

**2020**

**MIRROR LAKE  
LAKE MANAGEMENT PLAN**

Annual Meeting

- Agenda

Lake Management Plan

- General Provisions & Scope of Services
- Community-Based Activities & Events
- Current Fiscal Year
  - Planned Treatments &, Funding
- Next Fiscal Year
  - Projected Treatments & Funding
- Exhibits
  - Agenda & Notes (Prior Year)
  - Financial Summary
  - Historic Reports/Data
  - Roles & Responsibilities

# MIRROR LAKE: ANNUAL MEETING

Date // Location	Tuesday, March 3, 2020 /1:15pm - 2:05pm/ 200 W. County Home Rd – LMP Office
Community Liaisons	Lorene Deviese, Debbie Roberts, Wanda Basil
Liaisons Present	Debbie Roberts, Wanda Basil, Kyle Bateh, Jonathan Denton
Seminole County	Thomas Calhoun, Tony Cintron, Joey Cordell, Gloria Eby, Kathy Moore

## General Topics & Updates

### Lake Management Program

- Welcome

### MSBU Program & Resource Management Department

- Financial Summary [Refer to Exhibit B]
- BCC Resolution - MSBU Program Administrative Fee – 7% of Budgeted Assessment Revenue
- County Service Cost (WMDiv) allocation for “enhanced” service level cost
- Status Update - Administrative Code [22.10] and Consolidated Ordinance development

### Lake Management Program

- Shoreline Protection Ordinance Status
  - FWC Rule change removes permit requirements on lakes smaller than 160 acres
  - Currently drafting County Shoreline Ordinance
- Lake Status Nutrients/Habitat Scores [Bioassessment Indices - Refer to Exhibit C]
  - LVI remains in Healthy category
    - Increasing score means native vegetation getting better (partially from all the lake restoration plantings and hydrilla management)
  - LVI/BioBase data on Watershed Atlas website:  
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7616&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
  - Monitor hydrilla and treat as necessary (early detection-rapid response)
    - Less hydrilla helps increase LVI score
  - Evaluate grass carp fish effects and adjust stocking rate as necessary
    - Planning to stock grass carp because there is still hydrilla, carp eat less as they age
  - Monitor access corridors and lily pads and treat as necessary
    - Eelgrass is native and came in after hydrilla treatment, it helps the water quality
    - Noticed Illinois pondweed along shoreline, it is a beneficial native we will monitor
- General recommendations for lake-community [Refer to Lake Management Plan]
  - Increase native aquatic plantings in areas devoid of vegetation
    - Possible area near clubhouse, will meet with Courtland on-site to discuss lake improvements
  - Promote “welcome packages” to new lakefront homeowners
    - Not a lot of turnover
  - Lakewatch samples - no data since 2006
    - Debbie’s neighbor is interested (Holly Wild)
- 2020 Shoreline Planting Event- dates available
  - To be coordinated via Thomas Calhoun
- Other
  - Email Address for routine communications and important announcements
    - Remove John Culmer and Krystin Strong; add Wanda Basil as liaison in place of Krystin
  - Nutrient abatement
    - Baffle box possibly one day through CIP for south pipes
  - Harvesting discussed

# MIRROR LAKE LAKE MANAGEMENT PLAN

## **GENERAL PROVISIONS**

### **Scope of Public Aquatic Weed/Plant Control [AWC] Services**

The scope of public aquatic weed control [AWC] services funded by non-ad-valorem assessment includes those services associated with managing aquatic plant communities as deemed beneficial and/or critical to restoring, developing and/or maintaining conditions that enhance the water quality and over-all health of the waterbody; with emphasis on providing public services for public purposes which by definition of public are limited to the waterbody and respective shoreline when/where noxious and/or invasive exotic vegetation could/would threaten or impede the waterbody.

### **Governing documents**

- Seminole County Ordinance 06-74
- FWC permit

### **Methods for Aquatic Weed Control as authorized via County Ordinance/Resolution**

- Chemical (herbicides)
- Biological (sterile triploid grass carp fish [TGC])
- Mechanical (harvester)

### **Targeted Invasive/Exotic Aquatic Vegetation**

- Hydrilla, water hyacinth, torpedo grass, primrose willow, water lily (greater than 4ft water depth), wild taro, cattail, Cuban bulrush, bladderwort, and salvinia. Keeping south lobe access corridors open as per FWC permit.

