

# Lakeside Ranch Stormwater Treatment Area



<b>Location:</b>	<b>Martin County</b>
<b>Subwatershed:</b>	<b>Taylor Creek/Nubbin Slough</b>
<b>Basin:</b>	<b>S-191 and S-135</b>
<b>Purpose:</b>	<b>Capture and reduce the amount of total phosphorus from the S-191 and S-135 basins prior to discharge back into the L-47 rim canal and eventually into Lake Okeechobee.</b>
<b>Project Operation Start:</b>	<p>Phase I construction started in June 2008 and was completed in July 2012. Flow-through operation in Cell 2 was initiated the first week of July 2013. Flow-through operation in Cell 1 was initiated during the second week of July 2013. Flow-through in Cell 3 was initiated on July 28, 2014.</p> <p>Phase II completed construction in November 2018 and is currently undergoing Start-up monitoring in preparation for Operations.</p>
<b>Considerations/Update:</b>	<ul style="list-style-type: none"><li>▪ The Lakeside Ranch STA Project consists of eight treatment cells (three cells within Phase I and five cells within Phase II) generally flowing from north to south, with a centrally located Preservation Area. Phases I and II combined are projected to remove up to 19 metric tons (mt) of TP annually from the S-191 and portions of the S-135 sub-basins.</li><li>▪ The final updated design of the S-191A pump station (Phase 3) was completed in May 2018, with construction commencing in October 2018 and completion expected in April 2021.</li><li>▪ Maintenance of the vegetative communities in Phase I continues to present a challenge. In addition to reduced water levels, wildlife interactions have negatively impacted vegetation enhancement activities, particularly the establishment of desirable plant species. Heavy caterpillar populations coupled with hog damage have deteriorated the conditions within the cells. Fish kills from the decreasing water levels have also resulted in an increase in avian activity adjacent to the outflow sampling stations. The increase in wildlife disturbances and the significant loss in vegetation has most likely contributed to the recent poor performance in the STA.</li></ul>

PHASE I				
Parameter	2011 LOWCP Update	Designed <sup>1</sup>	Built/Observed <sup>2</sup>	Comments
Treatment Area (acres)	919	919	919	
Annual TP removal	10.0	10.0**	7.0 (2013- 2018)	The anticipated average TP reduction was estimated during the design phase.
Avg Annual Inflow (ac-ft)	NA	8,674	15,756 (2013-2018)	
TP FWMC (µg/L)	NA	492	236 (2013-2018)	
Project Cost	\$31 M <sup>1</sup>	NA	Land purchase: \$4.8M Design: \$14.656M Construction: \$26.45M	
Average Annual Cost (O&M) <sup>3</sup>	\$311,800	NA	\$123,000	

PHASE II				
Parameter	2011 LOWCP Update	Designed <sup>1</sup>	Built/Observed <sup>2</sup>	Comments
Treatment Area (acres)	NA	788	788	
Annual TP removal (mt/yr)	9.0	9.0**	TBD	Flow-through has not been imitated.
Avg Annual Inflow (ac-ft)	NA	*	TBD	
TP FWMC (µg/L)	NA	*	TBD	
Project Cost	\$49.8 M <sup>1</sup>	NA	Land purchase: \$4.12M Design: \$2.69M Construction: \$40.37M	
Average Annual Cost (O&M) <sup>3</sup>	\$310,399	NA	TBD	

Notes:

NA - Not available

\* - Not determined

\*\*- **Assumptions leading to benefit estimate:** Most likely estimate assumes BMPs in place. Period of record: 1965-2005. Inflow concentration: 345 ppb without BMPs, 122 ppb with BMPs. Considering various discharge concentrations for different flow rates and hydraulic residence times, the project can provide an average annual load reduction of approximately 19 MT/yr.

<sup>1</sup> NEED Design Report reference here.

<sup>2</sup> Data collected from 2013 through 2018

<sup>3</sup> Only SFWMD costs are provided