

***Martin County deserves more recognition than they have received*** for the nutrient load reductions achieved by removing 70 wastewater treatment package plants and 1,762 septic tanks.

- Estimated nitrogen load reductions from these two measures is over 580,000 lbs/year.
- As a result, biologically reactive nitrogen levels adjacent to the River have decreased.
- No additional septic-to-sewer conversions are needed to meet the BMAP Goal for nitrogen

### ***Recently reported loading from septic systems was likely overestimated***

1. Nitrogen loading is a significant problem from septic tanks located in areas underlain by fossilized coral such as the Florida Keys and karst geology such as the springs region of north and central Florida. By contrast, Martin County is not underlain by fossilized coral or karst formations, but shallow warm surficial aquifer – ideal for nitrogen reduction prior to entering surface waters.
2. Estimated nitrogen load from septic tanks reported by Harbor Branch (HBOI) for Martin County (397,958 pounds per year) was likely overestimated due to assumptions of relatively high initial loading per system and relatively low reduction during movement to the SLE.
3. FSU (2013) completed a study for FDEP that established the nitrogen reduction credits for septic-to-sewer conversion projects: **HBOI method estimates nitrogen load 3 times higher than the FSU/FDEP method.**
  - HBOI estimate of 397,958 lbs/yr may be closer to 105,000 – 121,000 lbs/yr
  - While still a significant source of biologically reactive nitrogen, it is less than Lake discharges (250,000 lbs/yr) and runoff from ag lands (300,000 lbs/yr) and non-ag lands (170,000 lbs/yr)

### ***Mandatory connections need justifiable scientific and economic basis***

#### ***If nitrogen reduction is the goal – then there are less expensive alternatives***

than mandatory septic-to-sewer connections for the entire Martin County Service Area.

- Martin County has implemented several less expensive projects, e.g., hybrid wetland treatment
- Martin County conversion study (Captec 2015) evaluated only 64% of septic systems in Service Area
  - Highly variable cost per pound of nitrogen removed
  - Over 5,000 septic systems not evaluated

#### ***If human health and safety is the goal, then studies that link detection of human biological markers to specific communities provide justifiable basis for expenditure of public and private funds***

Recent Martin County/FDEP study and HBOI study document leaking septic systems that require remediation in

- Old Palm City
- Golden Gate Estates