

**INDIAN RIVER COUNTY, FLORIDA
DEPARTMENT OF UTILITY SERVICES**

Date: April 25, 2017
To: Jason E. Brown, County Administrator
From: Vincent Burke, P.E., Director of Utility Services
Subject: Update on the Residuals Dewatering (Biosolids) Facility

BACKGROUND

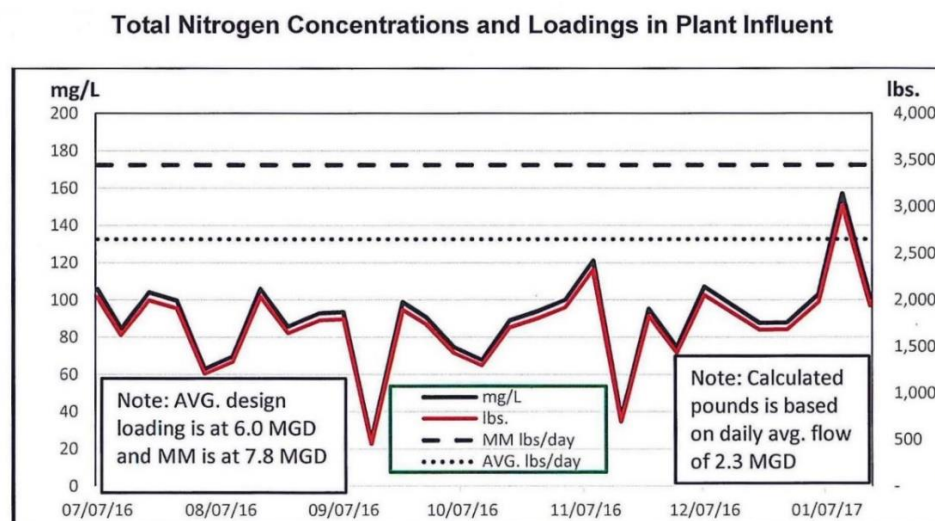
On April 11, 2017, the Indian River County (IRC) Board of County Commissioners (BCC) approved the Florida Department of Environmental Protection (FDEP) Consent Order 17-0072 for the West Regional Wastewater Treatment Facility (WRWWTF). The plant will be operating under intense scrutiny by the FDEP for the next two years, facing potential financial penalties for any exceedances of the permit limits.

ANALYSIS

In November 2015 during the permit renewal process for the WRWWTF, the FDEP recognized significant fluctuations with loadings into the facility. At that time, the FDEP issued a compliance schedule requirement for Indian River County Department of Utility Services (IRCDUS) to perform an Industrial Waste Survey to characterize the waste stream that comprises the influent to the WRWWTF and identify the cause of the elevated loadings. That process has been under way since April 2016.

In January 2017, the FDEP informed IRCDUS of their intent to file a consent order with IRCDUS due to on-going permit limit exceedances observed at the WRWWTF. In advance of the consent order, IRCDUS enlisted the help from an outside consultant to assist the operators in troubleshooting plant processes. The findings from these investigations were presented to IRCDUS on February 10, 2017. Shortly after receiving this report, IRCDUS completed the industrial waste survey in accordance with compliance schedules in the permit. Results from this investigation, coupled with findings from the consultant's work, pointed to the Residuals Dewatering Facility (RDF), also known as the biosolids facility, as a main contributor to the WRWWTF's exceedances (see Figure 1).

