

**2020**

**LAKE AMORY  
LAKE MANAGEMENT PLAN**

Annual Meeting

- Agenda

Lake Management Plan

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

# LAKE AMORY: ANNUAL MEETING

Date/Time/Location	: Tuesday, March 3, 2020 /1:15pm-2:55pm/ 200 W. County Home Rd – LMP office
Community Liaisons	: Dan Harger, Philip Lee, Jason Dalton, and Tim Lockhart
Liaisons Present	: Dan Harger, Jason Dalton, Tim Lockhart
Seminole County	: Lorie Bailey Brown, 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; Revised per reschedule of dredging project]
- 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
- Discussed opening up treatment opportunities for services previously discussed.

### Lake Management Program

- Shoreline Protection Ordinance Status
  - FWC Rule change removes permit requirements on lakes smaller than 160 acres
    - Lake Amory was permit exempt by FWC per under 10 acres
  - Currently drafting County Shoreline Ordinance
  - LMP will notify liaisons on any meetings or updates with Ordinance
- Lake Status Nutrients/Habitat Scores [Bioassessment Indices – Refer to Exhibit C]
  - LVI in impaired category due to decrease in sensitive and native plant types
  - LVI/BioBase data on Watershed Atlas website:
  - BioBase collection is upcoming

<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7503&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 permitted for hydrilla management, restocking currently not needed
  - Monitor bladderwort and treat as necessary
  - Continued bladderwort and coontail treatment
- 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
  - Updated packets to Tim
  - Lakewatch samples - no data since 2010; no new Lakewatch person available
- 2020 Shoreline Planting Event- dates available
  - To be coordinated via Thomas Calhoun
  - Jason to get with Thomas about dates
  - We need 2 locations possibly Dan & Jason
  - Thomas to meet with Dan to recommend where plants would be most beneficial
  - Recommended planting near golf course area and by Phil’s; maybe Cypress plantings
- Other
  - TGC fish barrier
    - Barrier under monthly maintenance

- Email Address for routine communications and important announcements
- Organic vegetation removal (\$34,032.50)
- New golf course drainage pipe spotted that drains into lake; City of Sanford says taken care
- Nutrient abatement/water quality
  - Future Alum treatment \$33K
  - Move dredging to Winter 20/21; \$34,000 will be moved to next fiscal year Gloria to email Kathy
  - Discussed how trough near cactus house dredging would be out of scope
  - Keep liaisons updated on any capital projects involving Lake Amory
  - Discussed how weir is not reason lake levels up; levels up due to rainfall
  - Community meeting & feedback discussion

# LAKE AMORY - 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 06-27

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

- Chemical (herbicides)
- Biological (sterile triploid grass carp fish [TGC])
- Mechanical (harvesting, cutting, etc.)

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

- Hydrilla, torpedo grass, primrose willow, alligator weed, wild taro, water sprite, coontail, lily pads, salvinia, barnyard grass, and dog fennel

### **Frequency of AWC Treatment**

AWC services are performed at the direction of the Seminole County LMP as per the Lake Amory Management Plan reviewed at the annual planning session with the expectation that the Seminole County LMP may alter anticipated treatments on an 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 \$300.00.

### **Lake Liaisons**

Designated 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 Lake Amory are: Dan Harger ([dgharger@genevaschool.org](mailto:dgharger@genevaschool.org)), Philip Lee ([philwriter@gmail.com](mailto:philwriter@gmail.com)), Jason Dalton ([Jason@servprowp.com](mailto:Jason@servprowp.com)) and Tim Lockhart ([tim4fsu@gmail.com](mailto:tim4fsu@gmail.com)).

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

LMP recommends/encourages homeowners to coordinate a resident-based volunteer event involving native plantings creating a beneficial shoreline for Lake Amory. The intention of such an event is to plant beneficial native aquatic plants in key areas 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 Lake Amory community.

Continued recommendations for community initiatives are as follows:

- 1) Shoreline re-vegetation with native emergent plants (by the lakefront community and potentially volunteers),
- 2) Establishing a formal Lake Association holding at least one annual meeting with topics relevant to Lake Amory,
- 3) Continue to increase educational outreach programs i.e. Shoreline Restoration Workshops (planting days), Florida Yards and Neighborhoods (FYN), Lake Management Video mail-outs, and reduction of residential pollution (use phosphorous free and slow-release nitrogen based fertilizers only). Contact Seminole County LMP, 407-665-5542, for more information and assistance,
- 4) Provide content for the Seminole County Water Atlas Lake Management Webpage for Lake Amory (such as newsletters and photos).

