

## Documentation in Support of Category 4e WBID 2997B: Lake Howell

### Waterbody/Watershed Identification

Organization	Seminole County Watershed Management Division
Point of Contact	Robert Renk, Senior Environmental Scientist, 200 W County Home Road, Sanford, FL 32773. (407) 665-2456, rrenk@seminolecountyfl.gov
Waterbody(s)	WBID 2997B; Lake Howell
Watershed(s)	Lake Jesup Planning Unit
No. Waterbody / Pollutant Combinations	WBID 2997B Lake Howell; Cycle 3 Final Verified List. Verified period impaired for nutrients and chlorophyll a. Nutrients are listed as the causative pollutant for lake's failing bioassessments during assessment period.

### Description of Baseline Conditions

Watershed(s)	Middle St Johns Basin Group 03080101 (Upper St Johns); Lake Jesup Planning Unit		
Impairments	<u>HUC</u> Upper St Johns	<u>WBID</u> 2997B Lake Howell Cycle 3 Final Verified List <ul style="list-style-type: none"> <li>• Biology</li> <li>• Nutrients (chla-a)</li> </ul>	<u>Impairment Cause</u> Significant sources of nutrient loadings are due to storm water runoff, direct runoff from sub-basins, historic WWTP discharges, and inflow from major tributaries—especially Howell Creek.
Baseline Data	<p>Data from the FDEP Cycle 3 assessment is from the Planning Period (January 1, 2002 through December 31, 2011) and the Verified Period (January 1, 2007 through June 30, 2014). The Group 2 Middle St Johns River Final Verified List is based on IWR Run 50 and the Impaired Waters Rule (IWR).</p> <p>During the Planning Period the LVI scores of at least two temporally independent LVI scores failed to meet the threshold of <math>\geq 43</math>. The Planning Period mean average was 38.5. During the Verified Period the LVI scores of at least two temporally independent LVI scores failed to meet the threshold of <math>\geq 43</math>. The Verified Period mean average was 37.6.</p> <p>During the Planning Period the annual geometric mean (AGM) of chlorophyll-a exceeded the concentration threshold of <math>\leq 20</math> mg/l in four out of six recorded years from 2002-2011. During the Verified Period the annual geometric mean (AGM) of chlorophyll-a exceeded the concentration threshold of <math>\leq 20</math> mg/l in two out of three consecutive years from 2010-2012, averaging 21.3 mg/l.</p>		

Submitted by: Seminole County Watershed Management Division to Florida Department of Environmental Protection Division of Environmental Restoration and Support – Watershed Assessment Section

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## Evidence of Watershed Approach

Area of Effort	Lake Howell (WBID 2997B) is located in the Lake Jesup Watershed within the Howell Creek sub basin in SW Seminole County. [ <i>Attachment #A2</i> ].
Key Stakeholders Involved and Their Roles	<p>Responsible participants directly involved in proposed management actions include Seminole County, Lake Howell Aquatic Weed Control Municipal Service Benefit Unit (MSBU), Friends of Lake Howell (FOLH), and the City of Casselberry.</p> <p>Lake Howell entered the MSBU program on February 24<sup>th</sup> 2015 with the objective of invasive plant management. The creation of a lake management MSBU, as well as the on-going efforts to provide improvements requires community involvement and support. The Seminole County Lake Management Program provides public education, field assessments, and technical assistance to the home owners as part of the partnership. An MSBU may be established to fund a one-time restoration project or to fund ongoing management of a waterbody with aquatic vegetation management as the primary objective.</p> <p>In addition to the many volunteer shoreline planting events sponsored and organized by the County, we have fostered partnerships with local programs and provided extensive education efforts for homeowners that have access to Lake Howell. One such program, the Friends of Lake Howell, is a nonprofit group of concerned homeowners who live on and around Lake Howell dedicated to keeping the lake clean and free of hydrilla. The FOLH hold meetings attended by Seminole County and other stakeholders that provide a platform to educate homeowners about recommended management options for Lake Howell and provide updates for ongoing and/or proposed projects.</p> <p>Seminole County also has an agreement in place with the City of Casselberry to conduct and/or partner on TMDL activities. [<i>Attachment #A3</i>].</p>
Watershed Plan & Other Supporting Documentation	<p>The Reasonable Assurance area includes the drainage basin from the Howell Creek Basin within WBID 2997B – Lake Howell. This WBID is impaired for Nutrients (Chlorophyll a) because the annual geometric means exceeded the nutrient criteria more than once in a three year period. As a result, the parameter was added to the 303(d) list. WBID 2997B was also impaired for Biology based on failed bioassessments. Nutrients have been determined to be the causative pollutant. Biology was added to the 303(d) list.</p> <p>The Lake Howell Nutrient Reduction Plan identifies extensive management activities they have already been implemented, ongoing annual activities and proposed capital projects [<i>Attachment #A4</i>]. Project status and start dates have been included on the table.</p>
Point Sources and Indirect Source Monitoring (Sites)	The National Pollution Discharge Elimination System (NPDES) wastewater or municipal separate storm sewer system MS4 permits in the basin include the following

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- FLS606871 Casselberry, City of. 95 Triplet Lake Dr, Casselberry, FL 32707
- FLS000038 Seminole Co & Co App – MS4. 1101 East First St, Sanford, FL 32771

Note: Generic Permits for stormwater discharge from large and small construction activities are considered temporary; therefore, are not included in this listing.

#### Land Use Characteristics

Table 3-2 from the Lake Howell Hydrologic/Nutrient Budget Evaluation and Water Quality Management Plan lists the land use characteristics for areas discharging to Howell Creek upstream from the USGS gauging station.

TABLE 3-2		
LAND USE CHARACTERISTICS FOR AREAS DISCHARGING TO HOWELL CREEK UPSTREAM FROM THE USGS GAUGING STATION		
LAND USE	AREA (acres)	PERCENT OF TOTAL (%)
Low Density Residential	1597	10
Med. Density Residential	7236.2	45.3
High Density Residential	813	51
Commercial	2395.1	150
Industrial	107.6	0.7
Institutional	7453	47
Agriculture	749	0.5
Open Space	286.8	1.8
Recreational	270.7	1.7
Transportation	4942	31
Water	2877.9	18
Wetlands	521.5	3.3
Total	15982.6	100

#### Water Quality Criteria

During the next 5 year assessment period, the standard water quality Numeric Nutrient criteria (NNC) is expected to be met. This will be confirmed through continued quarterly water quality and annual vegetation assessments consistent with NNC criteria.

#### Restoration Work

The structural and non-structural management activities listed in the Nutrient Reduction Plan [**Attachment #A4**] provide the framework for the continued restoration of Lake Howell. In addition to the capital projects, Seminole County has conducted eight (8) shoreline planting events in an effort to re-establish a native shoreline around the lake. These planting events have resulted in a total of 19,660 native, emergent plants installed along the shoreline of Lake Howell. In addition to the shoreline planting, Seminole County has also established eelgrass within the lake. Seminole County mapped the submersed aquatic vegetation (SAV) in the lake in 2010 and documented 0.73 acres

[**Attachment #A5**] of eelgrass present. The County conducted a follow up SAV survey and documented the expansion of eelgrass to 43 acres [**Attachment #A6**]. Seminole County has conducted annual biological monitoring on Lake Howell, assessing both flora (LVI) and fauna (LCI) communities since 2004. The Lake Condition Index (LCI) assesses the longer lived macroinvertebrate assemblage. The LCI scores for Lake Howell have exhibited an improving trend since the County started conducting LCIs in 2004. The latest LCI score (11/2017) was Good with a Shannon Weaver Diversity Index of 3.105. Although the historical LVI scores have fluctuated due to the presence of hydrilla, the latest LVI score (8/2017) was Healthy (45).

A successful whole lake treatment for hydrilla was conducted in 2015 by the Seminole County Lake Management Program. Monthly maintenance for invasive species is over seen by county staff. In addition to the restoration efforts occurring directly in Lake Howell, there has also been hydrilla and emergent management within several lakes and connected systems inside the Reasonable Assurance area.