### **Frequency of AWC Treatment**

AWC services are performed at the direction of the Seminole County LMP as per the Mirror Lake Management Plan reviewed at the annual planning session with the expectation that the Seminole County LMP may alter anticipated treatments as merited basis per changing/evolving conditions noted during site inspections.

### **Herbicide Treatments - Service Provider**

- As determined by Seminole County

### **Funding**

Financial management of the MSBU fund is provided by the Seminole County MSBU Program. Financial plans developed by the MSBU Program include eligible expense funding requests submitted by the Lake Management Program and other cost and revenue components typical to MSBU funds. Financial information inclusive of prior year actual outcome, current year working budget and next year budget proposal data is reported annually. Assessment levy is subject to Board approval and the standard procedures associated with non-ad valorem assessment. The financial plans may be adjusted by the County as merited per changing/evolving essential services as directed by the County and per financial planning considerations. The annual assessment is capped at \$250.00.

### **Lake Liaisons**

Property owners (or their designated representatives) provide community representation at annual planning sessions with the County and serve voluntarily as the key point of contact for community inquiries and concerns. The liaisons for Mirror Lake are: Lorene Deviese ([lfdeviese@hotmail.com](mailto:lfdeviese@hotmail.com)), Debbie Roberts ([troberts3296@cfl.rr.com](mailto:troberts3296@cfl.rr.com)), and Wanda Basil ([Wanda.Basil@cortland.com](mailto:Wanda.Basil@cortland.com))

## **COMMUNITY-BASED ACTIVITIES & EVENTS**

LMP recommends/encourages homeowners to coordinate a resident-based volunteer event involving native plantings along the shoreline of Mirror Lake. The intention of such an event is to plant beneficial native aquatic plants to key areas in need along the bank. It is especially important that as the aquatic invasive plants (such as torpedo grass) are being treated, native aquatic plants should be established within these areas. The presence of the recommended native plant species along the shoreline provides habitat for fish and wildlife, helps impede invasive exotics from re-establishing, and reduces erosion of the shoreline. All of these best management practices are essential to providing the conditions that promote an environmentally stable habitat to be enjoyed by generations to come. The key to success is dependent on strong participation of the Mirror Lake community. Continued recommendations for community initiatives are as follows:

- 1) Work together or establish a lake association, with other lakefront owners to increase native aquatic plantings along shoreline (such as pickerelweed, canna, and duck potato). Have at least one annual lake association meeting to discuss lake specific issues.
- 2) Consider funding street sweeping services during peak leaf fall to ensure this debris does not wind up in your waterways. Leaf debris contains phosphorous and nitrogen that can impact your lake.
- 3) Take advantage of free educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and presentations on decreasing “pointless personal pollution” by reducing fertilizer use and only using phosphorous-free and slow-releasing nitrogen based fertilizers. Contact Seminole County Lake Management Program (407) 665-5542 to inquire about the availability of these programs. You can also visit the Water Atlas online to read interesting information about your specific waterbody, and the LMP website to watch educational videos and download lake management pamphlets:

Water Atlas: <http://www.seminole.wateratlas.usf.edu/>

LMP: <http://www.seminolecountyfl.gov/pw/roadstorm/wqlakemgt.aspx>

- 4) Share what YOU know with your neighbors! Encourage fellow residents to keep a functional shoreline with beneficial native aquatic plants, and to keep grass clippings out of the storm drains that lead to the lake. All of these activities aid in protecting your waterbody! Please share newsletter with any new residents or those not currently on our email list.