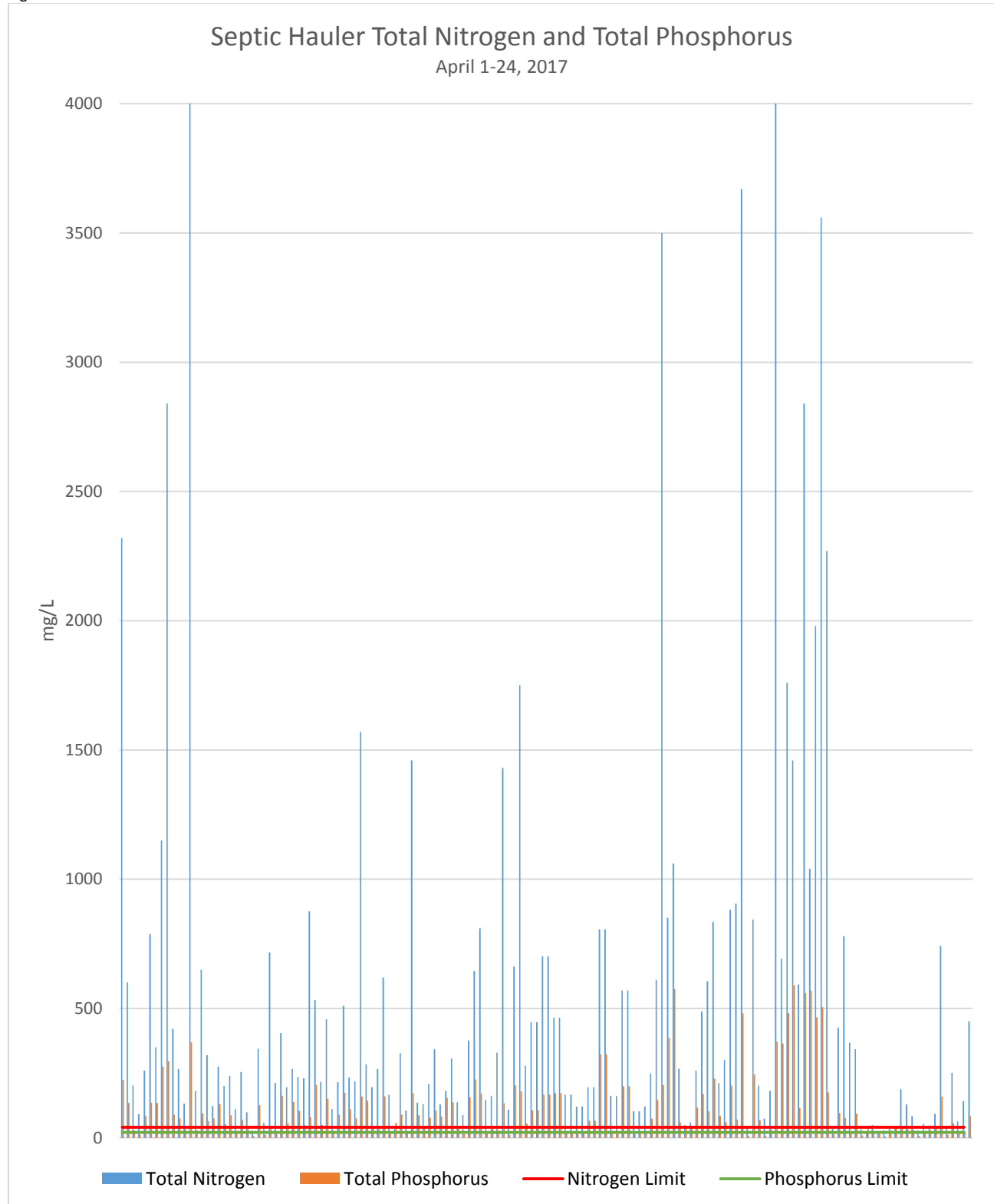
Figure 1.



Note: Dotted line reflects maximum design influent loading for Nitrogen at plant capacity of 6 MGD, solid red line shows plant capacity being used at the current flow of 2.3 MGD.