- Cassel Creek – Hydrilla management, emergent management
- Kewanee Pond – Harvesting, hydrilla & emergent management
- Howell Creek - Hydrilla & emergent management
- Lake of the Woods - Hydrilla & emergent management
- Red Bug Lake - Hydrilla & emergent management
- Red Bug RSF - Hydrilla & emergent management

Through continued invasive plant management and shoreline restoration events Lake Howell has seen an increase in LVI scores. Successful hydrilla management has played a major role in increasing these scores by significantly reducing the presence of hydrilla, and allowing native SAV to expand and become the dominant vegetation found in Lake Howell.

Additional ongoing maintenance activities will continue, including stormwater BMPs that address street sweeping [**Attachment #A7**], as well as MS4 maintenance. Furthermore, the County's stormwater education program will continue to expand with the implementation of the County's newly passed (2017) fertilizer ordinance [**Attachment #A8**].

Lastly, Seminole County has completed four (4) separate Capital Improvement Projects within the Reasonable Assurance (RA) area [**Attachment #A9**]. These projects include The Cassel Creek RSF [**Attachment #A10**], which treats water in the upstream subbasin; the Lake Ann Outfall [**Attachment #A11**], which consists of a baffle box and pipe replacement; the Red Bug Lake Road RSF [**Attachment #A12**], which also treats water in the upstream subbasin; and the Lake Howell Road Pond Retrofit [**Attachment #A13**], which is a stormwater improvement project that provides additional treatment of runoff from Howell Branch Road.

Additional capital projects that are under construction or proposed are listed in [**Attachment #A4**].



## Critical Milestones/Monitoring

Anticipated Critical Milestone(s) and Completion Dates:

The Lake Howell Nutrient Reduction Plan identifies a variety of existing and proposed structural and non-structural management activities including completion dates [Attachment #A4]. Since 2007 there have been restoration events held at Lake Howell almost every year totaling nearly 20,000 native shoreline plants to date. [Attachment #A14].

Based on the results of Seminole County water quality and biological sampling, Lake Howell (WBID 2997B) has attained the NNC for the past five (5) years (2013-2017). The County is proposing to continue its monitoring efforts of Lake Howell. A summary letter report will be submitted to DEP every two (2) years to update the monitoring results and management activities. If the lake fails to maintain the NNC at the end of the 5 year basin reassessment period, additional structural and non-structural management activities will be evaluated. The first summary report would be due to DEP July 2019 and the 5 year reassessment would be due July 2022.

Monitoring Component

The water quality monitoring program for Lake Howell is based on quarterly grab collection of field meter parameters and analytes that are submitted to a NELAC certified lab (Pace Laboratory & Advanced Environmental Laboratories) for chemical analysis.

### Existing Historic WQ Monitoring Program and Proposed Monitoring Plan

SITE	FREQUENCY	PARAMETERS	LAT/LONG
HOW	QUARTERLY	TRUE COLOR, ALK, TSS, NH3, TKN, NO2NO3, LL-OP, LL-TP, BOD, CHL A)	N 28.640171 W -81.308575
	ANNUAL	LCI	
	ANNUAL	LVI	

The Seminole County sampling team adheres to DEP established SOP's with regard to collection and documentation of sample collection.

The Seminole County Watershed Management Division houses all of this data on the Seminole County Water Atlas, where it is then uploaded to STORET/WIN on a quarterly basis.

## Other Key Dates

Estimated Delisting Date

The WBID is in the state's Group 2 Basin in the Central DEP District. The next review and Assessment Cycle 3 is expected in 2022. At that time, sufficient data will have been collected to fully assess the WBID. If it's not impaired, DEP is expected to request the WBID be delisted from the federal 303(d) list (if applicable).

## Financial Commitments

Seminole County obtains its funding for the Watershed Management Division through a variety of sources including the County's General Fund, cost shares, and grants. Water quality capital improvement projects are also funded through the penny sales tax.

## References / Attachments

- A1 4E\_RA Boundary / Land Use
- A2 4E\_RA Boundary
- A3 Interlocal Agreement for TMDL Activities
- A4 Lake Howell Nutrient Reduction Plan
- A5 Submerged Aquatic Vegetation 2010
- A6 Submerged Aquatic Vegetation 2012
- A7 4E\_Street Sweeping
- A8 Florida Friendly Fertilizer Use Ordinance
- A9 4E\_RA Boundary W/Projects
- A10 Cassel Creek RSF
- A11 Lake Ann Baffle Box
- A12 Red Bug Lake Rd RSF
- A13 Lake Howell Rd Stormwater Improvement
- A14 Lake Howell Restoration Events (2007—2016)

