

2023

**HOWELL LAKE
LAKE MANAGEMENT PLAN**

Annual Meeting

- Agenda

Lake Management Plan

- General Provisions
- Community-Based Activities & Events
- County Services
 - Lake Management & Supplemental Programs
- 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

HOWELL LAKE: ANNUAL MEETING

Date/Time/Location:	Wednesday, February 1, 2023 /9:00 am – 9:45 am/ ZOOM - Virtual
Community Liaisons:	Rankin Jays, Carol DiPasqua, Wayne General, Rita Hoffman, Joe Lung, Bob Musser, Ron Shady, Jim Travis, Kyle Bateh, Wanda Basil, Jonathan Denton, Chuck Weirauch
Liaisons Present:	Joe Lung, Bob Musser, Wayne General, Rita Hoffman, Diana Secor, Carol DiPasqua, Clayton Doolittle
Seminole County:	Thomas Calhoun, Tony Cintron, Daniel Barber, Chad Day, Michael Eason, Tameka Morton, Michelle Rosa-Munger, Lynda Reaves

General Topics & Updates

Lake Management Program

- Welcome
- Shoreline Protection Ordinance Status
 - FWC Rule change removes permit requirements on lakes smaller than 160 acres
 - County Shoreline Ordinance approved in April 2021
 - FWC remains the permitting body
- Lake Status Nutrients/Habitat Scores [Bioassessment Indices - Refer to Exhibit C]
 - Water quality trend lines stable
 - TSI scored 51 in Good category
 - Algae blooms
 - Reduction in comparison to previous year
 - LVI score continues to be in healthy category
 - LVI/BioBase data on Watershed Atlas website:
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7579&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
 - Monitor hydrilla and treat as necessary (early detection and rapid response)
 - Please advise if you see any hydrilla around your docks
 - Hygrophila treatments at inflows
 - Cassel Creek treated in December 2022
- 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
- 2023 Shoreline Planting Event – Dates tentative
 - To be coordinated via Tony Cintron
 - Plants to be funded by MSBU
- Other
 - Grass Carp
 - No hydrilla to justify stocking
 - Carp Barrier
 - Monitoring multiple times monthly (sometimes twice a week)
 - Chemically and physically treated to avoid debris accumulation
 - Email Address for routine communications and important announcements – **Cortland to update homeowner list for Seminole county**
 - Confirm/update liaison information **Bob Musser moving to Lake Hurst**
 - **LMP to get quotes on Water Quality Projects**

MSBU Program & Resource Management Department

- Financial Summary [Refer to Exhibit B]
- MSBU to investigate reduction in assessments – **March 15th meeting**

LAKE HOWELL

LAKE MANAGEMENT PLAN

GENERAL PROVISIONS

Scope of Public Lake Management Services

The scope of public lake management 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 2015-6
- Interlocal Agreement with the City of Casselberry
- FWC Aquatic Plant Management Permit
- FWC Triploid Grass Carp Permit

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

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

Targeted Invasive/Exotic Aquatic Vegetation

- Hydrilla (The management of submersed vegetation other than hydrilla and provisions for lake access corridors are excluded from MSBU services.)
- Water hyacinth, water lettuce, parrots feather; torpedo grass, paragrass, cattail, water fern, hygrophila, and algae

Frequency of Aquatic Vegetation Management Treatment (herbicides)

Treatment services are performed at the direction of the Seminole County LMP as per the Lake Howell Management Plan which will be reviewed at the annual planning sessions with the expectation that the Seminole County LMP may alter anticipated treatments as merited 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 governing ordinance limits assessment increases to no greater than 10% above the prior year assessment; the ordinance does not include provisions for an assessment cap.

Seminole County Employees

Information for contacting the employees of Lake Management and the MSBU program:

Lake Management – Thomas Calhoun (tcalhoun@seminolecountyfl.gov), Tony Cintron (acintron@seminolecountyfl.gov), Daniel Barber (dbarber02@seminolecountyfl.gov), Chad Day (cday02@seminolecountyfl.gov)

MSBU – Michael Eason (meason@seminolecountyfl.gov), Tameka Morton (tmorton@seminolecountyfl.gov), Michelle Rosa-Munger (mrosamunger@seminolecountyfl.gov)

Lake Liaisons

The ordinance governing the Howell Lake MSBU provides the for liaison participation as 2 liaisons from the Friend of Lake Howell organization; 1 liaison per each common element property (property owned by an association such as HOA or COA) and 2 liaisons from the general lakefront. 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 Howell are as shown in the following table and are current as of 2020. The open slots are available to property owners in the designated HOA or Association.

