.009(7). He acknowledged that there are some concerns that the fine aggregates (used to produce the aggregate + lignocellulose mixture) that are finer than fine sand may not always be available. He indicates that a rule revision effort is undergoing to allow sand and fine sand to be used as fine aggregate to mix with the lignocellulose.

Mr. Barranco also stated that another rule making effort that OSP is going to undertake is to incorporate BMAP requirements into the OSTDS Standards (64E-6, F.A.C) by citing related spring BMAPs in the rule. This will allow requiring existing systems be upgraded to nitrogen-reducing systems based on the BMAP requirements.

Mr. Barranco also explained the different requirements of drainfield water table separation when using different permitting technology categories. An INRB always requires 24 inches of water table separation (subtracting the depth of the lignocellulosic layer) from the infiltration surface of the drainfield. New ATU and PBTS will always require 24 inches of water table separation from the bottom of the drainfield. Nitrogen-reducing ATUs and PBTSs for repairing existing systems require 24 inches of water table separation if the ATU/PBTS can achieve a nitrogen-removal effectiveness between 50% and 65%. If the nitrogen-reducing ATU and PBTS can achieve 65% or more nitrogen reduction, the water table separation for systems repairs described in 64E-6, F.A.C will be followed.

Mr. Barranco indicated that OSP has posted several BMAP-related documents on the OSP program website. One of them is the BMAP implementation guidance document. The OSP program will review the guidance document with the county health departments to be impacted by adopted BMAPs.

- 5. Updates on the Florida Water Management Inventory (FLWMI) Project: Ms. Elke Ursin** provided a brief summary about the history and current status of the FLWMI project. She indicated that more and more applications using the FLWMI product have been developed, ranging from data service provided to the consultants to supporting data for student research projects.

Cycle one of the project was completed in September 30, 2016. The project was initially mandated by legislature in 2009. With the support of the Center for Disease Control (CDC) preparedness fund and DEP 319 nonpoint source pollution fund, the project team created the initial cycle 1 map. The cycle 2 of the project was finished in September of 2018. An important goal of the cycle 2 project is

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to fill the data gaps observed during the cycle 1 project period. The cycle 2 project also updated the parcel dataset to the latest available parcel dataset from the Department of Revenue and incorporated the latest permit information from DOH's Environmental Health Database for septic systems permitting.

Ms. Ursin provided a financial summary on the expenditure of the FLWMI project. About 50% of the funding expenditure was contractual with two contractual staff hired through the state term contract. The DEP 319 nonpoint source fund was used to pay for the cost of the contractual staff. The DEP 319 grant requires 40% match from the non-federal funding sources. Part of the match (about 26%) was from the DOH Onsite Sewage Research Trust Fund. The match fund was primarily used to pay the salary of an OPS staff working on the project. Other match funds came from the DOH Environmental Health Fee Trust Fund, which covered part of Ms. Ursin's salary. Funding from the CDC Environmental Public Health Tracking grant was used to pay the salary for the OPS staff when the expenditure on the Onsite Sewage Research Trust Fund was stopped. Ms. Ursin believed that the cost will go down as the project moves forward to update the map because there will be fewer data gaps to fill, and more efficiency gained through standardizing data processing procedures.

Major efforts for the cycle 2 project were put on identifying those facilities that contributed to the large data gaps. The project team contacted over 900 facilities and obtained data from 156 wastewater facilities and 356 drinking water facilities. Thirty percent of the contacted facilities did not provide responses at all. There were also some refusals to provide the data. About 55% of the contacted facilities responded and provided the data, which represented 1,244 million gallons of wastewater per day and about 8.1 million people served by the public water systems.

Ms. Ursin provided a summary on the wastewater treatment methods in Florida at the parcel level. She stated that about 64% built parcels in Florida have known or estimated sewer. About 26% of built parcels have known or estimated septic systems. The wastewater treatment method for about 9.6% built parcels are undetermined, which, with possible availability of data, may go either to sewer or septic. The total number of onsite wastewater systems in Florida is about 2 million. Compared to the total number of onsite systems estimated previously (2.1 million onsite sewage systems in Florida based on cycle 1 data), the new number went down. This does not mean that 100,000 onsite systems were converted to sewer between the cycle 1 and cycle 2 project periods. The data gap filling improved the understanding on the onsite systems in Florida and thus improved the accuracy of the data estimate.