***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**

While the MSBU assessment includes a nominal charge for administering the MSBU, the amount charged does not cover all the expenses incurred by the County on behalf of the waterfront property owners. Lake Amory is monitored by LMP to assess the aquatic plant growth. LMP provides continued evaluation of the aquatic plant species, such as hydrilla, and provides community updates on the status of all treatments and waterbody assessments. 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. 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 Lake Amory has 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 herbicide 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 Lake Amory, as well as current conditions observed at lake. As with any lake with a history of hydrilla infestation, long-term planning to include financial preparation for whole lake treatment is advised. For emergent invasive plants, lower water levels result in backpacking for some areas of Lake Amory as defined by essential services.

### **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, access corridor maintenance, and coordinate hydrilla/coontail treatments (as needed),
- 2) Continue with the prime season monthly maintenance (avoid January/February treatments),
- 3) Future grass carp stockings if deemed necessary, pending permit amendment,
- 4) Continued monitoring of hydrilla, coontail, other submersed aquatic plants, and grass carp fish,
- 5) Maintain contingency reserve funds for extended herbicide management of hydrilla and/or other issues that may develop and require immediate treatment.

### **Funding Expectations**

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

## **Exhibits**

**A** - Agenda & Notes from Prior Year Meeting

**B** - Financial Summary

**C** - Historic Reports/Data

**D** - Roles & Responsibilities

## Exhibit A – Agenda & Notes from Prior Year Meeting

Date/Time/Location	:	March 22, 2019 time 11:00 a.m. – 12:20pm, 200 W. County Home Rd – LMP office
Community Liaisons	:	Steve Barnes, Dan Folendore, Dan Harger, Philip Lee, and Tim Lockhart
Liaisons Present	:	Tim Lockhart
Seminole County	:	Thomas Calhoun, Joey Cordell, Gloria Eby, Kim Ornberg, and Kathy Moore

### 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
    - Lake Amory currently permit exempt
  - Currently drafting County Shoreline Ordinance
    - LMP will update liaisons and solicit input
- Lake Status Nutrients/Habitat Scores [Bioassessment Indices – Refer to Exhibit C]
  - Post Hurricane Effects
  - LVI in Healthy category due to increase in sensitive and native plant types - Increase from 31 to 48 points
  - LVI/BioBase data on Watershed Atlas website:  
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7503&wbodyatlas=lake>
    - LMP to add rainfall data to nutrient rankings
- 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 permitted for hydrilla management, restocking currently not needed
  - Monitor bladderwort and treat as necessary - Successful bladderwort treatment in 2018
- 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
    - LMP to supply welcome packages to Tim for distribution
  - Lakewatch samples - no data since 2010
- 2019 Shoreline Planting Event- dates available
  - To be coordinated via Thomas Calhoun - Individual shoreline plantings to be scheduled at a later date
- Other
  - TGC fish barrier maintenance added
    - Barrier under monthly maintenance - Increase from \$150 to \$900 due to change in vendor
    - Barrier replacement to be requoted
  - Email Address for routine communications and important announcements
  - Organic vegetation removal (\$34,032.50)
  - Ordinance Discussion
  - New golf course drainage pipe spotted that drains into lake
    - LMP to follow up with City of Sanford
  - Biobase mapping to be conducted
  - Budget details discussed
    - County Administrative Fee increase questioned - Liaison requesting dispute process for increase
  - Liaison requested information on mechanisms to fund sediment removal in 2020
    - Discussed loan, cost-share, special capital assessment, and budget impacts
  - Discussed possible changes in County Administrative Code
  - MSBU provided capital assessment options for organic vegetation/sediment removal project
    - Liaison expressed project as a priority for the lake



**Exhibit B - Financial Summary**  
**MSBU FUND: AMORY (LAKE)**

4/29/2020

	Tax Year	2018	2019	2020
	Assessment	\$300	\$300	\$300
	Fiscal Year	FY18-19	FY19-20	FY20-21
<b>Revenue</b>		Actual	Working	Proposed
Beginning Fund Balance	\$	28,279	\$ 31,323	\$ 30,813
Assessment Revenue	\$	6,375	\$ 6,336	\$ 6,336
Other (Interest)	\$	697	\$ 139	\$ 50
Other - Per Ordinance Cost Share	\$	-	\$ -	\$ -
MSBU Program Fund Advance	\$	-	\$ -	\$ 5,500*
<b>TOTAL Revenue</b>	<b>\$</b>	<b>35,351</b>	<b>\$ 37,798</b>	<b>\$ 42,699</b>