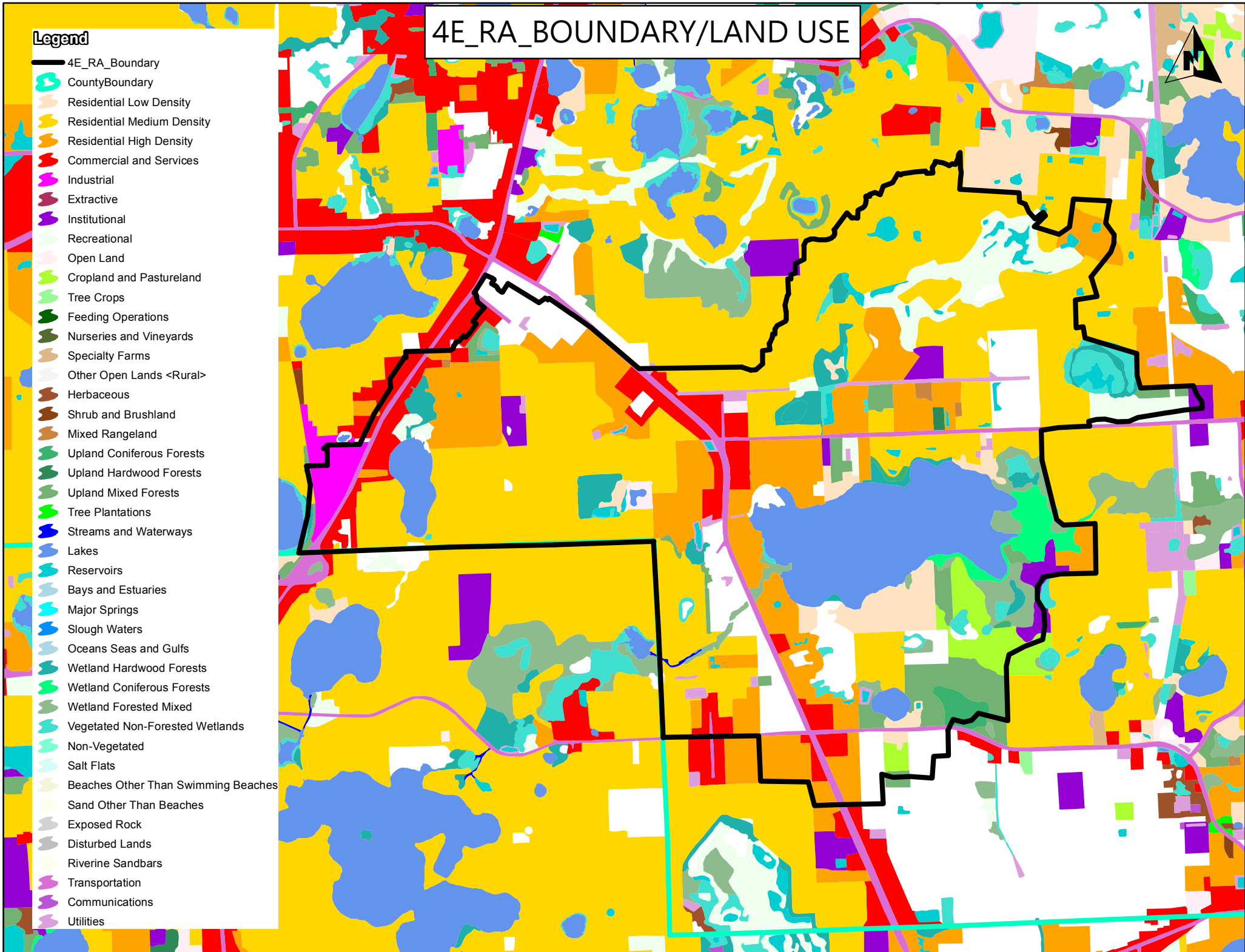
## **Attachment #A1**

### **4E\_RA Boundary / Land Use**

# 4E\_RA\_BOUNDARY/LAND USE

## Legend

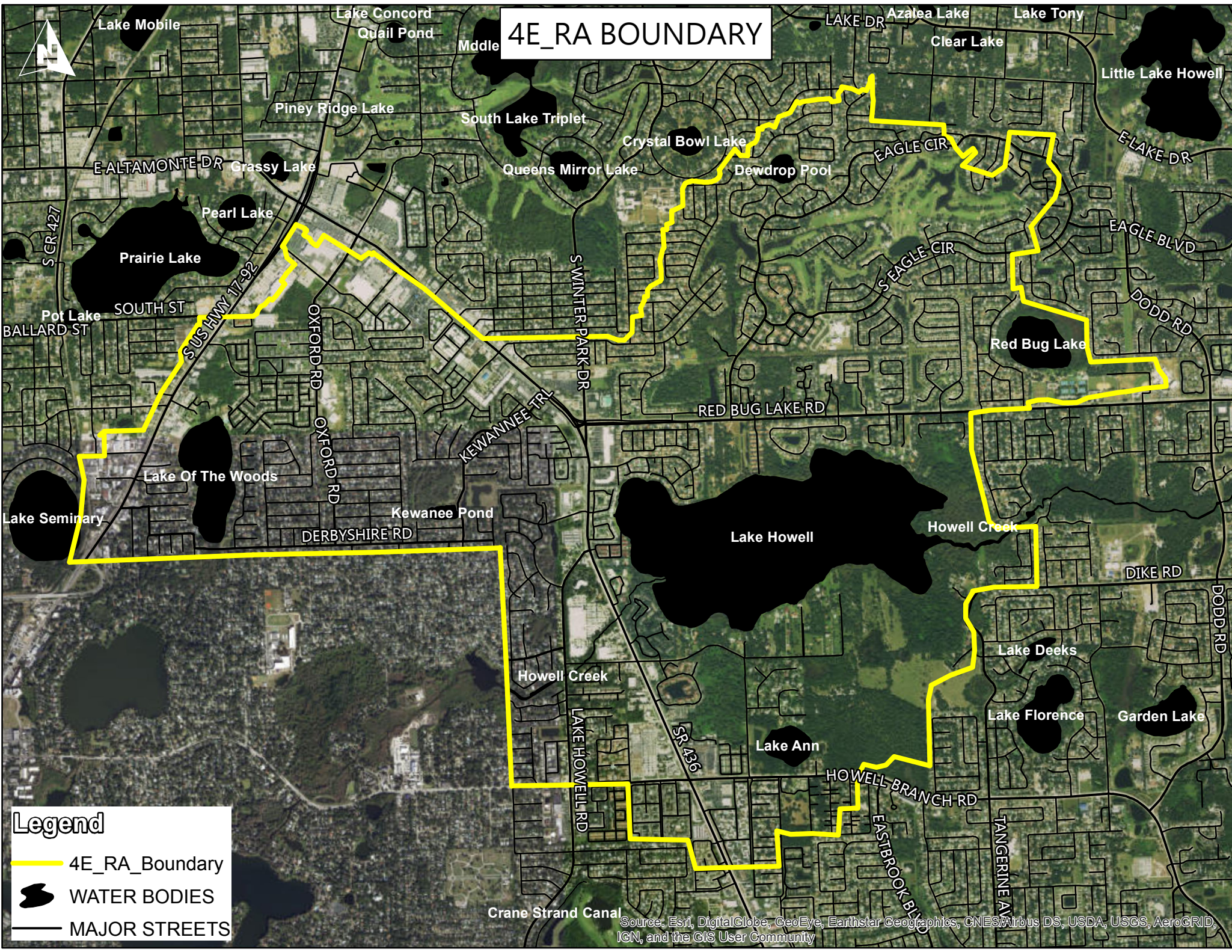
- 4E\_RA\_Boundary
- CountyBoundary
- Residential Low Density
- Residential Medium Density
- Residential High Density
- Commercial and Services
- Industrial
- Extractive
- Institutional
- Recreational
- Open Land
- Cropland and Pastureland
- Tree Crops
- Feeding Operations
- Nurseries and Vineyards
- Specialty Farms
- Other Open Lands <Rural>
- Herbaceous
- Shrub and Brushland
- Mixed Rangeland
- Upland Coniferous Forests
- Upland Hardwood Forests
- Upland Mixed Forests
- Tree Plantations
- Streams and Waterways
- Lakes
- Reservoirs
- Bays and Estuaries
- Major Springs
- Slough Waters
- Oceans Seas and Gulfs
- Wetland Hardwood Forests
- Wetland Coniferous Forests
- Wetland Forested Mixed
- Vegetated Non-Forested Wetlands
- Non-Vegetated
- Salt Flats
- Beaches Other Than Swimming Beaches
- Sand Other Than Beaches
- Exposed Rock
- Disturbed Lands
- Riverine Sandbars
- Transportation
- Communications
- Utilities



## **Attachment #A2**

### **4E\_RA Boundary**





# 4E\_RA BOUNDARY

**Legend**

- 4E\_RA\_Boundary
- WATER BODIES
- MAJOR STREETS



## **Attachment #A3**

### **Interlocal Agreement for TMDL Activities**

INTERLOCAL AGREEMENT FOR TOTAL  
MAXIMUM DAILY LOAD (TMDL) ACTIVITIES

THIS AGREEMENT, made and entered into this 6 day of July, 2007, by and between **SEMINOLE COUNTY**, a political subdivision of the State of Florida, whose address is Seminole County Services Building, 1101 E. First Street, Sanford, Florida 32771, hereinafter referred to as "COUNTY", the **CITY OF ALTAMONTE SPRINGS**, a Florida municipal corporation, whose address is 225 Newburyport Avenue, Altamonte Springs, Florida 32701, hereinafter referred to as "ALTAMONTE SPRINGS", the **CITY OF CASSELBERRY**, a Florida municipal corporation, whose address is 95 Triplet Lake Drive, Casselberry, Florida 32707, hereinafter referred to as "CASSELBERRY", the **CITY OF LAKE MARY**, a Florida municipal corporation, whose address is 100 N. Country Club Road, Lake Mary, Florida 32746, hereinafter referred to as "LAKE MARY", the **CITY OF LONGWOOD**, a Florida municipal corporation, whose address is 175 W. Warren Avenue, Longwood, Florida, 32765, hereinafter referred to as the "LONGWOOD", the **CITY OF SANFORD**, a Florida municipal corporation, whose address is 300 N. Park Avenue, Sanford, Florida 32771, hereinafter referred to as "SANFORD", the **CITY OF OVIEDO**, a Florida municipal corporation, whose address is 400 Alexandria Boulevard, Oviedo, Florida 32765, hereinafter referred to as "OVIEDO", and the **CITY OF WINTER SPRINGS**, a Florida municipal corporation, whose address is 1126 E. State Road 434, Winter Springs, Florida 32708, hereinafter referred to as "WINTER SPRINGS".