LIAISON NAME	EMAIL	REPRESENTATING
Secor, Diana	Marbeya1@gmail.com	Carmel (CE)
Lung, Joe	joe_lung@cfl.rr.com	FOLH (1 of 2)
Open		FOLH (2 of 2)
Naldrett-Jays, Rankin	rankinjays@gmail.com	Howell Harbor Estates(CE)
Travis, Jim	mrlakehowell@gmail.com	Lago Vista(CE)
Open		Lake Howell Arms (CE)
DiPasqua, Carol	cjdipasqua@yahoo.com	Lakefront (1 of 2)
Ferguson, Scott	sfergerson@orlandodiocese.org	Lakefront (2 of 2)
Musser, Bob	BobM@dbsinfo.com	Lakehurst (CE)
Hoffman, Rita	joyfulpassages@gmail.com	Marbeya (CE)
Open		Reserve at Lake Howell (CE)
Weirauch, Chuck	cweirauch@mindspring.com	Sausalito Condo (CE)
Shady, Ron	shadyr@emvarqmail.com	Sausalito Shores (CE)

COMMUNITY-BASED ACTIVITIES & EVENTS

LMP recommends/encourages homeowners to coordinate a resident-based volunteer event involving native plantings along the shoreline of Lake Howell. The intention of such an event is to plant beneficial native aquatic plants to key areas in need along the bank. Residents should organize planting days creating a beneficial shoreline. 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 Howell community.

Continued recommendations for community initiatives are as follows:

- 1) Plant a healthy shoreline with native emergent plants;
- 2) Continue the Friends of Lake Howell, a formal Lake Association, and hold at least one annual meeting with topics relevant to your lake;
- 3) Establish a backyard berm and swale system where applicable;
- 4) 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 such as grass clippings, Contact us at 407-665-5542 for assistance;
- 5) Fertilize wisely by using phosphorous free and slow-release nitrogen based fertilizers only. Visit www.seminolecountyfl.gov/fertilizer for more information; and
- 6) Provide content for the Seminole County Water Atlas Lake Management Webpage for your lake (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

Lake Howell 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 treatments and waterbody bioassessment. 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. 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

Lake Howell has an on-going history of hydrilla presence. In 2015 the hydrilla conditions were prolific and were addressed via an extensive whole-lake treatment shortly after the MSBU was created. Aggressive hydrilla growth in Lake Howell has the likelihood to continue. The timing and extent of hydrilla re-growth is affected by multiple natural and environmental factors that cannot be controlled or predicted with certainty. As with any lake with a history of hydrilla infestation, long-term planning to include financial preparation for potential additional future whole lake treatment is advised. While extensive growth of hydrilla is possible at any point in time; it is anticipated that routine spot treatments of hydrilla with herbicides and re-establishing continuous biological control pressures from re-stocking with triploid grass carp fish will be sufficient to manage hydrilla re-growth during this fiscal year.

Primary expectations for current fiscal year are as follows:

- 1) Monthly aquatic herbicide maintenance for non-native vegetation and hydrilla treatments (as needed)
- 2) Grass carp stocking monitoring (determining biological need)
- 3) Continued monitoring of hydrilla, and other submersed aquatic plants, and
- 4) Continue grass carp barrier debris/maintenance 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 monthly aquatic herbicide maintenance for non-native vegetation and hydrilla treatments (as needed),
- 2) Future grass carp stockings if deemed necessary, pending permit amendment,
- 3) Continued monitoring of hydrilla, coontail, other submersed aquatic plants, and grass carp fish,
- 4) Continued grass carp barrier debris and maintenance services.

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 Planning Session)

Date/Time/Location:	Wednesday, March 23, 2022 /12 pm – 1 pm/ ZOOM - Virtual
Community Liaisons:	Diana Secor, Rita Hoffman, Joe Lung
Liaisons Present:	
Seminole County:	Daniel Barber, Thomas Calhoun, Tony Cintron, Michael Eason, Tameka Morton, & Lynda Reaves
Casselberry:	