Ongoing investigations, which included grab sampling of all incoming septage, porta-potty and grease haulers for a period of 10 days in late March/early April 2017 at the RDF has confirmed that elevated loading rates are entering the RDF prior to dewatering. After processing, the RDF liquid side stream (centrate) flows to the WRWWTF and makes up a portion of that plant's influent (see Figure 2). IRCDUS's industrial pretreatment limits nitrogen to 40mg/L, yet we have received loads of 4,000 mg/L. IRCDUS's phosphorus limits are 20 mg/L, and we have received loads as high as 590 mg/L.

Figure 2.



It has been determined that the influent to the WRWWTF has nutrient strengths beyond the design capacity of the plant, rendering it incapable of meeting permit limits and thus future permit violations may not be avoidable until either the influent falls within the design characteristics of the WRWWTF or these sources of elevated loadings are removed from the influent. As the findings above show, the contribution from the RDF represents a significant portion of the nutrient overloading of the WRWWTF.

On April 1, 2017, a manifest log system was implemented at the landfill scale house to more accurately track what is discharged to the RDF. This system required all haulers to supply to IRCDUS the information that is required for their Florida Department of Health (FDOH) permits under Florida Administrative Code (FAC) Chapter 64E-6.010. A review of the logs to date has confirmed that a significant percentage of the incoming hauled waste to the RDF is generated outside of Indian River County (see Figures 3 and 4).

Figure 3.

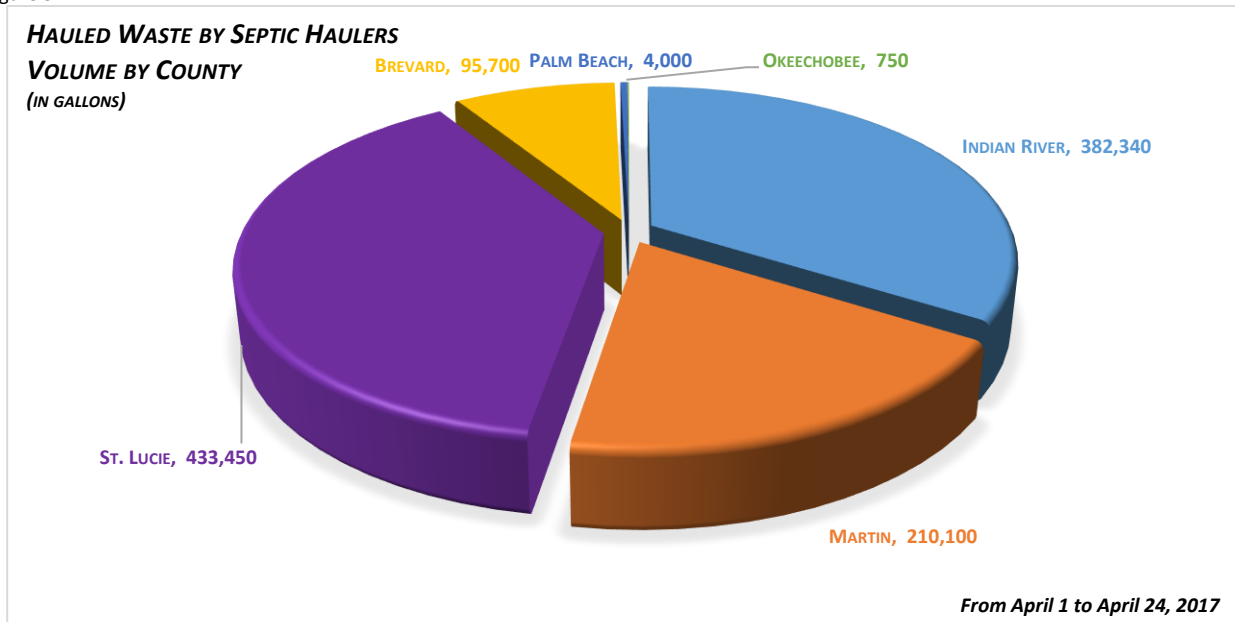
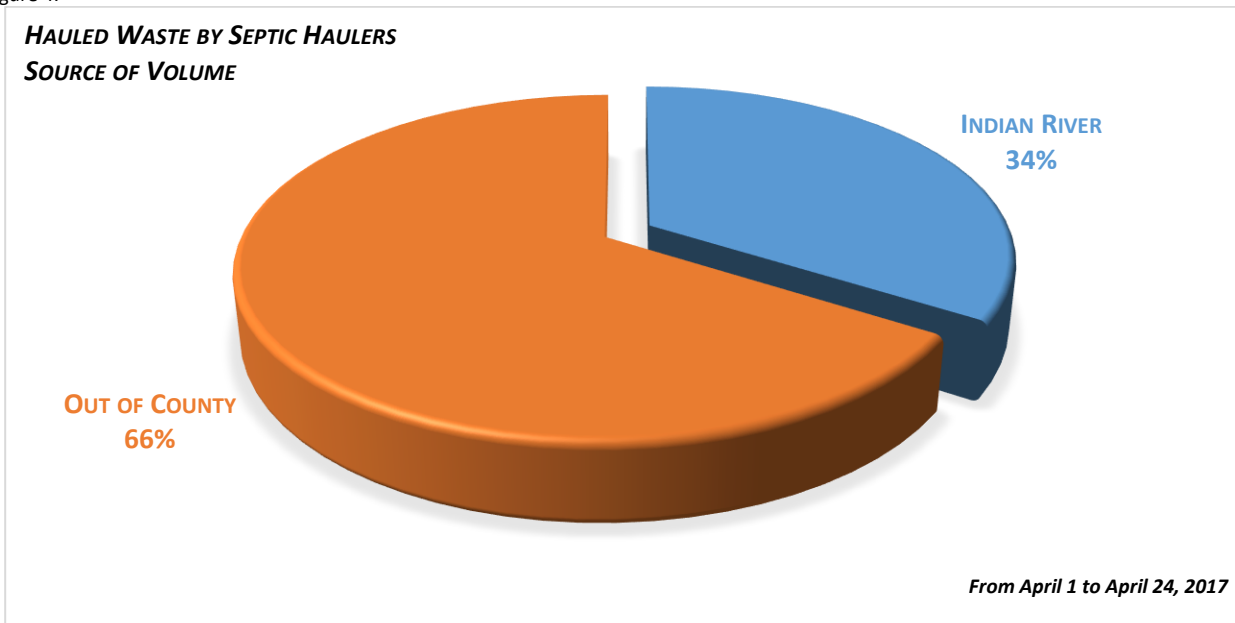