For drinking water, about 9.7% of the parcels in Florida have private onsite wells. About 73 percent are on known or estimated public drinking water. The drinking water supply on 18% of built parcels is unknown or undetermined. The FLWMI project team started with no parcel-level data on drinking water supplies back in 2014. The team is working on narrowing the data gap.

Ms. Ursin provided a summary of data accuracy status when the cycle 2 project was finished. She showed that the accuracy status remained the same for about 6.2 million wastewater data points and about 5.5 million drinking water data points. The accuracy improved for about 490,000 wastewater data points and 870,000 drinking water data points. The accuracy of about 902,000 wastewater data points and about 1.2 million drinking water data points remained the same, but did have a change in the source name. There were also a small number of parcels showing a decrease

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in data accuracy. For example, an attribute changed from known to unknown or from known to estimated. These include 58,000 wastewater data points and 116,000 drinking water data points. These parcels need to be examined more closely to confirm their data accuracy status.

Ms. Ursin provided a list of counties that have more than 80% of their parcels on septic systems, including Levy, Dixie, Union, Taylor, Glades, Gilchrist, Holmes, Putnam, and Washington counties. Levy County ranked first with 89.22% of the parcels being served by onsite systems. Ms. Ursin also showed the counties with the most number of onsite systems, which include Polk, Dade, Marion, Lee, and Orange counties. All these counties had more than 90,000 onsite systems based on both cycle 1 and cycle 2 data. Among these counties, Marion County and Orange County are impacted by spring basin management action plans (BMAPs).

It is not expected that the Onsite Sewage Research Funds will be used for the cycle 3 project unless the project team will need more funding to support the data analyses by the OPS staff. Even that will be a small amount. Ms. Ursin mentioned that she is moving out of the position being the principal investigator and will serve primarily as a historical subject matter expert for the project. Michael Mitchell, who is the environmental health preparedness coordinator with the Bureau of Environmental Health, will take the lead for this project. Getting funding for the project is still challenging because there is no recurring standard fund for this project. The project is now supported by the CDC Environmental Public Health Tracking project funding to support an OPS data analyst and limited funds from CDC preparedness funding to pay for a GIS database administrator – Liz Sabeff, who is the workhorse behind this project and makes all the GIS maps for the project. In addition, the project is supported through limited funding from the Agency for Toxic Substance and Disease Registry (ATSDR) and some funds from CDC in response to Hurricane Irma. A major focus of the cycle 3 project is to streamline the integration between the inventory data and the data collected for onsite system permitting so that when the county health department issues a septic permit, it will be uploaded and put onto the inventory map. The project team will also update the parcel data to the latest Department of Revenue data and keep filling the remaining data gaps. The project team will keep updating the existing utility data, which is something that DEP is interested in, especially for areas where DEP has TMDLs and BMAPs. The data estimation assumption will also be refined. Some parts of the existing data estimation depend on the 2009 inventory data, which was found having some significant errors and needs to be removed.

Ms. Ursin mentioned that, for those who want GIS data for their data analyses, the project team can provide shapefiles, spreadsheets, and frequency summaries. For those who do not want to conduct their own data analysis, there is a web application that allows users to enter a property address and find out the wastewater and drinking water information about the property.

Mr. Bob Himschoot asked how the west Florida counties impacted by the hurricanes impacted this inventory?

Ms. Elke Ursin thought this is a good question. She said she will add it to the cycle 3 project as an action item and discuss it when all required project team members are in place.

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Mr. Bob Himschoot felt that it will be a long-term project. Those counties have some rebuilding to do. It would be beneficial if it can be documented on what happens to those homes that were previously on onsite systems and were the systems were severely impacted by the storm.

Mr. Bob Himschoot asked whether the FLWMI team is in a process of creating the budget for 2019 and 2020?

Ms. Elke Ursin: Part of the 2019 and 2020 project funding will come from the CDC response to Hurricane Irma – the Crisis corporative agreement. This fund will be used to upgrade the Environmental Health Database. The FLWMI project has a line item in there for a position to do the GIS analyses. In addition, the CDC Environmental and Public Health Tracking Fund for the OPS position will hopefully continue to be available. The project team also submitted a legislative budget proposal to request a GIS analyst position be permanently staffed for the inventory project.

