



## INDIAN RIVER COUNTY, FLORIDA DEPARTMENT OF UTILITY SERVICES

**Date:** July 5, 2017

**To:** Jason E. Brown, County Administrator

**From:** Vincent Burke, P.E., Director of Utility Services

**Prepared By:** Arjuna Weragoda, P.E., Capital Projects Manager

**Subject:** Countywide Septic to Sewer Conversion Evaluation/Ranking Report – Results

### DESCRIPTIONS AND CONDITIONS:

On October 18, 2016, under Consent Agenda Item 8-G, the Indian River County Board of County Commissioners (BCC) authorized staff to proceed in the development of a more comprehensive septic to sewer (S2S) priority ranking plan along with cost estimates for platted subdivisions currently on septic. As part of that approval, the BCC approved Work Order No. 2 for Schulke, Bittle & Stoddard, LLC, (SBS) to provide professional engineering services for a comprehensive countywide S2S priority ranking study based upon various physical and environmental factors as well as construction cost estimates. The study focused on platted subdivisions within the unincorporated Indian River County and City of Sebastian.

### ANALYSIS:

SBS has completed the evaluation, and the entire report is attached as part of the subject staff report. The goal of the evaluation is to prioritize the areas based upon various physical and environmental factors, and determine the feasibility of incorporating the proposed systems into the 10-year Capital Improvements Plan. An IRC-specific formula was developed and modeled after similar studies for Martin County (*Martin County Septic System Evaluation Final Report; CapTec Engineering, Inc.; February 13, 2015*) and Brevard County (*Save Our Lagoon Project Plan for Brevard County, Florida; TetraTech, Inc and CloseWaters LLC; July 28, 2016*). The IRC formula was modified from the Martin and Brevard studies to consider and weigh physical and environmental factors that SBS and IRCDUS staff determined to be best representation of Indian River County conditions. The following factors were utilized in the initial ranking of the three hundred and twenty-five (325) platted subdivisions currently on septic:

- Population Density for Loading Concentrations
- Proximity to Surface Waters
- Location of the Community in Relation to the 100-year Flood Plain – FEMA Flood Plain
- Depth of the Ground Water Table
- Soil Conditions of the Drain Field – Soil Type
- Age of the Surface Water Management System
- Age of the Existing Onsite Sewage Treatment and Disposal Systems (OSTDS)

Each factor was evaluated and assigned an index number that generally ranged from 0 to 12, with 0 being the minimum and 12 being the maximum impact. The formula used to determine the ranking is simply the sum of all the factors. The higher the resulting sum (the “score”), the higher the estimated impact to the Indian River Lagoon (IRL). This formula, initially developed for the Martin and Brevard

studies, weighed each factor relatively equally. However, SBS and IRCDUS staff agree that both factors, “Population Density” and “Proximity to Surface Waters”, should be weighed more heavily. It is believed that these factors, at their worst conditions (systems close to surface waters communities with high density), will likely cause a disproportionately higher impact to the environment. Consequently, each of these factors, “Population Density” and “Proximity to Surface Waters”, were adjusted by an “importance factor” that ranged from 1.0 to 2.0. The 325 subdivisions were ranked in the order of the overall score, where number 1 had the highest overall score (89.19) and number 325 the lowest (26.97). Once the initial ranking was finalized, an Engineers Opinion of Probable Cost (OPC) was computed for the top thirty five (35) ranked subdivisions. The top ranked subdivisions were further evaluated based on the following factors:

1. Aquatic Health - Environmental Impact Evaluation or the Initial Ranking
2. Sewer System Evaluation and Cost Data
3. TN/TP Efficiency - Since most references and studies showed that Phosphorus was removed by a functioning OSTDS, the TP efficiency computations were removed from the analysis
4. Public Health - Based on the availability of potable water

The SBS study evaluated the total nitrogen (TN) and total phosphorus (TP) removed from the S2S conversion for each individual area and computed a cost per pound for TN removal on the top 35 ranked subdivisions. TP (as noted above) computations were removed from the analysis.