W I T N E S S E T H:

WHEREAS, State's TMDL program requirement became effective in the Spring of 2006 and will be reflected in the National Pollutant



Discharge Elimination System (NPDES) permit requirements beginning in 2007; and

**WHEREAS**, meeting the requirements of the State TMDL program will require local governmental agencies to cooperate extensively on TMDL-related studies and projects; and

**WHEREAS**, such intergovernmental cooperation will result in more efficient, cost-effective TMDL compliance for each governmental agency, and less duplication of efforts overall; and

**WHEREAS**, entering into a cooperative interlocal governing TMDL activities will accomplish the following:

- Streamline cooperation on TMDL related issues without superseding the authority of any individual governmental entity.
- Increase the effectiveness of Seminole County local governments in seeking and obtaining matching funds from regional, State and Federal sources for implementation of TMDL-related activities.
- Allow local governments to share resources for development of effective programs for TMDL, NPDES, lake management, basin studies and educational outreach,

**NOW, THEREFORE**, in consideration of the premises and covenants of each party for the benefit of the others set forth below, the parties hereto agree as follows:

1. There is hereby established by the parties the Technical Coordination Group, hereinafter referred to as the "TCG", consisting of the following members, by position (or designee) in the respective jurisdictions:

- Principal Engineer - Stormwater Programs (COUNTY)
- Compliance Coordinator (ALTAMONTE SPRINGS)
- City Engineer (CASSELBERRY)
- Stormwater Professional Engineer (LAKE MARY)
- Community Development Coordinator (LONGWOOD)
- City Engineer (OVIEDO)
- City Engineer (SANFORD)
- City Engineer (WINTER SPRINGS)

2. The TCG shall meet as needed to jointly review TMDL-related activities in Seminole County and make recommendations to the governing boards of Seminole County governmental entities with respect to such activities and projects designed to meet TMDL-related needs. The TCG responsibilities shall include, but not be limited to, the following:

- (a) For ongoing activities:
  - Identify study priorities.
  - Identify jurisdictions that should participate in each.
  - Obtain concurrence from each jurisdiction's representative.
  - Develop and recommend a cost sharing formula for each activity.
  - Develop total TMDL activity-related expenditures for each jurisdiction.
  - Develop/approve the scope for each joint study.



- Participate, where applicable and permitted, in selection of consultants and contractors for approved project.

(b) For capital projects:

- Identify priorities.
- Identify jurisdictions that should participate in each.
- Obtain concurrence from each jurisdiction.
- Develop and recommend agreed upon cost sharing formula specific to each project, addressing financing, contribution and payment issues and procedures to be used for processing and payment of change orders. (Jurisdictions participating in a project would have to agree to the formula for that project.)

- Seek matching funds from regional, State or Federal sources.

- Develop total TMDL project-related expenditures for each jurisdiction.

- Develop/approve scope.
- Seek board approvals.
- Participate, where applicable and permitted, in selection of consultants and contractors for approved project.

(c) The TCG shall also, on an annual basis or as deemed necessary by participating governmental entities, present reports on activities, projects, and progress with TMDL-related goals. Said reports shall contain TCG recommendations with respect to TMDL-related

projects requiring approval of the participating governmental entities.

3. Each party to this Agreement agrees that, upon its approval of, and award of, funds for any TCG recommended project, this Interlocal Agreement shall serve as authorization for the participating jurisdictions to proceed with that project without further written agreement between the parties, unless the parties deem it in their best interest with respect to the project to reduce additional issues to formal agreement.

4. Each party to this Agreement shall have the right of access at reasonable times to observe and inspect all the other parties books, records and other information of whatsoever nature related to TMDL activities and the work of the TCG.

5. Each party to this Agreement shall retain its right to approve, disapprove, or modify its participation in any TCG recommended project or activity and shall further retain its right to decide the amount of its financial participation, if any, in such projects and activities.

6. Any party may terminate its participation in this Agreement by giving sixty (60) days written notice of its intention to do so to the other parties. Upon a party's withdrawal from participation in this Agreement, its representation on the TCG shall also be withdrawn.

7. This Agreement is solely for the benefit of the formal parties herein and no right or cause of action shall accrue upon, or by reason hereof, to or for the benefit of any third party not a formal party thereto.



8. This Agreement shall be binding on the parties hereto and their representatives and successors. Neither party shall assign this Agreement or the rights and obligations thereof to any other party.

9. This Agreement and the provisions contained herein shall be construed, controlled and interpreted according to the laws of the State of Florida.

10. Any provision of this Agreement which is prohibited or unenforceable under any laws shall be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof, provided the rights and obligations of the parties hereto are not materially prejudiced and the intentions of the parties can continue to be effected.

11. Any notice to be given by any party to this Agreement to the other parties shall be sent by either hand delivery, registered or certified mail to the respective addresses shown below. Either party may change its notice address by giving proper written notice to the others as provided herein.

**For COUNTY:**

County Manager  
1101 E. First Street  
Sanford, FL 32771

**For ALTAMONTE:**

City Manager  
225 Newburyport Avenue  
Altamonte Springs, FL 32701

**For CASSELBERRY:**

City Manager  
95 Lake Triplet Drive  
Casselberry, FL 32707

**For LAKE MARY:**

City Manager  
100 N. Country Club Road  
Lake Mary, FL 32746

**For LONGWOOD:**

City Manager  
175 W. Warren Avenue  
Longwood, FL 32750

**For OVIEDO:**

City Manager  
400 Alexandria Boulevard  
Oviedo, FL 32765

**For SANFORD:**

City Manager  
300 N. Park Avenue  
Sanford, FL 32771  
P.O. Box 1788, Sanford, FL 32772-1788

**For WINTER SPRINGS:**

City Manager  
1126 E. S.R. 434  
Winter Springs, FL 32708

12. This Agreement shall become effective upon its execution by all the parties and shall remain in effect until mutually terminated by the parties.

13. This Agreement may be executed simultaneously and in any number of counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same instrument. The headings herein set out are for convenience and reference only and shall not be deemed a part of this Agreement.

**IN WITNESS WHEREOF**, the parties hereto have made and executed this Agreement for the purposes stated herein.



ATTEST:

Patsy Wainwright  
PATSY WAINWRIGHT, City Clerk

Approved as to form and  
legal sufficiency.

Skip Fowler  
SKIP FOWLER, City Attorney

CITY OF ALTAMONTE SPRINGS

By: Russel Hauck  
RUSSEL HAUCK, Mayor

Date: 1-2-07



ATTEST:

Thelma McPherson  
THELMA MCPHERSON, City Clerk

Approved as to form and  
legal sufficiency.

Catherine Reishmann  
CATHERINE REISHMANN, City Attorney

CITY OF CASSELBERRY

By: \_\_\_\_\_  
BOB GOFF, Mayor

Date: \_\_\_\_\_

ATTEST:

Carol Foster  
CAROL FOSTER, City Clerk

Approved as to form and  
legal sufficiency.

Catherine Reishmann  
CATHERINE REISHMANN, City Attorney

CITY OF LAKE MARY

By: \_\_\_\_\_  
THOMAS C. GREENE, Mayor

Date: \_\_\_\_\_

ATTEST:

CITY OF ALTAMONTE SPRINGS

PATSY WAINWRIGHT, City Clerk

By: RUSSEL HAUCK, Mayor

Approved as to form and  
legal sufficiency.

Date: \_\_\_\_\_

SKIP FOWLER, City Attorney

ATTEST:

CITY OF CASSELBERRY

Thelma McPherson  
THELMA MCPHERSON, City Clerk

By: Bob Goff, Mayor

Approved as to form and  
legal sufficiency.

Date: January 18, 2007

Catherine Reishmann  
CATHERINE REISHMANN, City Attorney

ATTEST:

CITY OF LAKE MARY

CAROL FOSTER, City Clerk

By: THOMAS C. GREENE, Mayor

Approved as to form and  
legal sufficiency.

Date: \_\_\_\_\_

CATHERINE REISHMANN, City Attorney



ATTEST:

CITY OF ALTAMONTE SPRINGS

PATSY WAINWRIGHT, City Clerk

By: RUSSEL HAUCK, Mayor

Approved as to form and  
legal sufficiency.

