

Huntington Lakes Stormwater Park Monitoring Project Addendum: Load Removal Estimation for ROCK-24 (Huntington Lakes 2)

The Huntington Lakes Stormwater Park (HLSP) monitoring was completed in September 30th, 2017 and the final report produced in November 2017 provided percentage removal efficiencies based on 7-10 stormwater events. These removal efficiencies included reductions in the concentrations of several heavy metals, total suspended solids, and nutrients. Estimated reductions in total loads are obtained by applying the measured percentage removal from the monitoring program to the input baseloads for the HLSP. The drainage basin being treated by the project includes about 140 acres, 40 acres are the wet detention itself and 100 acres of highly developed watershed. The wet detention itself used to be assigned a loading in PLSM, but it is now mostly covered by water, and should be assigned a 0 load. To account for the change in land use, we included a 100% removal efficiency for the area currently occupied by the wet detention system.

To accurately predict baseloads for the treated drainage area, the PLSM model was run with custom inputs for the City of Rockledge (land use, treatment areas, average local rainfall, all previously approved by the FDEP) for the two drainage basins. Figure 1 provides a schematic of the steps required to run an updated PLSM model for the two basins of interest.

Table 1 provides the specific input volumes (in m³/yr) and nutrient loads (in lbs/year) coming into the treatment area. A total of 133 lbs. of TN and 19 lbs. of TP were baseload for the basin currently occupied by the wet detention system. Due to the conversion of this area to wet detention (water), 100% removal of the original PLSM was applied. The treated basin includes an additional 101 acres and is associated with a baseload of 662 lbs. of TN and 88 lbs. of TP, based on the updated PLSM run. Applying the measured percentage removals of the BMP for TN and TP (69.81% and 95.61%, respectively for the Treatment Basin and 100% for the wet pond itself), we obtained the following nutrient removal data:

- **595 pounds removed of TN annually**
- **103 pounds removed of TP annually**

Table 1 includes both the input and output loads for the HLSP BMP for your reference.

Rockledge PLSM: Updated Input Version

February 2015

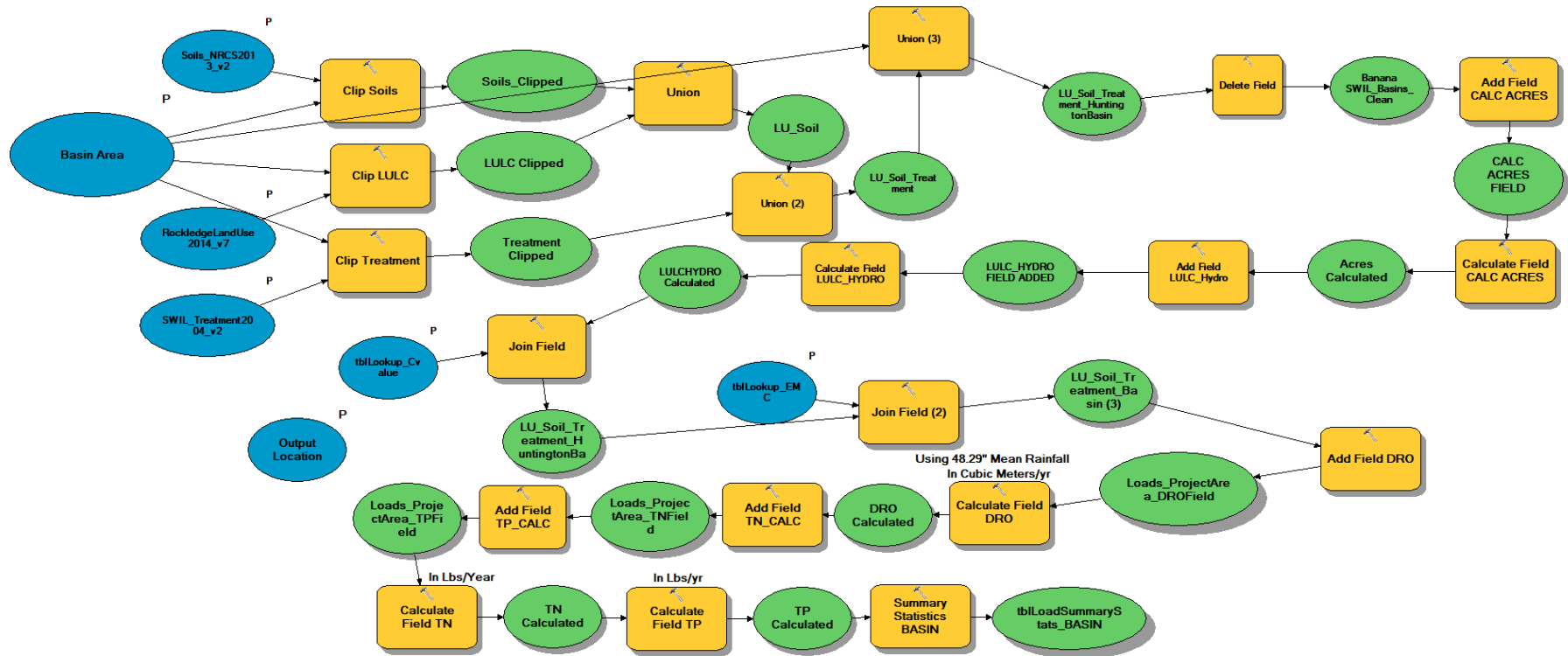


Figure 1. Schematic of the Custom PLSM for the City of Rockledge

Table 1. Input volumes and loads for the HLSP and estimate load removals based on onsite measure percentage removal efficiencies.

Basin	Description	Area (in acres)	Input Data			Nutrient Load Removal		Comments
			Total Volume (m3/year)	TN (lbs/yr)	TP (lbs/yr)	TN (lbs/yr)	TP (lbs/yr)	
2ASub	Treatment Basin	100.73	177,827	662.09	88.07	462.21	84.20	Based on measured field data (69.81% load reduction for TN and 95.61% for TP)
2B	Treatment (wet pond)	39.64	78,094	132.85	19.19	132.85	19.19	The basin is now a wet pond, water should not be associated with loading. 100% Credit
Total Huntington 2 Basin		140.37	255,921	794.95	107.26	595.06	103.38	