***Important to Note:** When herbicides are applied along the shoreline to invasive plants (such as torpedo grass), overspray onto adjacent desirable vegetation may occur. In order to avoid damage to desired vegetation, manual (by hand) removal (by property owner) of the undesirable species from among the desirable species along the shoreline is advised. If the invasive plants are removed by this method, spraying the area can be reduced, thereby offering greater protection to the desirable species. The physical removal of dead/decaying aquatic plant material will reduce the volume of decomposing vegetation on the lake bottom (muck layer) and will increase the success of the efforts to limit the re-growth of the invasive plants. The presence of submerged aquatic vegetation (“SAV” such as hydrilla) should be communicated to your lake liaison for their reporting to the County so appropriate treatment of SAV can be provided.*

## **COUNTY SERVICES – Lake Management & Supplemental Programs**

Mirror Lake is monitored by LMP to assess aquatic plant growth. LMP provides continued evaluation of the aquatic plant species, such as hydrilla, and provides community updates on the status of treatments and waterbody bioassessment. In addition, LMP offers free aquatic plant material (as available) for sponsored restoration events and local community volunteers coordinated through the county’s Seminole Education and Restoration Volunteer (SERV) Program. While the MSBU assessment includes a nominal charge for administering the MSBU, the amount charged does not cover all expenses incurred by the County on behalf of waterfront property owners. Many of the services provided by the LMP are made available to support community riparian stewardship without additional charges being assigned to the MSBU budget.

## **CURRENT FISCAL YEAR – Planned Treatment & Funding**

### **Primary Aquatic Plant Management Expectations**

Hydrilla growth in Mirror Lake has the likelihood to continue, however, the timing and extent of hydrilla re-growth is affected by multiple natural and environmental factors that cannot be controlled or predicted with certainty. While extensive growth of hydrilla is possible at any point in time; it is anticipated that routine spot treatments of hydrilla with herbicides and continuous biological control pressures from the triploid grass carp fish will be sufficient to manage hydrilla re-growth during the current fiscal year. The anticipation of spot treatments for the current fiscal year takes into consideration the historic trend of hydrilla management required at Mirror Lake, as well as current conditions observed at the lake. As with any lake with a history of hydrilla infestation, long-term planning to include financial preparation for whole lake treatment is advised.

Primary expectations are as follows:

- 1) Aquatic herbicide maintenance for non-native vegetation and conducting hydrilla treatments (as needed)
- 2) Aquatic vegetation maintenance for corridors in south lobe
- 3) Reduce biomass of lilies in depths greater than 4ft
- 4) Monitor hydrilla, other submersed aquatic plants, and grass carp fish effects
- 5) Future grass carp stockings if deemed necessary, pending permit amendment

### **Funding Expectations**

*Refer to current fiscal year data provided in Exhibit B.*

## **NEXT FISCAL YEAR – Projected Treatment & Funding**

### **Primary Aquatic Plant Management Expectations**

The projected treatment plans for the next fiscal year remain consistent with the plans and expectations noted for the current fiscal year. Primary expectations are as follows:

- 1) Continued aquatic herbicide maintenance for non-native vegetation and conducting hydrilla treatments (as needed),
- 2) Aquatic vegetation maintenance for two 20ft corridors,
- 3) Reduce biomass of lilies in depths greater than 4ft,
- 4) Continued monitoring of hydrilla, other submersed aquatic plants, and grass carp fish effects,
- 5) Future grass carp stockings if deemed necessary, pending permit amendment.

### **Funding Expectations**

*Refer to next fiscal year data provided in Exhibit B.*

### **Exhibits**

**A** – Agenda & Notes (Prior Year Meeting)

**B** – Financial Summary

**C** – Historic Reports/Data

**D** – Roles & Responsibilities

## Exhibit A – Agenda & Notes (Prior Year Meeting)

Date/Time/ Location	: February 22, 2019 1:30pm-2:00pm 200 W. County Home Rd – LMP Office
Community Liaisons	: John Culmer, Lorene Deviese, Debbie Roberts, Krystin Strong (Barrington Apts), and Allison Sera
Liaisons Present	: Debbie Roberts
Seminole County	: Thomas Calhoun, Joey Cordell, and Joe Saucer