Figure 4.



As shown above in the charts, it has been ascertained that approximately 66% of the hauled waste brought to the site by septic haulers is not generated in Indian River County. These wastes come from commercial,

industrial and municipal sources in addition to residential septic tank cleanings located in Palm Beach, Martin, St. Lucie, Brevard and Okeechobee counties. The RDF was not intended for this purpose. It was planned and built to serve the needs of the Indian River County community and the IRCDUS wastewater treatment facilities. This was evident back in 2006, as referenced in the January 19, 2006, Utility Advisory Committee meeting minutes where it was stated that contracts for septic haulers with sludge coming from outside of Indian River County would not be renewed when expired. It is unclear at this time why that issue continued. IRCDUS is looking closely at the contribution from the out-of-county wastes. Table 1 summarizes the breakdown of material received from April 1 to April 24, 2017, as compiled from hauler manifests.

Table 1.

***Hauled Waste By Company and County
April 1 to April 24, 2017
(in gallons)***

	<i>Indian River</i>	<i>St. Lucie</i>	<i>Brevard</i>	<i>Martin</i>	<i>Palm Beach</i>	<i>Okeechobee</i>
Accurate Septic	3,600	94,100	1,000	64,200	-	-
All About Septic	-	15,000	-	11,000	1,000	-
All County Septic	4,000	37,450	-	37,250	1,000	-
All Rite Septic	35,800	-	-	-	-	-
All Star Septic	1,000	15,650	-	28,900	-	-
Best Septic	6,700	-	3,450	-	-	-
Brian Davis	15,900	2,000	19,100	-	2,000	-
Darpro	400	10,000	4,000	200	-	-
Denny's Septic	-	40,450	-	35,600	-	-
Drain Master	-	41,950	-	5,450	-	-
Du-All Plumbing	-	23,000	-	27,500	-	-
East Coast	6,350	-	-	-	-	-
Gotta Go Green	15,440	1,250	-	-	-	-
Hinkle & Sons	40,000	900	-	-	-	-
Meeks Plumbing	63,840	72,250	5,400	-	-	750
Plop Jon	-	-	-	-	-	-
Reliable	189,310	62,450	15,650	-	-	-
Rooter One	-	17,000	4,000	-	-	-
SOS	-	-	43,100	-	-	-

Based on the April 2017 manifest tracking logs, it is suspected that the surrounding counties are using the IRCDUS RDF for two reasons. The first is that, historically, the county has not closely monitored the influent stream into the RDF. Secondly, the rates in effect appear to be considerably lower than surrounding areas. These factors have enticed haulers to the area as an inexpensive and easy way to discharge their collected pump out for a relatively small fee.

In conjunction with this investigation, staff contacted other municipalities and treatment facilities throughout the state and communicated with regulatory authorities in order to determine the best approach for IRCDUS to take in order to prevent future permit violations at the WRWWTF. It was determined that many facilities do not accept hauled wastes of any kind or only accept their own in-county waste due to many of the issues such as the ones IRCDUS is now facing.

The following is taken from Brevard County's wastewater site, pertaining to their facility:

Figure 5.

The Septage and Grease Receiving Facility is located at 10001 N. Wickham Rd in Melbourne. The station is open Dawn to Dusk, seven days per week. If after hours service is needed, special arrangements can be made by calling the Wastewater Treatment Plant Office at 321-255-4328.

The Facility accepts septage and grease collected from Brevard County only. It does not accept industrial or hazardous waste. The rate for disposal is \$69.96 per 1000 gallons.

All haulers must be duly licensed by Brevard County Consumer Health. All vehicles must meet state and federal regulations governing transport of waste liquid on public roadways. Prior to any disposal activity, the applicant will provide certificate(s) of insurance verifying Auto Liability Insurance with combined limits for Bodily Injury and Property Insurance in an amount no less than \$300,000 per occurrence. Insurance must remain in effect and a current certificate be kept on file with Brevard County.

For more information please call 321-255-4328.

Brevard County's rates are 123% higher than Indian River County and include restrictions on the incoming wastes, prohibiting items; such as porta-potties and mixed loads of septage and grease.

<i>Location</i>	<i>Rate*</i>	<i>Equivalent To</i>
Indian River County Dewatering Facility	\$ 7.51/wet ton	\$31.32/1000 gallons
Broward County Septage and Grease Facility	\$13.19/wet ton	\$55.00/1000 gallons
Brevard County Septage and Grease Facility	\$16.78/wet ton	\$69.96/1000 gallons
City of West Palm Beach Septage and Grease Facility – Monday through Saturday	\$15.75/wet ton	\$65.67/1000 gallons
City of West Palm Beach Septage and Grease Facility – Sunday and Holidays	\$23.62/wet ton	\$98.51/1000 gallons