Date: \_\_\_\_\_

SKIP FOWLER, City Attorney

ATTEST:

CITY OF CASSELBERRY

THELMA MCPHERSON, City Clerk

By: BOB GOFF, Mayor

Approved as to form and  
legal sufficiency.

Date: \_\_\_\_\_

CATHERINE REISHMANN, City Attorney

ATTEST:

CITY OF LAKE MARY

Carol C. Foster  
CAROL FOSTER, City Clerk

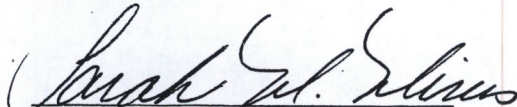
By: THOMAS C. GREENE, Mayor

Approved as to form and  
legal sufficiency.

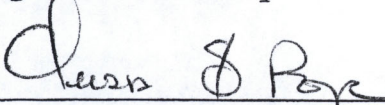
Date: 11-16-06 APPROVED

Cathy Reed  
CATHERINE REISHMANN, City Attorney

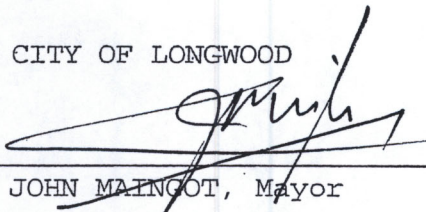
ATTEST:

  
SARAH M. MIRUS, City Clerk

Approved as to form and  
legal sufficiency.

  
Teresa S. Roper, Acting City Attorney

CITY OF LONGWOOD

By:   
JOHN MAINIOT, Mayor

Date: February 8, 2007

ATTEST:

BARBARA BARBOUR, City Clerk

Approved as to form and  
legal sufficiency.

WILLIAM L. COLBERT, City Attorney

CITY OF OVIEDO

By: \_\_\_\_\_  
THOMAS G. WALTERS, Mayor

Date: \_\_\_\_\_

ATTEST:

JANET R. DOUGHERTY, City Clerk

Approved as to form and  
legal sufficiency.

WILLIAM L. COLBERT, City Attorney

CITY OF SANFORD

By: \_\_\_\_\_  
LINDA KUHN, Mayor

Date: \_\_\_\_\_

ATTEST:

CITY OF LONGWOOD

SARAH M. MIRUS, City Clerk

By: JOHN MAINGOT, Mayor

Approved as to form and  
legal sufficiency.

Date: \_\_\_\_\_

RICHARD TAYLOR, City Attorney

ATTEST:

CITY OF OVIEDO

Barbara Barbour  
BARBARA BARBOUR, City Clerk

By: Thomas G. Walters  
THOMAS G. WALTERS, Mayor

Approved as to form and  
legal sufficiency.

Date: 1/8/07

William L. Colbert for  
WILLIAM L. COLBERT, City Attorney

ATTEST:

CITY OF SANFORD

JANET R. DOUGHERTY, City Clerk

By: LINDA KUHN, Mayor

Approved as to form and  
legal sufficiency.

Date: \_\_\_\_\_

WILLIAM L. COLBERT, City Attorney



ATTEST:

CITY OF LONGWOOD

SARAH M. MIRUS, City Clerk

Approved as to form and  
legal sufficiency.

By: JOHN MAINGOT, Mayor

Date: \_\_\_\_\_

RICHARD TAYLOR, City Attorney

ATTEST:

CITY OF OVIEDO

BARBARA BARBOUR, City Clerk

Approved as to form and  
legal sufficiency.

By: THOMAS G. WALTERS, Mayor

Date: \_\_\_\_\_

WILLIAM L. COLBERT, City Attorney

ATTEST:

CITY OF SANFORD

Janet R. Dougherty  
JANET R. DOUGHERTY, City Clerk

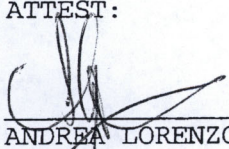
Approved as to form and  
legal sufficiency.

By: Linda Kuhn  
LINDA KUHN, Mayor

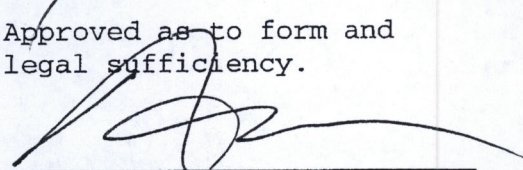
Date: January 22, 2007

William L. Colbert for  
WILLIAM L. COLBERT, City Attorney

ATTEST:

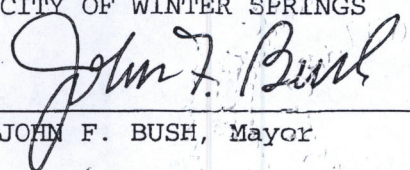
  
ANDREA LORENZO-LUACES, City Clerk

Approved as to form and  
legal sufficiency.

  
ANTHONY A. GARGANESE, City Attorney

CITY OF WINTER SPRINGS

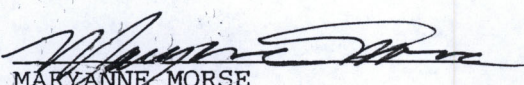
By:

  
JOHN F. BUSH, Mayor

Date:

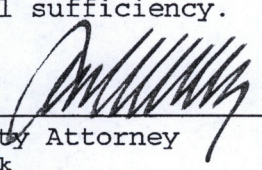
4/16/07

ATTEST:

  
MARYANNE MORSE  
Clerk to the Board of  
County Commissioners of  
Seminole County, Florida.

For the use and reliance  
of Seminole County only.

Approved as to form and  
legal sufficiency.

  
County Attorney

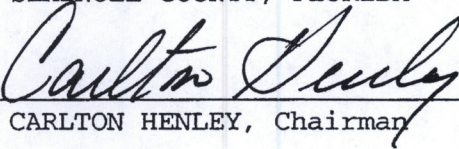
AC/lpk

10/24/06

Interlocal all municipalities-TMDL

BOARD OF COUNTY COMMISSIONERS  
SEMINOLE COUNTY, FLORIDA

By:

  
CARLTON HENLEY, Chairman

Date:

7-6-07

As authorized for execution  
by the Board of County Commissioners  
at their June 26, 2007  
regular meeting.