Mr. Bob Himschoot: Maybe RRAC should be updated on the budget request for the environmental health section. RRAC should be involved in the budgeting process so that the committee can provide support to the appropriation to environmental health. Nobody has done anything like this before except that RRAC requested budget for nitrogen studies several years ago. Mr. Himschoot felt it is important to get RRAC re-involved in the budgeting process and assist the environmental health getting the needed funding.

Ms. Elke Ursin: That is a wonderful idea. When RRAC ranked the priority research projects, we got a little bit into the budget analyses.

Dr. Eb Roeder: That would be B9, particularly on the project money. Dr. Roeder had the impression that Mr. Himschoot was referring to a broader funding mechanism to fund the environmental health. Dr. Roeder suggested to talk about the status of the B9 money in the next RRAC session.

Ms. Elke Ursin interpreted Mr. Himschoot's question as about DOH proposed budget requests to legislature, DOH staff should also inform RRAC about those proposals so that RRAC members can pass on the information to the groups that they represent. This is certainly doable.

Mr. Bob Himschoot wanted to talk about OSTDS funding sources and upgrade incentive program in general. He mentioned that the Water Bill was passed in 2018. The bill includes two things that have significance in Florida. First, the bill discusses about the water quality issues with the Everglades and Lake Okeechobee. The second is that the National Onsite Wastewater Recycling Association (NOWRA) was able to get the NOWRA Act passed. This act requires that the federal Environmental Protection Agency (EPA) to monitor funding the onsite wastewater project and how the Clean Water State Revolving Fund (CWSRF) is used on onsite system upgrade and sewer connection. EPA has to do a reporting series to document the use of the state revolving fund. The CWSRF funding research effort and the efforts to get counties incentivized to request from DEP a CWSRF budget is on the right tract. The passage of the NOWRA Act gives some legitimacy to this effort from the national level. Mr. Himschoot felt that we need to continue moving forward to request as much money from CWSRF toward onsite system fund as we can. The biggest issue is that some

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counties have to set up the mechanism to collect those funds to make it a true state revolving fund. It is going to be an effort, but if we don't continuously push it, it will not happen.

Xueqing Gao confirmed with Mr. Himschoot that, based on the NOWRA Act, EPA has the obligation to monitoring how each state use the CWSRF to support the onsite activities. Gao asked whether this meant that EPA has authority to ask each state to earmark certain portion of the CWSRF for onsite systems or whether EPA just monitors without intervening what the states do.

Mr. Bob Himschoot: EPA has to make sure that the fund is available. If any state uses CWSRF, they have to report back to the congress that some progress has been made to use the fund to support the onsite wastewater systems.

6. Updates on the OSTDS Funding Investigation: Xueqing Gao provided an update on the investigation on using the CWSRF to support the onsite wastewater system activities. He first provided a review of the federal and state funds available to onsite systems in Florida, including

- 1) Florida Spring Protection Fund
- 2) Septic Upgrade Incentive Program Fund
- 3) EPA CWSRF
- 4) EPA Nonpoint Source Section 319 Grant
- 5) U.S. Department of Agriculture, Rural Development Housing Program
- 6) U.S. Department Housing and Urban Development through Florida Department of Economic Opportunity

Gao also indicated that, based on some online research, about 24 out of the 50 states used CWSRF to support onsite wastewater systems related activities. Major mechanisms to distribute the CWSRF fund to homeowners include direct lending, linked deposit, and pass-through funding.

The Florida CWSRF is managed by DEP. The program has received more than \$1.47 billion capital grants over the years and made over \$4.6 billion loans to water quality related projects. But the vast majority of the fund were provided to sewer and stormwater related projects. No CWSRF fund has been used directly on upgrading and improving onsite wastewater systems in Florida. The major challenge is that the program lacks a mechanism to distribute the money to homeowners. Direct lending is infeasible to DEP because of the larger number of onsite systems existing in Florida in contrast to the small staff team of DEP's CWSRF program. The program prefers that local governments or other entities can serve as the intermediate fund management entities to funnel the DEP money to homeowners. However, based on DEP, the program had contacted several counties. So far, no counties volunteered to serve as the intermediate fund management entities.