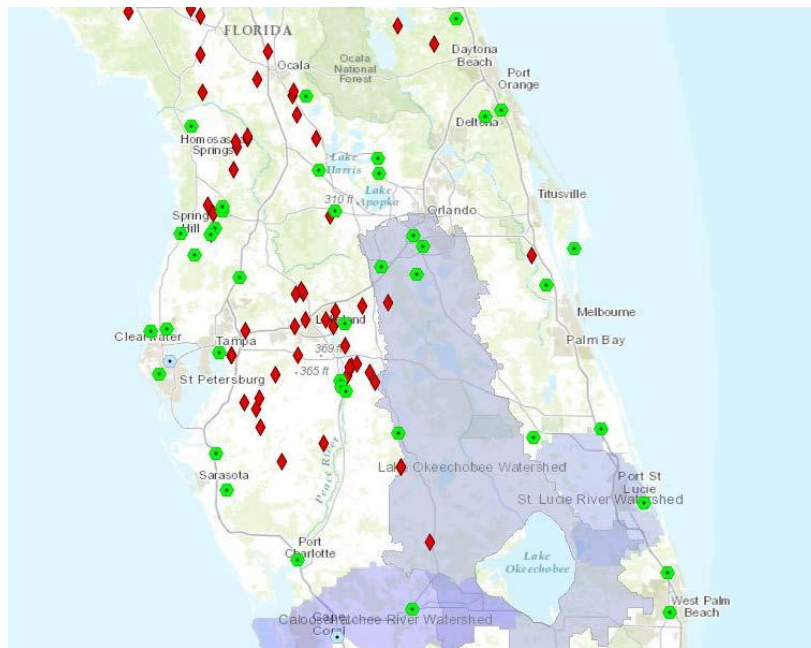
*Assuming 8.34#/gallon

After reviewing the findings of the manifests, a meeting was held on Tuesday, April 25, 2017, with local septage haulers to update them on the issues IRCUDS is facing. Eight haulers in total were invited: five attended, two were unable to attend and there was one no-show. As the regulatory agency for the hauling companies, representatives from the Department of Health were in attendance as well.

As of the date of this agenda, approximate costs of \$147,000 for laboratory expenses, staff time, Wetlands Cell 14 maintenance and outside consultants have been encumbered to help bring the WRWWTF back into permit compliance. There will be additional expenses that will be based on results from the unit operations and process control audit currently being conducted. Tipping fees from the biosolids collection fee have not covered the above costs, nor will they cover these unanticipated expenses. Existing rate payers could potentially be subsidizing out of county wastes. What can be confirmed, and what is the least costly solution at the moment, is to reduce or eliminate the nutrient loading to the WRWWTF from the RDF. Ideally, all loading above and beyond what IRCUDS has to process from its regional WWTFs should be omitted. Practically speaking, that option may not be viable. The economic and environmental challenges posed by this option are great. A more realistic option is to prohibit all out-of-county waste from coming to the RDF. By reducing 66% of the nutrient loading from hauled waste brought to the site by septic haulers, staff believes that this is a very large first step in correcting the nutrient anomalies that have caused the WRWWTF to be out of permit compliance. Continued allowance of out-of-county waste delays a solution and further affects IRCUDS's ability to meet its permit requirements, resulting in inevitable and continued FDEP scrutiny, potential fines attached to the Consent Order, and may result in additional capital costs incurred either at the RDF or WRWWTF (or both) to mitigate the nutrient loading.

A review of the FDEP website has an [interactive map](#) reflecting other treatment facilities that may be accepting hauled waste (see Figure 6).

Figure 6.



It has been determined by inside and outside review that the contributions from the RDF to the WRWWTF need to be eliminated or significantly reduced to bring the WRWWTF back into permit compliance. IRCDUS staff has taken preliminary action to turn away those haulers who have delivered material (industrial waste and biosolids from other treatment facilities outside IRC) that exceeds our limits, have caused plant upsets, and plant permit non-compliance. Regulatory agencies have been informed of this action, but there remains a great deal of out-of-county waste that continues to be brought into the facility.

In order to assist our staff in overseeing what is coming into the facility, we are considering development of an agreement that will outline the expectations of haulers bringing in any future deliveries to the RDF. Such an agreement could be similar to the one Brevard County uses (See Attachment 1). Staff would work with the County Attorney's office to create such an agreement that would be required of all haulers prior to the privilege of using the RDF.