### General Topics & Updates

#### Lake Management Program

- Welcome
- Fertilizer Ordinance- Passed on February 27, 2017 [www.seminolecountyfl.gov/fertilizer](http://www.seminolecountyfl.gov/fertilizer)
  - Restricted Months: no fertilizing June 1<sup>st</sup>- September 30<sup>th</sup>
  - Slow Release Nitrogen: at least 50%
  - Know How Much: [www.seminolecountyfl.gov/calculator](http://www.seminolecountyfl.gov/calculator)
  - Buffer Zone: 15 feet from all waterbodies
- Shoreline Protection Ordinance Status
  - FWC Rule change removes permit requirements on lakes smaller than 160 acres
    - Current permit will expire in 2021
  - Currently drafting County Shoreline Ordinance
    - LMP will update liaisons with draft and public hearing information, solicit input
- Lake Status Nutrients/Habitat Scores [Bioassessment Indices - Refer to Exhibit C]
  - Post hurricane effect
  - LVI remains in Healthy category
  - LVI/BioBase data on Watershed Atlas website:  
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7616&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
  - Monitor hydrilla and treat as necessary (early detection-rapid response)
  - Evaluate grass carp fish effects and adjust stocking rate as necessary
    - Carp stocked in 2017
  - Monitor access corridors and lily pads and treat as necessary
    - Achieved control of banana lilies in the summer due to new product
  - Tussock removal in south and north lobe (new quote)
    - To be completed in February 2019
- General recommendations for lake-community [Refer to Lake Management Plan]
  - Increase native aquatic plantings in areas devoid of vegetation
  - Promote “welcome packages” to new lakefront homeowners
    - Debbie distributed fertilizer ordinance info and welcome packets at community meeting
  - Lakewatch samples - no data since 2006
    - Allison Sera possibly to provide sampling; Water Quality will contact for training
- 2019 Shoreline Planting Event- dates available
  - To be coordinated via Thomas Calhoun
    - Liaison selected October 12<sup>th</sup>, 2019
- Other
  - Email Address for routine communications and important announcements
    - Liaison will try to hold community meeting in April 2019

#### MSBU Program

- Financial Status [Refer to Exhibit B]

MSBU FUND: MIRROR (LAKE)

	Tax Year	2018	2019	2020
	Assessment	\$ 200	\$ 175	\$ 175
	Fiscal Year	FY18-19	FY19-20	FY20-21
<b>Revenue</b>		<b>Actual</b>	<b>Working</b>	<b>Proposed</b>
Beginning Fund Balance	\$	59,805	\$ 63,970	\$ 66,707
Assessment Revenue	\$	10,419	\$ 9,072	\$ 9,072
Other (Interest)	\$	1,423	\$ 900	\$ 900
Other	\$	-	\$ -	\$ -
<b>TOTAL Revenue</b>	<b>\$</b>	<b>71,647</b>	<b>\$ 73,942</b>	<b>\$ 76,679</b>
<b>Expenditure &amp; Reserves</b>		<b>Actual</b>	<b>Working</b>	<b>Proposed</b>
Application Fee Recoupment	\$	-	\$ -	\$ -
MSBU Program Administrative Fee [7% Rev FY20-21]	\$	1,235	\$ 1,235	\$ 635
Other County Services (Service Entity)	\$	-	\$ -	\$ -
Fund Advance Repayment	\$	-	\$ -	\$ -
Contracted Services	\$	6,442	\$ 6,000	\$ 11,400
<i>AWC Services (via AAM)</i>	\$	1,900	\$ 6,000	\$ 6,000
<i>Chemicals (Non-AAM)</i>	\$	-	\$ -	\$ -
<i>FAS/GEN Testing</i>	\$	-	\$ -	\$ -
<i>Shipping (Test Samples)</i>	\$	-	\$ -	\$ -
<i>TGC Fish</i>	\$	-	\$ -	\$ 400
<i>Fish Barrier Inspection/Minor Repair</i>	\$	-	\$ -	\$ -
<i>Fish Barrier Replace/Major Repair</i>	\$	-	\$ -	\$ -
<i>Nutrient Abatement (Product) - pending BCC approval</i>	\$	-	\$ -	\$ -
<i>Nutrient Abatement (Prof. Services) - pending BCC approval</i>	\$	-	\$ -	\$ -
<i>Harvesting (and/or Cattails/Eelgrass)</i>	\$	4,542	\$ -	\$ 5,000
<i>Other</i>	\$	-	\$ -	\$ -
<b>Reserve/Contingency<sup>1</sup></b>	<b>\$</b>	<b>63,970</b>	<b>\$ 66,707</b>	<b>\$ 64,644</b>
<i>Operating Contingency</i>	\$	5,970	\$ 3,707	\$ 1,644
<i>Reserve: Hydrilla (Whole Lake)</i>	\$	8,000	\$ 8,000	\$ 8,000
<i>Reserve: Other</i>	\$	50,000	\$ 55,000	\$ 55,000
<b>TOTAL Expenditures &amp; Reserves</b>	<b>\$</b>	<b>71,647</b>	<b>\$ 73,942</b>	<b>\$ 76,679</b>
LM Program Enhanced Services Cost		Pending development & confirmation		

