STORMWATER BAFFLE BOX PERFORMANCE: A CASE STUDY OF BAFFLE BOXES IN THE CITY OF TAMPA

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Tampa, similarly to other coastal metropolitan areas, is continuing to rapidly urbanize. The Tampa Metropolitan Area (TMA) has a population of 3,275,200 and has consisting increased between 1 and 3% each year since 2012. Urbanization results in the increased transformation of vegetative surfaces to impervious ones. These conditions in urban environments have caused increased volumes and flows of runoff following storm events. These increased volumes and flows have resulted in the transportation of larger quantities of contaminants (sediments, trash, oil/grease, nutrients, metal, and etc.) into natural waterways. Several best management practices (BMPs) are available to manage stormwater for both quality; this study focuses on one, baffle boxes. Baffle boxes have been a common solution to treat stormwater as they do not require additional undeveloped land for their implementation. Baffle boxes are precast structures typically made from either concrete or fiberglass with the primary function of removing suspended solids from stormwater. More recently baffles boxes are being marketed as BMPs that offer trash and nutrient removal. Baffle boxes are designed to remove suspended solids by forcing stormwater over a series baffles causing sediments to settle in the chambers below. Some baffle boxes also feature a skimmer or trash screen designed to capture larger organic waste and trash. Newer units have media within the them to aid in additional nutrient removal. This study evaluates the removal efficiency of TSS, TN, and TP across select baffle boxes within the City of Tampa.

PRESENTER BIO: Mr. Stewart is a Ph.D. student in the Civil and Environmental Engineering Department at the University of South Florida. His research focuses on broaden the understanding of the performance and functionality of stormwater sediment traps.