	WEST LAKE OKEECHO	OBEE SUBWATERSHED TECH	INICAL SHEET								
Subwatershed:	West Lake Okeechobee										
Basins:	East Caloosahatchee Nicodemus Slough South	Flow Issues <sup>1</sup> : No	Water Quality Issues <sup>2</sup> :	No							
Monitored Stru	cture(s) <sup>1</sup> :	C5A, S77	C5A, S77								
Inflow loads <sup>1</sup> :		Lake Okechobee, S4/Industr Basin, and L1 Borrow Canal	Lake Okechobee, S4/Industrial Canal Basin, West Caloosahatchee Basin, and L1 Borrow Canal								
Acreage:		204,094									
Percentage of S	ubwatershed Acreage:	N/A									
Percentage of L	ake Okeechobee Watershed:	5.9%									

## <sup>1</sup>Flow Issues:

- The analyses of water quality and flow data presented in this Technical Sheet only represent discharges to Lake Okeechobee at structure S77. Structure S78 is also a Basin outflow and is monitored; however, it discharges to the Caloosahatchee River and Estuary Watershed, thus was not included. There are other basin interconnections that are not monitored.

- Based on the limited discharge volume to Lake Okeechobee from this Subwatershed (1.8% during the post-protection plan period), this subwatershed is a relatively lower priority for future projects from the Lake Okeechobee Restoration perspective.

- The flow data at C5A need additional investigation to ensure that the upstream/downstream stage readings were not reversed during a certain time period. Also, since 2014 sampling has been suspended due to construction activity at C5A.

- There were no statistically significant trends for flows.

## <sup>2</sup>Water Quality Issues:

- This subwatershed is a relatively lower priority for water quality projects from the Lake Okeechobee Protection Plan perspective as it contributes a relatively small percentage of the load to the lake (1.4% during the post-protection plan period) and has a relatively low total phosphorus flow weighted mean concentrations (138 µg/L during the post-protection plan period).

- There were no statistically significant trends for water quality.

## **Pre-Protection Plan Flows**



## Post-Protection Plan Flows

CII.0/0

L12.4%

#### **Pre-Protection Plan Loads**

36.2%



## **Post-Protection Plan Loads**

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# WEST LAKE OKEECHOBEE SUBWATERSHED - MAP



Note: S4/industrial Canal is presented but not within the West Lake Okeechobee Subwatershed

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# **WEST LAKE OKEECHOBEE SUBWATERSHED - STATISTICS**

Summary Statistics													
	Period of Record	Pre-Protection Plan	Post-Protection Plan										
	WY1991-WY2018	WY1991-WY2004	WY2005-WY2018										
Averages													
Avg. Flow (acft/yr)	25,656	8,675	42,638										
Avg. Load (mt/yr)	4.42	1.56	7.28										
FWMC (ug/L)	140	146	138										
Avg. UAL (Ibs/acre/yr)	0.06	0.02	0.10										
Medians				Mann-Whitney Results p-values <sup>3</sup>									
Median Flow (acft/yr)	355	91	6,032	0.1051									
Median Load (mt/yr)	0.04	0.01	0.82	0.0867									
Median FWMC (ug/L)	95	77	146	0.0899									
Median UAL (lbs/acre/yr)	0.00	0.00	0.02	0.0869									
(1) Some for the second sec	and at an effective second												

Highlighted cells indicate statistical significance

<sup>3</sup>The Mann-Whitney test is a non-parametric test alternative to the two sample t-test. It is used to test the equality around the central tendency of two data sets (pre-protection plan period and post-protection plan period). A p-value of less than 0.05 indicates that a significant difference between pre-protection plan period and post-protection plan period exists. A comparison of the median values identifies which period is higher. A median is a value at the mid-point of a distribution of observed data.

#### Sub-watershed West - Seasonal Kendall τ Results for Total Monthly Flow (ac-ft) by Basin over Three Water Year Ranges

			1991-201	8				1991- <b>200</b>	4		2005-2018					
Sub-watershed/Basin	% Missing Months	Kendall's τ	Sen Slope	Intercept	p-value	% Missing Months	Kendall's τ	Sen Slope	Intercept	p-value	% Missing Months	Kendall's τ	Sen Slope	Intercept	p-value	
West	0.0%	0.119	0	0	0.190	0.0%	0.061	0	0	0.443	0.0%	-0.247	0	0	0.124	

### Sub-watershed West - Seasonal Kendall τ Results for Total Monthly P Load (kg) by Basin over Three Water Year Ranges

······································																
		1	1991-201	8			1	1991-2004	1		2005-2018					
Sub-watershed/Basin	% Missing Months	Kendall's τ	Sen Slope	Intercept	p-value	% Missing Months	Kendall's τ	Sen Slope	Intercept	p-value	% Missing Months	Kendall's τ	Sen Slope	Intercept	p-value	
West	0.0%	0.119	0.00	0	0.193	0.0%	0.061	0.00	0	0.443	0.0%	-0.260	0.00	0	0.105	

Sub-watershed West - Seasonal Kendall τ Results for Monthly FWM TP (μg/L) by Basin over Three Water Year Ranges																
		:	1991- <b>20</b> 1	8				1991-200	4		2005-2018					
Sub-watershed/Basin	% Missing Months	Kendall's τ	Sen Slope	Intercept	p-value	% Missing Months	Kendall's τ	Sen Slope	Intercept	p-value	% Missing Months	Kendall's τ	Sen Slope	Intercept	p-value	
West	66.4%	0.042	0	87	0.714	79.8%	-0.233	0	77	0.345	53.0%	-0.173	-6	140	0.216	

### Italic red font cells indicate statistical significance

Note: The Seasonal Kendall Tau analyzes data for monotonic trends (consistent upward or downward trend) and accounts for seasonality. Typically monthly data are used to identify seasons. Probability values (p-values) are derived from the tau-statistic which identifies the direction of the trend. A p-value less than 0.05 detects statistically significant trends for a period of interest. The Sen Slope provides an indication of the magnitude of the observed trend.

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# WEST LAKE OKEECHOBEE SUBWATERSHED - MONTHLY DATA AND SKT TRENDS