Potential Alternatives for Consideration

Based on the information obtained in the past three weeks and from the historical permit excursions experienced at the WRWWTF, staff proposes several items for BCC consideration:

1. Shut off ALL incoming septage/grease/porta-potty/commercial/industrial hauled material. If the RDF is indeed the "smoking gun" as the data indicates, then elimination of all outside sources would allow the WRWWTF to run as designed without these nutrient loading sources. The reality with this approach, though, is that the haulers (inside and outside the county) would have limited alternatives. Staff would not recommend this option.
2. Shut off all out-of-county hauled waste for out of county and local haulers. We know that 66% of all the hauled material is from out of county. Our RDF has become a cheap and easy solution for those in business but this practice cannot continue. Shutting off all out-of-county hauled waste now is preferred. This will lessen the load on the WRWWTF immediately.
3. Shut off the out-of-county hauled waste within 30 days (or by June 1, 2017). This is an option but it allows those businesses to keep doing what they are doing temporarily. This timeframe allows haulers to find an alternative solution but the problem is that this option keeps our facility from being in

compliance and we will continue to violate our permit requirements. Staff would not recommend this option.

4. Hybrid approach. Shut off all out-of-county hauled waste now. Give the IRC haulers who receive material from out of the county a 30 days' notice to make arrangements for the material generated in other counties to go elsewhere. This option reduces the load to the plant immediately and allows local businesses time to make alternative arrangements. Those haulers who do business out of the county and are not stationed locally will need to make arrangements within their own municipality in which they operate. Staff would recommend this option.
5. If RDF operations must continue, staff is looking at ways to hydraulically remove the centrate from going to the WRWWTF in order to confirm if the total elimination of RDF loads will bring the plant back into compliance. As an emergency protective measure, it is estimated that \$52,800 would be need to cover expenses for four weeks to capture and transport ALL the liquid centrate generated at the RDF and bring it to another IRC treatment plant. This option has yet to be discussed with the FDEP and would only be available if non budgeted funding is made available and the regulatory agency approves this temporary stop-gap measure. Funding for this expenditure would need to come from fund balance through a budget amendment as no such current fiscal year budget funds are available. The deficit would come from operating fund balance. Operating funds come from water and sewer sales, not the biosolids collection fee. In short, the IRC rate payers will be subsidizing this budget amendment. Without changing the characteristics of the centrate, however, we may inadvertently be moving the underlying problem to another IRCDUS facility and after four weeks, we may be looking at the same issue we currently face at WRWWTF.

FUNDING:

- There is no funding required if the out of county wastes are prohibited from coming to the RDF.
- There will be additional costs either at the RDF and /or the WRWWTF for lab testing, process control equipment and other treatment modalities that are unknown that the time this agenda is being prepared. Such costs could be very significant. Once the CH2M audit is complete and a technical memorandum is provided, staff will have more information to bring back to the board for review and approval.
- If the BCC decides to authorize the expenditure of \$52,800 to truck the centrate from the RDF to another IRC facility, a budget amendment would be needed. Funds for the budget amendment would come from fund balance in the operating fund. Operating funds come from the water and sewer sales.

RECOMMENDATION

Staff recommends the BCC:

1. Shut down all haulers who are from out of county immediately and authorize staff to notify IRC haulers they have 30 days to find alternative arrangements for any waste they currently pick up out of county.
2. Direct staff to work with the County Attorney's office to create an agreement similar to the one in use by Brevard County that can be tailored for use by IRC haulers.
3. Direct staff to evaluate the cost basis and pricing structure of the facility to determine fair and equitable rates to cover operating expenses and environmental concerns.

ATTACHMENTS:

1. Brevard County Sample Septage and Grease Hauler Agreement/Application
2. Three-year Cost Summary of the Biosolids Operation