## **Attachment #A4**

### **Lake Howell Nutrient Reduction Plan**

Lake Howell Nutrient Reduction Plan								
Existing or Proposed Management Activities (structural and non-structural)								
Project Number	Project Name	Project Description	Project Type	Treatment Acres	Status	Project Start Date	Estimated TN Reduction (lbs/yr)	Estimated TP Reduction (lbs/yr)
SC-01	Cassel Creek RSF	RSF to treat water in upstream subbasin	wet detention pond	420	completed	9/1/2012	829	346
SC-02	Lake Ann Outfall	Baffle Box and pipe replacement	stormwater retrofit	289	completed	4/1/2001	no estimate found	10.8
SC-03	Red Bug Lake Road RSF (aka Deer Run)	RSF to treat water in upstream subbain	wet detention pond	1018	completed	1/1/2010	1226	93
SC-04	Lake Howell Road Pond Retrofit	retrofit of old FDOT pond now under county jurisdiction that drains Howell Branch Road	wet detention pond	27	completed	2007	no estimate found	7.1
SC-05	Cassel Creek Retrofit	retrofit the outfall structure and weir of the RSF in order to maximize treatment efficiencies	wet detention pond	420	proposed	unknown	110	0
SC-06	Lake of the Woods Development Baffle Boxes	Multiple locations idntified including Birchwood-Cedarwood, Spartan Dr., and Lakewood Cir.,	baffle box	229	proposed	1/1/2019	no estimate found	44.5
SC-07	Lake of the Woods Retention Pond	Regional stormwater facility constructed in Howell Creek Basin (Hewett Ln and East Blvd ditch)	wet detention pond	150	proposed	1/1/2019	no estimate found	19.2
SC-08	Howell Creek Erosion Control	Installation of gabion baskets/reno mattresses/plantings/rip rap at Red Bug Lake Rd. This project will minimize the transport of sediment.	gabion baskets/erosion control	21	currently under construction	3/1/2017	0.3	0
SC-09	Howell Creek Nutrient Removal Pilot Project	A 3-chambered gravity fed system that will contain 3 unique biosoption active medias. This pilot project will treat baseflow and potentially a portion of storm flow from upstream nutrient sources.	bio-sorption activated media (BAM)	13184	proposed	8/1/2018	98	7
SC-10	Street Sweeping	Street sweeping within RA boundary; Collector and arterial roads (9.04 miles) swept 3x/ yr and subdivision roads (38.9 miles) swept 2x/yr	street sweeping	4576	ongoing	ongoing	39	25
SC-11	Education Efforts	FFL, ordinances, PSAs, pamphlets, presentation, website, illicit discharge program	education	4576	ongoing	ongoing	938	72
SC-12	Existing BMPs	BMPs in place at time of TMDL	BMPs	4576	completed	ongoing	5123	1064
SC-13	Lake Howell Restoration Events	In-lake revegetation of submersed and emergent plants by residents and volunteers; 8 events held to date, 19,660 plants planted	In-Lake Restoration	391 (acreage of lake)	ongoing			
SC-14	Red Bug Lake Park Shoreline Restoration	In-lake revegetation of emergent plants by volunteers; 3 planting events held to date	In-Lake Restoration	29 (acreage of lake)	completed			
SC-15	Lake Kewannee Restoration Event	In-lake revegetation of submersed and emergent plants by County contractor; 3 events held to date	In-Lake Restoration	4.27 (acreage of lake)	completed			
SC-16	Lake of the Woods Restoration Events	In-lake revegetation of submersed and emergent plants by residents and volunteers; 3 events held to date	In-Lake Restoration	51 (acreage of lake)	completed			
SC-17	Red Bug RSF Planting	Establishment of emergent and submersed vegetation	stormwater retrofit	1018	completed			
SC-18	Cassel Creek RSF Planting	Establishment of emergent vegetation in Cassel Creek	stormwater retrofit	420	completed			

## **Attachment #A5**

### **Submerged Aquatic Vegetation 2010**



# Submerged Aquatic Vegetation 2010 -- 0.73 acres of eelgrass

## Lake Howell Submerged Aquatic Vegetation Mapping

Legend  
Submerged Vegetation Type  
VEGTYPE

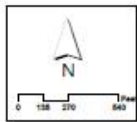
- EEL GRASS
- BABYS TEARS
- ELEOCHARIS
- HVA
- NITELLA

Vegetation Type	Area (Sq Ft)
EEL GRASS	31570
BABYS TEARS	789
ELEOCHARIS	12
HVA	9
NITELLA	1

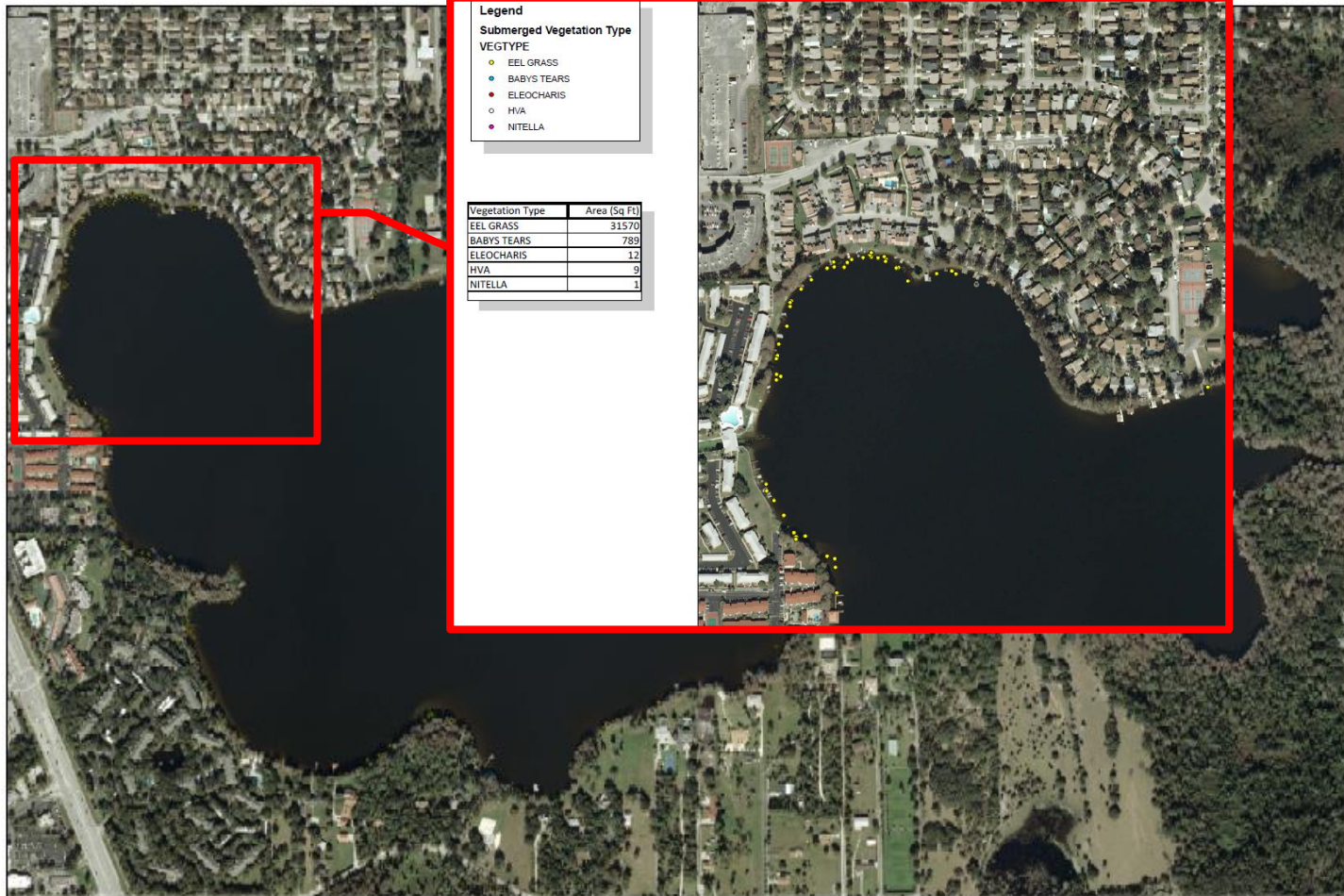
Legend  
Submerged Vegetation Type  
VEGTYPE

- EEL GRASS
- BABYS TEARS
- ELEOCHARIS
- HVA
- NITELLA

Vegetation Type	Area (Sq Ft)
EEL GRASS	31570
BABYS TEARS	789
ELEOCHARIS	12
HVA	9
NITELLA	1



Sevier County Public Works Department  
This map prepared by: William P. Taylor, P.E.  
Map Mapping Date: November 2010  
© 2010 Sevier County Public Works Department