The OSP research team sent a survey email to all 67 county health departments, trying to understand why the locals lack the incentive to apply for and manage the CWSRF to help needing homeowners. The questions included in the survey are:

- 1) Are there strong needs for financial assistance to support OSTDS repairs and modifications?
- 2) How are OSTDS failures addressed without sufficient funding support?

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- 3) Are there any lenders available to the local people, and, if yes, who are they?
 - 4) If no lenders are available, are there any discussions of establishing local funding mechanisms?
 - 5) What entities in local areas may be able to manage a loan fund from DEP and dispense money to homeowners?
 - 6) What are the major challenges for local jurisdictions to become or establish such entities?

The OSP research team received responses from 28 counties. More than 83% of the response indicated some or strong needs of financial assistance for onsite systems repair and modification. More than 91% of the responses indicated that some sort of financial assistances are available to homeowners, but these assistance are very limited, and, in many cases, onsite system failures have to be addressed through legal processes.

About 38% of the responses indicated that homeowners have access to lenders, but more than 60% of the response indicated that homeowners are either not eligible or they simply do not know that there are lenders for onsite wastewater systems. The examples of available lenders included in received responses included:

- 1) Department of Economic Opportunity's Community Development Block Fund ([Community Development Block Grant Program](#)) (CDBG).
- 2) State Housing Initiative Partnership (SHIP) Fund.
- 3) United States Department of Agriculture low interest loan.
- 4) Commercial banks.
- 5) Jacksonville Utility Tap-In Program

Only one-third of the responses indicated that there are some discussions in the local areas to establish local funding management mechanisms. But this kind of discussions are usually ended due to the shortage of staffing or lack of funding management expertise. However, several responses indicated that the State Housing Initiative Partnership (SHIP) program managed through the county housing department can be a very good candidate to serve as the intermediate funding management entities between DEP and homeowners. SHIP is a state program mandated through the 1992 Sadowski Act, which authorized a statewide increase of the documentary stamp tax by 10 cents per \$100. The increased tax, plus another 10 cents transferred from existing documentary stamps from the general revenue, were used to generate two trust funds include the one for the local government Housing Trust Fund (69%) that funds the SHIP program and the one for the State Housing Trust Fund (31%) to support the activities of the Florida Housing Finance Corporation program, which manages the SHIP fund on behalf of the state. The SHIP program distributes low interest loans to all 67 counties and 52 CDBG entitlement cities in Florida. The minimum allocation is \$350,000 annually. In order to obtained SHIP fund, a local government must establish a local housing assistance program by ordinance, develop a local housing assistance plan and housing incentive strategy, and form partnerships and combine resources in order to reduce housing costs. The eligible activities for the SHIP fund include:

- 1) Emergency repairs.
- 2) New construction.
- 3) Rehabilitation.

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- 4) Down payment and closing cost assistance.
- 5) Impact fees, construction and gap financing.
- 6) Mortgage buy-downs.
- 7) Acquisition of property for affordable housing.
- 8) Matching dollars for federal housing grants and programs.
- 9) Homeownership counseling.

Onsite system repair can be considered as emergency repair. It appears that the SHIP program potentially provides a platform through which the CWSRF can be an active partner and supplement the state housing fund with the state revolving fund for onsite systems related management.

The possible next step for the CWSRF study includes:

- 1) Recommend to DEP state revolving fund program to provide more education on using the CWSRF on OSTDS.
- 2) Contact local entities and SHIP program for the feasibility of using the program as a cooperation platform to distribute CWSRF to homeowners.
- 3) Look for entities who are interested in taking on the intermediate money management role.

Xueqing Gao asked the RRAC committee to provide comments and suggestions on where we want to go from what we got on the funding study and requested help from RRAC member to provide SHIP and local government contact information to the OSP research team so that communication between the OSP program and local governments can be initiated.

Mr. Ed Barranco felt that contacting the local government and SHIP program is appropriate. At the same time, the county can be the same government that manage SHIP and the utility, who has lot of experience in getting the SRF fund. If the disconnect among these entities can be connected, SRF should be able to play an important role in supporting the onsite system. Meanwhile, the county government may also need to switch their paradigm. The SHIP program may be able to provide funding when there is a need for onsite system repair, the county can also be proactive by actively seeking the SRF support to upgrade aged onsite systems or increase the water table separation for onsite systems located in environmentally sensitive areas.