General Topics & Updates

Lake Management Program

- Welcome
- Shoreline Protection Ordinance Status
 - FWC Rule change removes permit requirements on lakes smaller than 160 acres
 - County Shoreline Ordinance approved in April 2021
 - FWC remains the permitting body
- Lake Status Nutrients/Habitat Scores [Bioassessment Indices - Refer to Exhibit C]
 - Water quality trend lines stable
 - Algae bloom
 - Reduction in eelgrass was a contributing factor
 - LVI score continues to be in healthy category
 - LVI/BioBase data on Watershed Atlas website:
<http://www.seminole.wateratlas.usf.edu/shared/ecology.asp?wbodyid=7579&wbodyatlas=lake>
- Treatment Plans - Current & Proposed [Refer to Lake Management Plan]
 - Monitor hydrilla and treat as necessary (early detection and rapid response)
 - Please advise if you see any hydrilla around your docks
 - Upstream hydrilla sources
 - Winter Park hydrilla treatment on hold until flow reduces
 - Hygrophila treatments at inflows
 - Check Cassel Creek per Joe Lung observations
- General recommendations for Lake Community [Refer to Lake Management Plan]
 - Increase native aquatic plantings in areas devoid of vegetation
 - Thomas recommends planting bulrush around the lake this year to replace cattails
 - Promote “welcome packages” to new lakefront homeowners
 - Rita to receive 4-5 welcome packages
- 2022 Shoreline Planting Event – Dates Available
 - To be coordinated via Tony Cintron
 - Dates shared with Liaisons
 - Plants to be funded by MSBU
 - Transportation restrictions
- Other
 - TGC Restocking for 2022 on hold
 - No hydrilla to justify stocking
 - TGC Fish Barrier
 - Monitoring multiple times monthly (sometimes twice a week)
 - Chemically and physically treated to avoid debris accumulation
 - Email Address for routine communications and important announcements
 - Water Quality project at Howell Creek weir
 - Confirm/update liaison information
 - New liaison for Carmel – Diana Secor; email?

MSBU Program & Resource Management Department

- Financial Summary [Refer to Exhibit B]
- MSBU to investigate reduction in assessment

Exhibit B - Financial Summary

MSBU FUND: HOWELL (LAKE)

Assessment [Average Per Waterfront Parcel]	Tax Year	2021	2022	2023
	Fiscal Year	FY21-22	FY22-23	FY23-24
Revenue		Actual	Working Budget	Proposed Budget
Beginning Fund Balance	\$	301,780	\$ 411,734	\$ 518,100
Assessment Revenue	\$	128,071	\$ 130,450	\$ 130,450
Other (Interest)	\$	1,187	\$ 1,000	\$ 1,000
Other - FOLH (FY20-21); FEMA	\$		\$	\$
MSBU Program Fund Advance				
TOTAL Revenue	\$	431,038	\$ 543,184	\$ 649,550
Expenditure & Reserves		Actual	Working Budget	Proposed Budget
Application Fee Recoupment	\$	-	\$ -	\$ -
MSBU Program Administrative Fee [7% Rev FY21-22]	\$	9,132	\$ 9,130	\$ 9,130
Other County Services (Service Entity)	\$	-	\$ -	\$ -
Fund Advance Repayment	\$	-	\$ -	\$ -
Contracted Services	\$	10,172	\$ 15,954	\$ 47,000
<i>AWC Services (via AAM)</i>	\$	9,672	\$ 12,000	\$ 12,000
<i>Chemicals (Non-AAM)</i>	\$	-	\$ -	\$ 25,000
<i>FAS/GEN Testing</i>	\$	-	\$ -	\$ -
<i>Shipping (Test Samples)</i>	\$	-	\$ -	\$ -
<i>TGC Fish</i>	\$	-	\$ -	\$ -
<i>Fish Barrier Inspection/Minor Repair</i>	\$	500	\$ -	\$ 10,000
<i>Fish Barrier Replace/Major Repair</i>	\$	-	\$ -	\$ -
<i>Other</i>	\$		\$ 3,954	\$ -
Total Expenditure & Reserves	\$	19,304	\$ 25,084	\$ 56,130
Reserve/Contingency¹	\$	411,734	\$ 518,100	\$ 593,420
LM Program Enhanced Service Cost			Pending development & confirmation	

¹ 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 primary purpose for establishing contingency/reserve 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.

Exhibit C - Historic Reports/Data

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

<http://www.seminole.wateratlas.usf.edu/lake/waterquality.asp?wbodyid=7579&wbodyatlas=lake>

<http://www.seminole.wateratlas.usf.edu/resourceprogram.aspx?aid=15&wbodyid=7579>

Lake Howell Water Quality Report: How Does My Lake Rank? **TSI SCORE: 51 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).

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? **43 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 Lake Howell (sampled on August 3, 2022) scored **43 Healthy**. While the score slightly decreased from the previous year's 45 score, it remains in the Healthy category. This decrease is due to a loss of sensitive native taxa.