<sup>1</sup> Note: These funds are secured (1) for maintaining rate stability as annual cost are known to fluctuate, (2) in preparation of planned or anticipated future expenses, (3) to provide response to emergency and/or urgent needs for which planning was not feasible. These funds are not intended for expenditures that could be planned and included in annual budget planning processes.



## **Reserve/Contingency Funds**

The financial summary [Exhibit B] of the Annual Report was updated in 2019 to include additional information about contingency fund status. The MSBU Program has provided this additional information to improve transparency respective to the reason and intended purpose for these funds.

The primary purpose for establishing operating contingency funding is twofold – (1) To have funding on hand to accommodate unexpected essential aquatic weed control emergencies that cannot be reasonably foreseen, planned or identified in routine budget planning & forecasting and (2) To provide rate stability as costs for ongoing services often vary from year to year. By establishing contingency and reserve funds, such funding may be allocated temporarily from these funds to operating expenditures to avoid periodic spikes in assessment.

Contingency funds are developed by financial management planning decisions and by default when actual expenditures are less than budgeted expenses. Although reserve/contingency funds are not expected to be expended in any given year, these values are included under expenditures because they are “on hold” for future needs and are classified by accounting practices as expenditures.

In the financial summary (Exhibit B) the total dollars in reserve/contingency are identified in the expenditure section on a single line (darker shading). The total dollars in contingency are calculated by subtracting the other expenditures (typically “contracted services” and “administrative fee”) from the total revenue. Contingency funds may be used as deemed essential to meeting emergency needs of the waterbody; however, the overall intention of use is as per the noted sub-categories.

When a negative value is displayed in the sub-category labeled “operating contingency”, it is an indication that the other subcategories reflect targeted sub-category values that have not been fully developed. For the other sub-categories to be fully developed, the “operating contingency” sub-category must be zero or a positive value.

The sub-category labeled “Reserve: Other” is included for improved transparency as use of these funds is on hold for purposes that are subject to Board confirmation and subsequent evaluation of ordinance provisions (potentially ordinance amendment) before these funds can be budgeted and utilized for the proposed purposes.

## Exhibit C - Historic Reports/Data

Additional information for Mirror Lake can be found on the Seminole County Water Atlas website at:

<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7616&wbodyatlas=lake>  
<http://www.seminole.wateratlas.usf.edu/resourceprogram.aspx?aid=15&wbodyid=7616>

### **Mirror Lake Water Quality Report: How Does My Lake Rank?    TSI SCORE: 48 GOOD**

The Trophic State Index (TSI) is a classification system designed to "rate" individual lakes, ponds and reservoirs based on the amount of biological productivity occurring in the water. Using the index, one can gain a quick idea about how productive a lake is by its assigned TSI number. A "Good" quality lake is one that meets all lake use criteria (swimmable, fishable, and supports healthy habitat).

The two graphs below indicates nutrient levels (measured by TSI and/or Total Phosphorous [TP]) for your lake. A TSI score of 60 or above is considered impaired (or polluted) lake. Continued reduction of TP sources (personal pollution, run-off, landscaping practices, shoreline erosion) can help reduce phosphorous in your lake that is abundantly available, potentially creating algae blooms.