<b>Expenditure &amp; Reserves</b>		Actual	Working	Proposed	
				Targeted	Projected
MSBU Program Administrative Fee [7% Rev FY20-21]	\$	1,235	\$ 1,235	\$ 444	
Other County Services (Service Entity)	\$	-	\$ -	\$ -	
Fund Advance Repayment	\$	-	\$ -	\$ -	
Contracted Services	\$	2,794	\$ 5,750	\$ 37,900	
<i>AWC Services (via AAM)</i>	\$	1,819	\$ 4,850	\$ 3,000	
<i>Chemicals (Non-AAM)</i>	\$	-	\$ -	\$ -	
<i>FAS/GEN Testing</i>	\$	-	\$ -	\$ -	
<i>Shipping (Test Samples)</i>	\$	-	\$ -	\$ -	
<i>TGC Fish</i>	\$	-	\$ -	\$ -	
<i>Fish Barrier Inspection/Minor Repair</i>	\$	975	\$ 900	\$ 900	
<i>Fish Barrier Replace/Major Repair</i>	\$	-	\$ -		
<i>Other: Dredging (Sediment Removal)</i>	\$	-	\$ -		
<b>Reserve/Contingency</b> <small>Note 1</small>	<b>\$</b>	<b>31,323</b>	<b>\$ 30,813</b>	<b>\$ 4,355</b>	
<i>Targeted Reserve: Hydrilla (Whole Lake)</i>	\$	8,000	\$ 8,000	\$ 8,000	\$ 3,555
<i>Targeted Reserve: Fish Barrier Replace/Repair</i>	\$	1,800	\$ 1,800	\$ 1,800	\$ 800
<i>Reserve: Other</i>	\$	21,000	\$ 21,000	\$ -	\$ -
<b>Targeted Reserve Status (+ Surplus; - Deficit)</b>	<b>\$</b>	<b>523</b>	<b>\$ 13</b>	<b>\$9,800</b>	<b>\$4,355</b>
<i>Operating Contingency</i>	\$	523	\$ 13		\$ -
<b>TOTAL Expenditures &amp; Reserves</b>	<b>\$</b>	<b>35,351</b>	<b>\$ 37,798</b>	<b>\$ 42,699</b>	

Note 1: 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. The targeted reserve values for Hydrilla & Fish Barrier are based on cost estimates established by the LM Program.

Fund Advance BB Payment (Principal) Payment (Financing Fees)	\$ -	\$-	\$ 5,500
Fund Advance EB	\$ -	\$ -	\$ 5,500

\*Fund Advance FY20-21 is proposed per budget preparations and is subject to actual expenditures, site conditions and financial status of MSBU. Maintaining established reserves for hydrilla management related costs is recommended by MSBU Program.

LM Program Enhanced Services Cost	<i>Pending development &amp; confirmation</i>		
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## C - Historic Reports/Data

Additional information for Lake Amory can be found on the Seminole County Water Atlas website at:  
<http://www.seminole.wateratlas.usf.edu/resourceprogram.aspx?aid=15&wbodyid=7503>  
<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7503&wbodyatlas=lake>

### Lake Amory Water Quality Report: How Does My Lake Rank?      TSI SCORE: 27 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 indicate 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?      34 Impaired

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 Lake Amory (sampled on September 17, 2019) scored a **34, Impaired** which is in the impaired category. This is a decrease in score from **48, Healthy**.

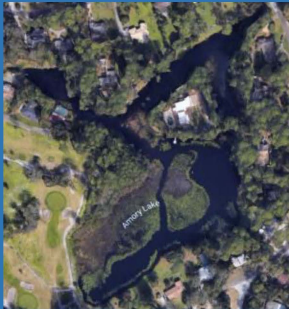
Aquatic life use category	LVI Range	Description
Category 1 "exceptional"	78-100	Nearly every macrophyte present is a species native to Florida, invasive taxa typically not found. About 30% of taxa present are identified as sensitive to disturbance and most taxa have C of C values >5.
Category 2 "healthy"	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.



# Lake Amory

## Trend Report

2019



**NNC**

(Numeric Nutrient Criteria)

*Pass*

GeoMean Color: 92.39

GeoMean Alkalinity: 51.76

**TSI Score: 27**

(Trophic State Index)

*Good*

**LVI Score: 34**

(Lake Vegetation Index)

*Impaired*

**MSBU:**

(Municipal Service Benefit Unit)