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 Howell

Trend Report

2022



TSI Score: 51
(Trophic State Index)
Good

LCI Score: 37
(Lake Condition Index)
Good

LVI Score: 43
(Lake Vegetation Index)
Healthy

FDEP Status
(Florida Dept of Environmental Protection)
Impaired for Biology

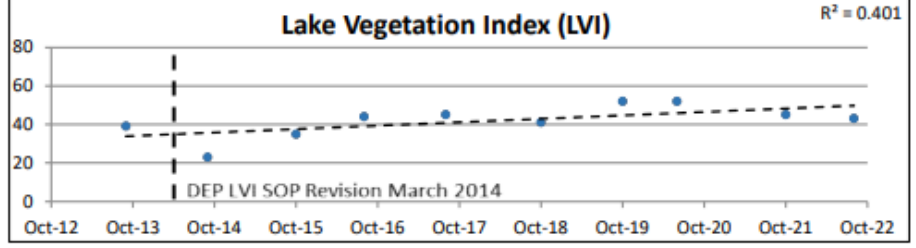
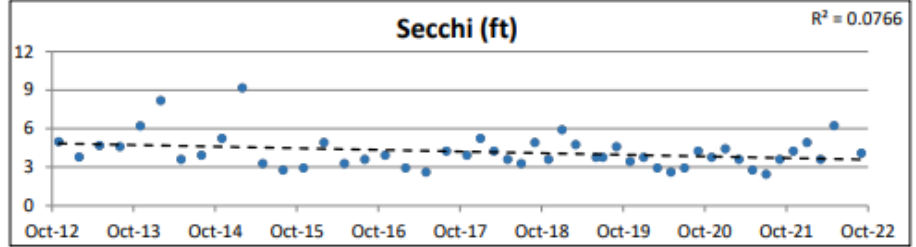
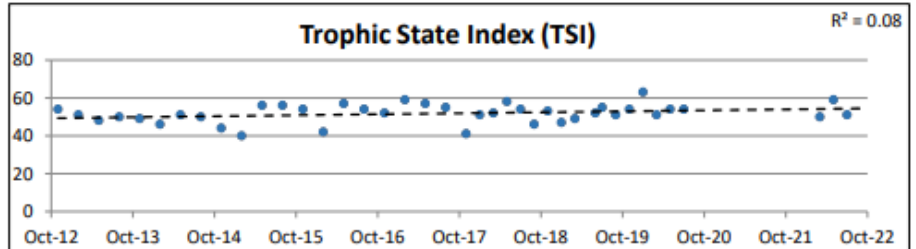
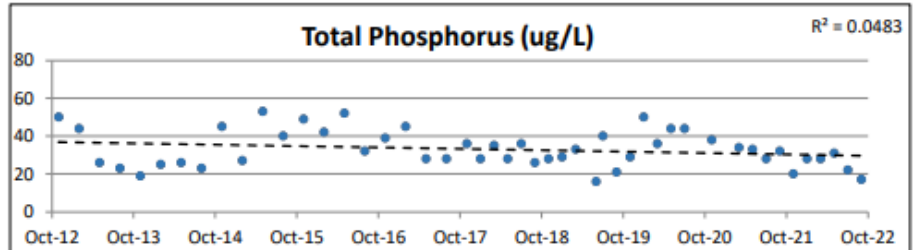
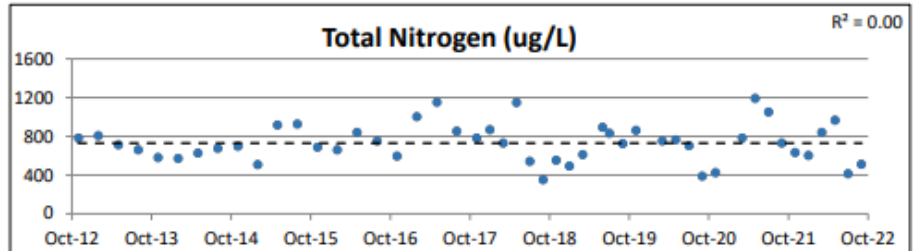
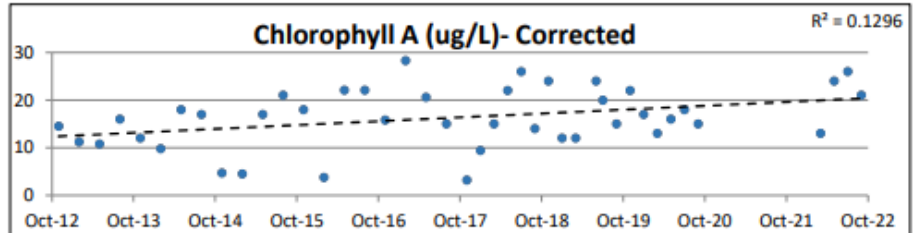
TMDL Status
(Total Maximum Daily Load)
Active Pollutant Reduction Plan-4e