Mr. Eric Rollings mentioned a case of using the CDBG fund to connect 16 onsite systems close to the Clear Lake in City of Orlando to the sewer by pooling together the CDBG money from the city and the money from unincorporated Orange County. He wanted to raise RRAC's attention to the CDBG fund because it is a grant, not a loan, and, therefore, does not require payback. He also mentioned that, while the Sadowski fund (SHIP fund) is theoretically very attractive, it has been raided and put into the general revenue instead of the SHIP fund in recent years.

7. **Updates on Continued Monitoring Project:** **Xueqing Gao** provided a brief update on the status of the continued monitoring on four full-scale reactive media systems installed and monitored during the Florida Onsite Sewage Nitrogen-Reducing Strategies (FOSNRS) study. Gao introduced the goal of the monitoring project, which is to assess the long-term performance of these systems on nitrogen-removal and the effectiveness of these systems in removing other pollutants. At the same time, the monitoring project will assess any issues appear with these systems as they become

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mature and explore possible solutions for future implementation of these types of systems in large scale.

Gao stated that the continued monitoring was funded by \$72,000 319 grant (60% of the total budget) and \$48,000 DOH match (40% of the total budget). The DOH match primarily comes from the OSP environmental health fee trust fund that primarily covers staff's salary and the OSP research fund (B9) that covers the costs for laboratory analyses of collected samples. The project started in June of 2018 and will end in September of 2021. The four systems included in the project will be monitored eight times during the project period, generally on a quarterly basis. So far, the project team has completed Task 1 of the project and submitted the quality assurance project plan (QAPP) to DEP. DEP approved the QAPP in October of 2018. The project team also sampled these four systems four times. Results of three sampling events are included in the presentation. Results for the fourth sampling event were just received from the laboratory.

Three of the FOSNRS systems included in the continued monitoring project are located in Seminole County and one is located in Marion County. These systems include (1) two in-tank media systems, which hold the two-stage media in two separate tanks: (2) one combined system that have the stage 1 sandy media stacked on top of the stage 2 lignocellulosic media underneath the drainfield and the effluent from the stage 2 media is funneled into another stage 2 media – sulfur that is contained in a tank; and (3) an in-ground nitrogen-reducing media systems.

The four sampling events were conducted, respectively, in March and November of 2017, April of 2018, and November of 2018. Based on the monitoring results from the first three sampling events, these systems appeared to perform well and still effectively remove nitrogen as well as other pollutants. Compared to the FOSNRS study period, the TN concentration and the concentrations of other pollutants in the final system effluent during the continued monitoring period showed no differences that are statistically significant. All four systems showed no less than 70% total nitrogen removal based on results from the first sampling events. In most cases, the nitrogen-removal effectiveness of these systems was higher than 90%.

Ms. Elke Ursin asked when the monitoring project will end. Xueqing Gao said the project will end in September of 2021. Ms. Ursin also asked whether the samples collected from the inground nitrogen-reducing system are representative. Whether chloride was measured to show the possible dilution effect from the stormwater. Gao stated that one of the field parameters that is intended to be measured with the sampling is specific conductivity. This parameter can be used to evaluate possible dilution of the treated wastewater by stormwater. Gao pointed out that, during the first three sampling events, because of the small quantity of samples being produced from the drainfield sampling points, not enough samples were available for conductivity measurement. But during the fourth sampling event (results not included in this presentation they were just received from the laboratory), samples were collected from the inground nitrogen-reducing biofilter in two consecutive dates. Samples collected on the first day were for chemical analyses. Samples collected on the second day were used for field parameter measurements. Using this approach, the project team was able to determine the conductivity of the collected samples.

A phone problem took place close to the end of the meeting. While the Adobe Connect web conference application still worked, the DOH RRAC meeting organizers could not hear anything from the RRAC

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members on the teleconference call. Xueqing Gao announced that all presentations have been given. He will send an email to all RRAC members about the new chair election. He wished everybody Merry Christmas and Happy Holiday.

Motion by Mr. Clay Tappan and seconded by Dr. Eb Roeder, for the RRAC to adjourn at 12:00 p.m. None opposed, and the motion passed.

The meeting adjourned at 12:00 pm.