### **Lake Vegetation Index Bioassessment (LVI): How Does My Lake Rank?    57 Healthy**

The Lake Vegetation Index is a rapid bioassessment tool created by the Florida Department of Environmental Protection (FDEP) to assess the biological condition of aquatic plant communities in Florida lakes. The most recent LVI bioassessment for Mirror Lake (sampled on September 17, 2019) scored a **57** which is in the **Healthy** category. This is an increase from the previous score of **53, Healthy**.

Aquatic Life Use Category	LVI Range	Description
Category 1 "exceptional"	78–100	Nearly every macrophyte present is a species native to Florida, invasive taxa typically not found. About 30% of taxa present are identified as sensitive to disturbance and most taxa have C of C values >5.
Category 2 "healthy"	43–77	About 85% of macrophyte taxa are native to Florida; invasive taxa present. Sensitive taxa have declined to about 15% and C of C values average about 5.
Category 3 "impaired"	0–42	About 70% of macrophyte taxa are native to Florida. Invasive taxa may represent up to 1/3 of total taxa. Less than 10% of the taxa are sensitive and C of C values of most taxa are <4.



# Mirror Lake

## Trend Report

2019



**NNC**

(Numeric Nutrient Criteria)

*Pass*

GeoMean Color: 27.33

GeoMean Alkalinity: 52.12

**TSI Score: 48**

(Trophic State Index)

*Good*

**LVI Score: 57**

(Lake Vegetation Index)

*Healthy*

**MSBU:**

(Municipal Service Benefit Unit)

*Yes*

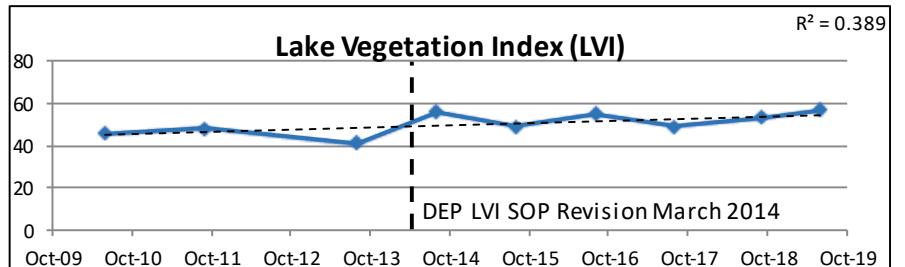
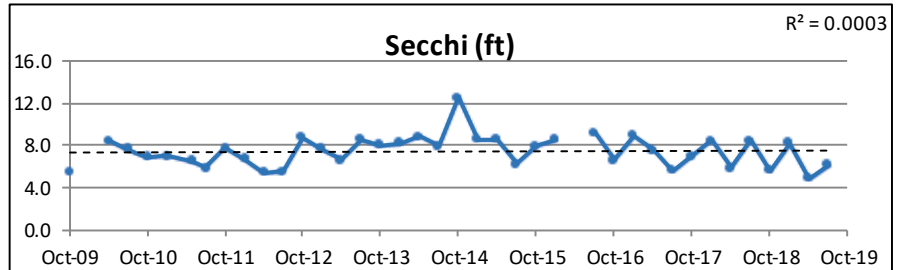
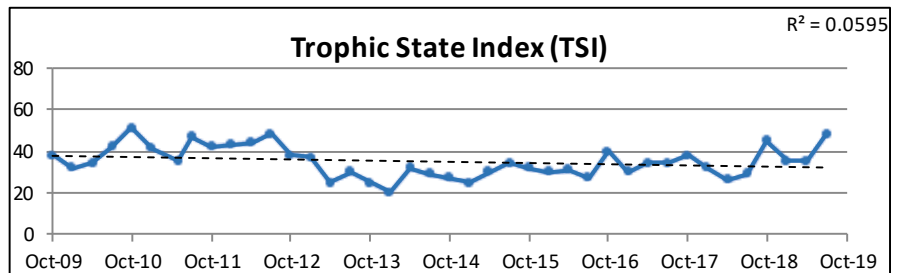
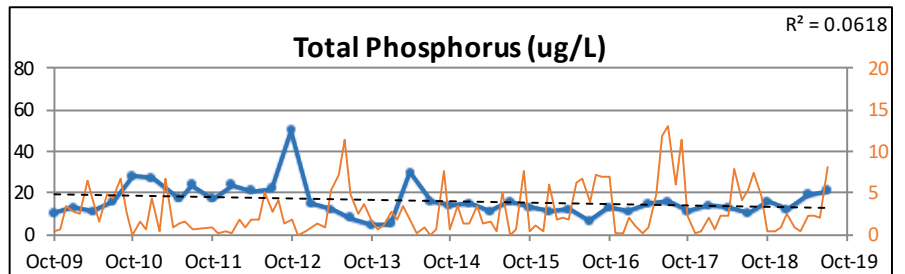
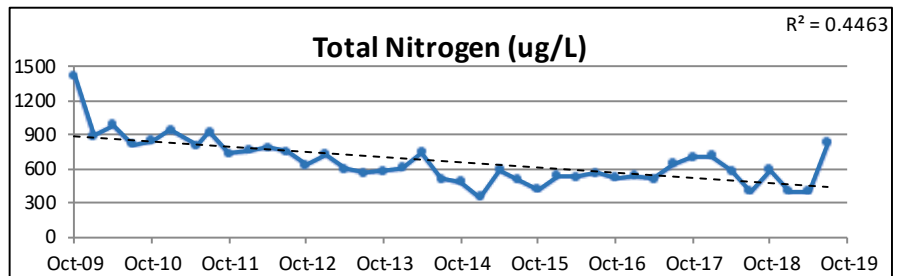
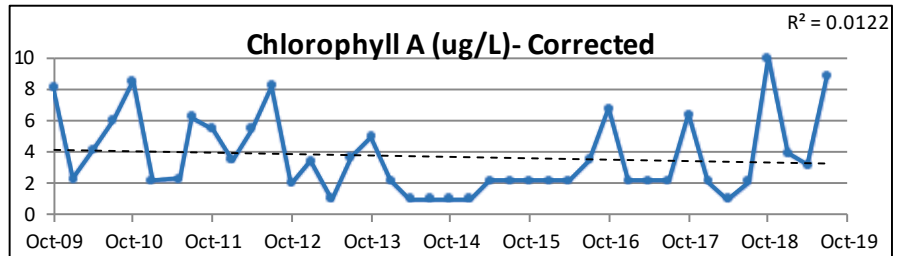
Little Wekiva Watershed