*Yes*

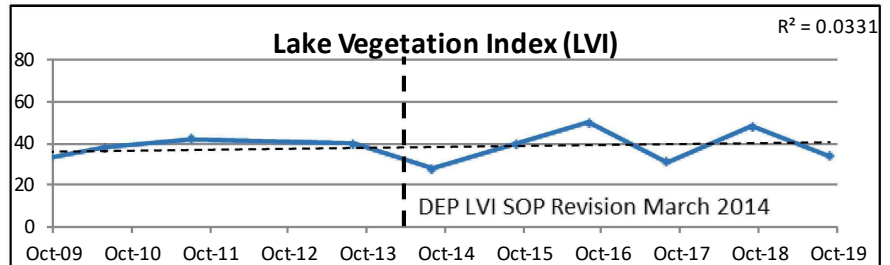
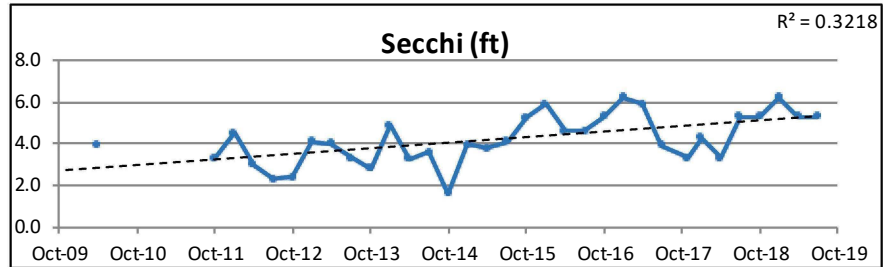
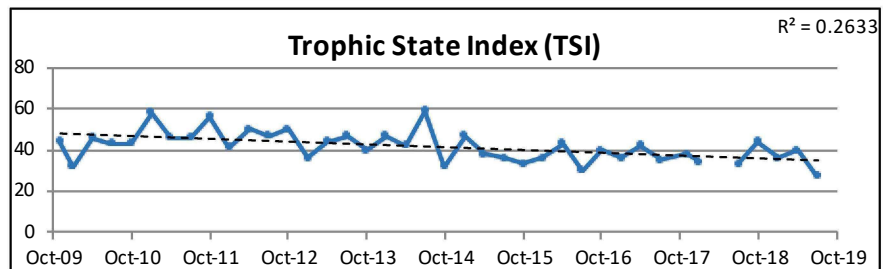
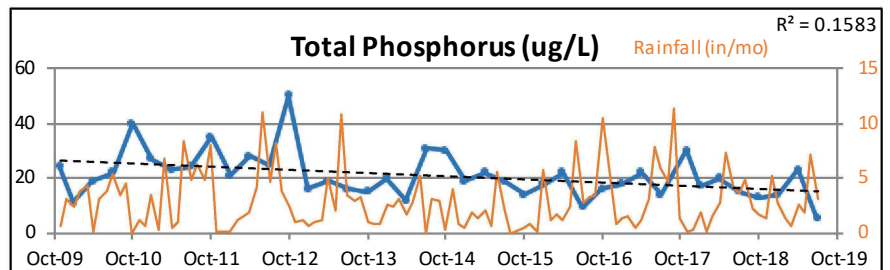
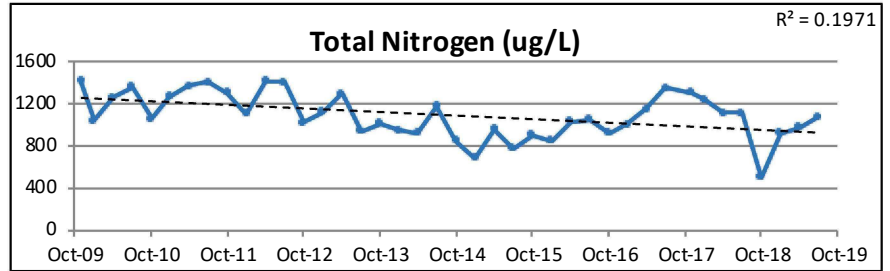
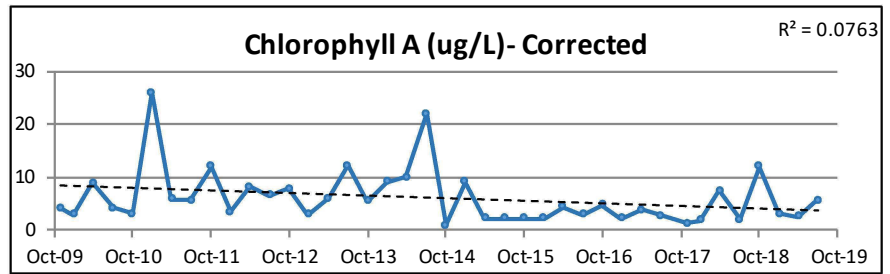
Lake Monroe Watershed

9.82 acres

Lat 28° 46' 49"

Lon 81° 18' 46"

WBID 2973 G



**Exhibit D**  
**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