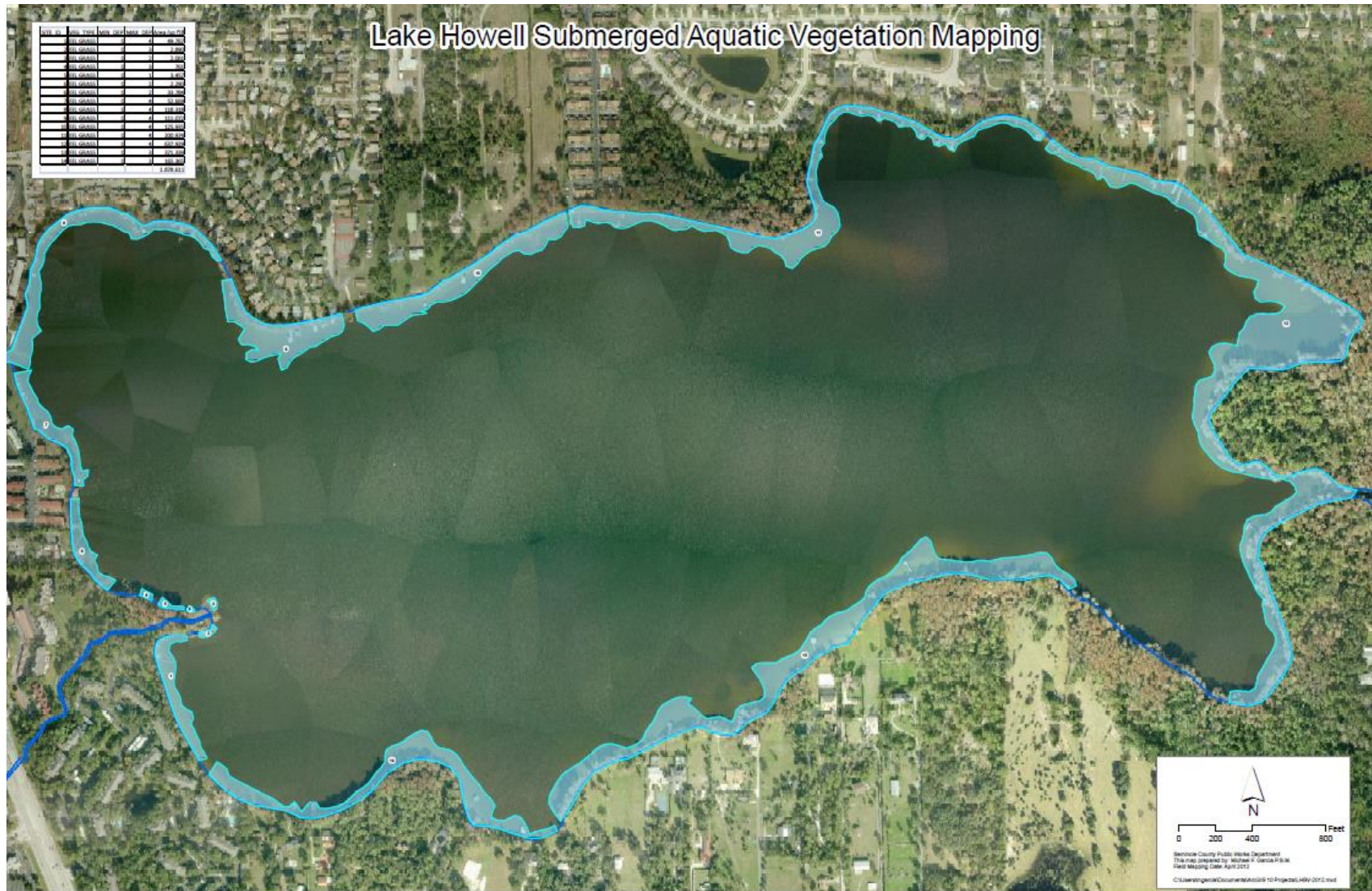


## **Attachment #A6**

### **Submerged Aquatic Vegetation 2012**



## Submerged Aquatic Vegetation 2012 -- 43 acres of eelgrass

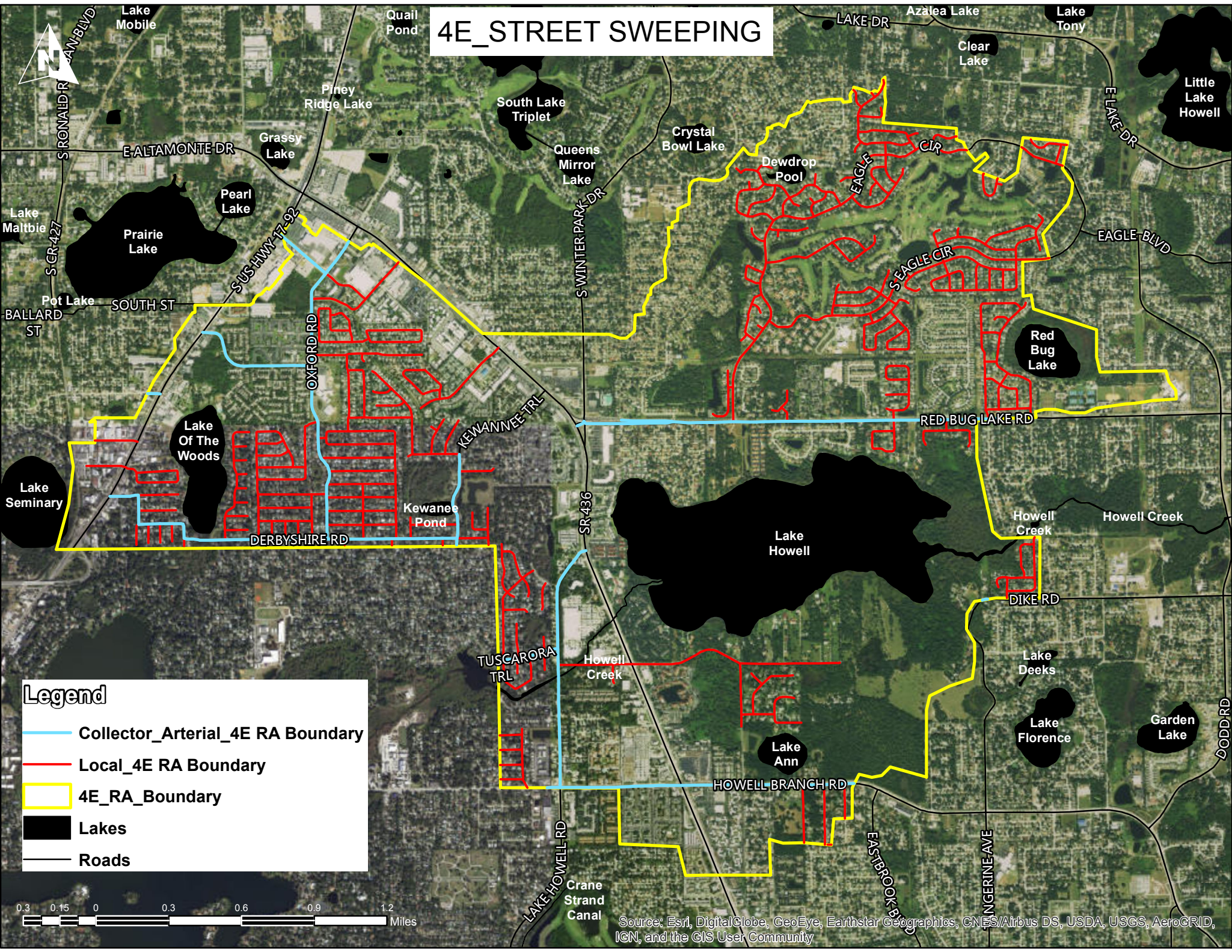


## **Attachment #A7**

### **4E\_Street Sweeping**



# 4E\_STREET SWEEPING



**Legend**

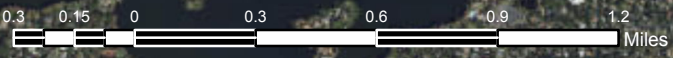
Collector\_Arterial\_4E RA Boundary

Local\_4E RA Boundary

4E\_RA\_Boundary

Lakes

Roads



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



## **Attachment #A8**

### **Florida Friendly Fertilizer Use Ordinance**

**AN ORDINANCE AMENDING CHAPTER 270, "WATER AND SEWER", SEMINOLE COUNTY CODE, BY ADDING PART 12, "PROPER USE OF FERTILIZERS"; REGULATING THE PROPER USE OF FERTILIZERS BY ANY APPLICATOR; PROVIDING LEGISLATIVE FINDINGS; PROVIDING DEFINITIONS; PROVIDING FOR APPLICABILITY WITHIN SEMINOLE COUNTY; ESTABLISHING A PROHIBITED APPLICATION PERIOD; SPECIFYING ALLOWABLE FERTILIZER APPLICATION RATES AND METHODS, FERTILIZER-FREE ZONES, LOW MAINTENANCE ZONES, AND EXEMPTIONS; REQUIRING THE USE OF BEST MANAGEMENT PRACTICES WHICH PROVIDE SPECIFIC MANAGEMENT GUIDELINES TO MINIMIZE NEGATIVE SECONDARY AND CUMULATIVE ENVIRONMENTAL EFFECTS ASSOCIATED WITH THE MISUSE OF FERTILIZERS WHICH HAVE BEEN OBSERVED IN AND ON SEMINOLE COUNTY'S NATURAL AND CONSTRUCTED STORMWATER CONVEYANCES, RIVERS, CREEKS, CANALS, SPRINGS, LAKES AND OTHER WATERBODIES; REQUIRING PROPER TRAINING OF COMMERCIAL AND INSTITUTIONAL FERTILIZER APPLICATORS; ESTABLISHING TRAINING AND LICENSING REQUIREMENTS; PROVIDING FOR ENFORCEMENT AND PENALTIES; AMENDING CHAPTER 53, "CODE ENFORCEMENT", SEMINOLE COUNTY CODE, TO PROVIDE FOR PENALTIES; PROVIDING FOR CODIFICATION IN THE SEMINOLE COUNTY CODE; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS**, pursuant to 33 U.S.C. § 1313(d) (2016) of the Federal Clean Water Act and the resulting Florida Impaired Waters Rule, Chapter 62-303, Florida Administrative Code (2016), the Florida Department of Environmental Protection ("FDEP") has classified specific waterbodies in Seminole County as "impaired" as a result of the presence of excess nutrients; and

**WHEREAS**, the Seminole County National Pollutant Discharge (NPDES) Municipal Separate Storm Sewer System (MS4) Permit No. FLS000038, issued by the Florida Department of Environmental Protection under authority delegated to it by the United States Environmental Protection Agency, mandates the adoption of a fertilizer ordinance that includes all of the requirements set forth in the Florida Department of Environmental Protection's Model Ordinance



for Florida-Friendly Fertilizer Use on Urban Landscapes pursuant to Section 403.9337, Florida Statutes (2016), by December 31, 2013 (the "Model Ordinance"); and

**WHEREAS**, the Florida Department of Environmental Protection has informally extended the time for Seminole County to adopt the subject ordinance with the understanding that Seminole County will adopt the ordinance as soon as practical; and

**WHEREAS**, it is the intent of the Board of County Commissioners to adopt the instant Ordinance consistent with the terms of the Model Ordinance and the principle purposes of the instant Ordinance are to receive credits and otherwise comply with all applicable Total Maximum Daily Loads (TMDLs) and Basin Management Action Plans (BMAPs),

**NOW THEREFORE BE IT ORDAINED BY THE BOARD OF COUNTY COMMISSIONERS OF SEMINOLE COUNTY, FLORIDA:**

**Section 1.** Chapter 270, "Water and Sewer", Seminole County Code is hereby amended by the addition of Part 12, "Proper Use of Fertilizers", which reads as follows:

**PART 12. PROPER USE OF FERTILIZERS**

**Sec. 270.461. Findings.** As a result of impairment to surface waters caused by excessive nutrients, and as a result of increasing levels of nitrogen in the surface and ground water within the aquifers and springs, the Board of County Commissioners hereby determines that the use of Fertilizers creates a risk to contributing to adverse effects on surface and ground water. Accordingly, the county commission hereby finds that management measures contained in the most recent edition of the *Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries* are required.

**Sec. 270.462. Purpose and Intent.