31.68 acres

Lat 28° 39' 58"

Lon 81° 26' 21"

WBID 3000 C



# Exhibit D – Roles & Responsibilities

## ROLES & RESPONSIBILITY

### General Outline

#### COUNTY

##### *Seminole County will*

- ✓ Govern the MSBU
- ✓ Provide financial management of MSBU fund and assessment levy
- ✓ Ensure activities conducted with assessment funding align with the scope of services documented in the governing ordinance
- ✓ Ensure the lake is monitored and services are appropriately rendered
- ✓ Maintain decision-making authority relative to public services and will defer to best lake management practices when making such decisions
- ✓ Provide an ongoing lake management plan based on the defined service scope, permitting, conditions at the lake, funding parameters, and best lake management practices. The Lake Management Plan will be developed and maintained by the Lake Management Program with liaison participation
- ✓ Initiate and manage service contracts, monitor results, and communicate updates on a routine basis
- ✓ Conduct annual meetings that offer opportunity for liaison discussion as to prior, current, and future action plans
- ✓ Encourage liaisons and assist with educational outreach efforts to protect the health and water quality of the waterbody

#### LIAISONS

##### *Liaisons will*

- ✓ Encourage communitywide awareness and participation relative to environmental stewardship recommendations and opportunities
- ✓ Provide communitywide communication and assist the County in the distribution of relevant lake information
- ✓ Attend annual lake management and budget planning sessions conducted by the County
- ✓ Serve as representatives of the community on lake issues; representing the respective lake community as a whole
- ✓ Monitor lake conditions and provide feedback to the County as to observations