As part of the evaluation, average and peak wastewater flows generated by each of the top 35 ranked subdivisions were tabulated.

By using the methodology described in the study, the top thirty five (35) ranking subdivisions have been identified with the highest overall rating (largest potential impact to IRL) within the geographical area in Indian River County to benefit from a centralized sewer system as follows.

Rank	Subdivision Name	Rank	Subdivision Name	Rank	Subdivision Name
1	Floravon Shores Subdivision	14	Sebastian Highlands Unit 02 Replat PG 2	24	Dales Landing Subdivision Tropic Colony Subdivision
2	Sebastian Highlands Unit 02 Collier	14	Hobart Landing Unit 3	24	<del>Amos (A of E)**</del>
3	Sebastian Highlands Unit 05	16	River Shores Estates Units 1-4	29	Winter Grove Subdivision
4	Hobart Landing Unit 2	17	Pine Tree Park Units 1-4	29	Kanawah Acres
5	Orchid Island No. 2	17	Indian River Heights Units 1-9	31	Tropic Colony Subdivision
5	Sebastian Highlands Unit 04	17	Sebastian Highlands Unit 02 Replat PG 3	32	Halleluiah Acres
7	Orchid Island No. 1	20	Rain Tree Corner Subdivision	33	Little Portion Subdivision Replat OF
8	Sebastian Highlands Unit 01	21	Diana Park Subdivision	34	<i>Sebastian Highlands Unit 02 Replat PG 4*</i>
8	Ambersand Beach Sub No 1 & 2	22	Verona Estates Subdivision	35	<i>Heritage Trace at Hobart*</i>
10	Sebastian Highlands Unit 03	22	Sebastian Highlands Unit 13; Little Portion Subdivision Replat Of		
11	Sebastian Highlands Unit 02	24	Hobart Landing Unit 1		
11	Naranja TR Shellmound Bch Replat of POR	24	Hallmark Ocean Subdivision		
13	Orchid Isle Estates Subdivision	24	Stevens Park Unit 1 & 2		

\* These communities are included in the evaluation due to their proximity to one or more top 30 ranked communities.

\*\* It is recommended that the Amos subdivision not be considered in the capital improvement program. Ranking results are due to an anomaly in the methodology.

**FUNDING:**

There is no funding required for the report delivery. On October 18, 2016, the BCC approved Work Order No. 2 for Schulke, Bittle & Stoddard, funded from the Utilities Capital Fund in the amount of \$86,300. Capital fund revenues are generated from impact fees. Furthermore, new growth has created the need for the expansion or construction of the facilities, and that new growth will benefit from the expansion or construction of the facilities.

On March 7, 2017, the BCC recommended the adoption of Resolution No. 2017-021 authorizing signatory authority to the County Administrator for finalizing the agreement accepting a Technical Assistance Grant in the amount of \$35,000 from the Department of Economic Opportunity (DEO). This grant reduced the amount funded from the Utilities Capital Fund to \$51,300.

<b>Description</b>	<b>Account Number</b>	<b>Amount</b>
Countywide Septic to Sewer	472-169000-17501	\$51,300.00
DEO Technical Assistance Grant		\$35,000.00
Total Funding for Report		\$86,300.00

**RECOMMENDATION:**

Staff recommends approval of the following

- Countywide Septic to Sewer Ranking by adopting the report prepared by Schulke, Bittle & Stoddard, LLC.
- Work with Community Development Long Range planning staff to incorporate the findings into the IRC 2030 Comprehensive Plan Chapter 3A, Sanitary Sewer Sub-Element for BCC review and approval at a later date.
- Make the report available on-line.

**ATTACHMENT(s):**

Countywide Septic to Sewer Ranking Report by Schulke, Bittle & Stoddard, LLC *(57 Pages)*