BMAP
(Basin Management Action Plan)
Jesup

Howell Creek Watershed
401 acres
Lat 28° 38' 23" N
Lon 81° 18' 33" W

WBID 2997B

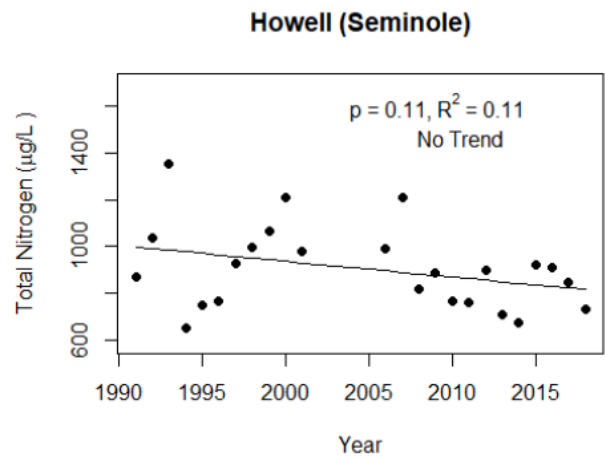
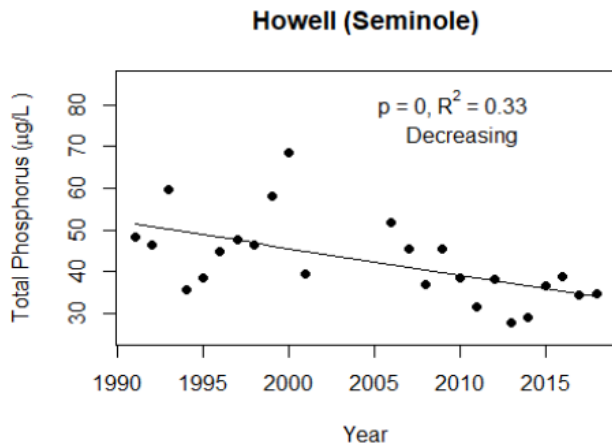
For more information please visit:
seminole.wateratlas.usf.edu/



Florida LAKEWATCH Data:

Total Phosphorus and Total Nitrogen

Trend plots of annual average total phosphorus and annual average total nitrogen versus year. The R² value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the R² the stronger the relation) and the p value indicates if the relation is significant (p < 0.05 is significant). Trend status are reported on plots.



Total Chlorophyll and Secchi Depth

Trend plots of annual average chlorophyll and annual average Secchi versus year. The R² value indicates the strength of the relations (ranges from 0.0 to 1.0; higher the R² the stronger the relations and the p value indicates if the relation is significant (p < 0.05 is significant). Trend status are reported on plots.

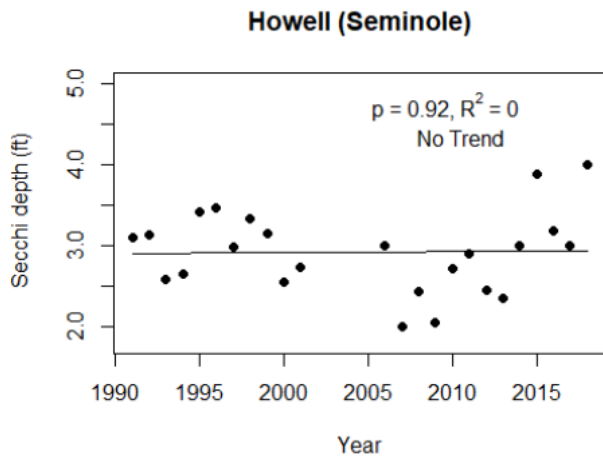
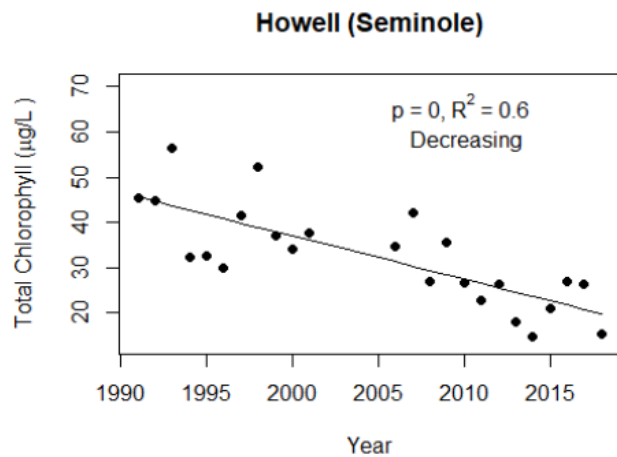


Exhibit D

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