** This Part 12: (a) regulates the proper use of Fertilizers by any Applicator; (b) requires proper training of commercial and Institutional Fertilizer Applicators; (c) establishes training and licensing requirements; (d) establishes a Prohibited



Application Period; and (e) specifies allowable Fertilizer Application rates and methods, Fertilizer free zones, Low Maintenance Zones, and exemptions. This Part 12 requires the use of Best Management Practices, which provide specific management guidelines to minimize negative secondary and cumulative environmental effects associated with the misuse of Fertilizers. These secondary and cumulative effects have been observed in and on natural and constructed stormwater conveyances, rivers, creeks, canals, springs, lakes, and other water bodies. Collectively, these water bodies are an asset critical to the environmental, recreational, cultural, and economic well-being of county residents and the health of the public in general. Overgrowth of algae and vegetation hinder the effectiveness of flood attenuation provided by natural and constructed stormwater conveyances. Regulation of nutrients, including both nitrogen and phosphorus contained in Fertilizer, will help improve and maintain water and habitat quality.

**Sec. 270.463. Definitions.** For the purposes of this Part 12, the following terms have the meanings set forth in this Section. Words not defined in this Part 12 have the meaning as provided in other Sections of this Code, and otherwise have the meaning provided by common and ordinary use:

*Application or Apply.* The actual physical deposit of Fertilizer to Turf, Landscape Plants, or both.

*Applicator.* Any Person who Applies Fertilizer on Turf, Landscape Plants, or both.

*Approved Best Management Practices Training Program.* A training program approved pursuant to Section 403.9338, *Florida Statutes* (2016), as this statute may be amended from time to time, or any more stringent requirements set forth in this article that includes the most current version of the Florida Department of Environmental Protection's *Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries*, as this document may be amended from time to time.

*Best Management Practices.* Turf and landscape practices or a combination of practices based on research, field-testing, and expert review, determined to be the most effective and practicable on-location means, including economic and technological considerations, for improving water quality, conserving water supplies and protecting natural resources.

*Code Enforcement Officer, Official or Inspector.* Any designated employee or agent who has the duty to enforce codes and ordinances.

*Commercial Fertilizer Applicator.* Any Person who Applies Fertilizer for payment or other consideration to property not owned by the Person or firm Applying the Fertilizer or the employer of the Applicator, except as provided in Section 482.1562(9), *Florida Statutes* (2016), as this statute may be amended from time to time.

*Fertilize.* The act of Applying Fertilizer to Turf, specialized Turf, or Landscape Plants.

*Fertilizer.* Any substance or mixture of substances that contains one or more recognized plant nutrients and promotes plant growth, or controls soil acidity or alkalinity, or provides other soil enrichment, or provides other corrective measures to the soil. *Fertilizer* does not include unmanipulated peat or compost that make no claims as described in the preceding sentence.

*Guaranteed Analysis.* The percentage of plant nutrients or measures of neutralizing capability claimed to be present in a Fertilizer.

*Institutional Fertilizer Applicator.* Any Person, other than a private, non-commercial or a Commercial Fertilizer Applicator (unless such definitions also apply under the circumstances), that Applies Fertilizer for the purpose of maintaining Turf, Landscape Plants, or both. *Institutional Fertilizer Applicators* include, but are not limited to, owners, managers or employees of public lands, schools, parks, religious institutions, utilities, industrial, or business sites and any residential properties maintained in condominium or other form of common ownership.

*Landscape Plant.* Any native or exotic tree, shrub, or groundcover (excluding Turf).

Low Maintenance Zone. An area a minimum of ten (10) feet wide adjacent to water courses that is planted and managed in order to minimize the need for Fertilization, watering, mowing, and related activities.

Person. Any natural Person, business, corporation, limited liability company, partnership, limited partnership, association, club, organization, or any other group of people acting as an organized entity.

Prohibited Application Period. The time period during which a Flood Watch or Warning, or a Tropical Storm Watch or Warning, or a Hurricane Watch or Warning is in effect for any portion of the County, issued by the National Weather Service, or if heavy rain, as defined by the World Meteorological Organization as rainfall greater than or equal to two (2) inches in a twenty-four (24) hour period, is likely.

Reclaimed Water. A high quality alternative water source that has received at least secondary treatment and is reused after being discharged from a domestic wastewater treatment facility. Moreover, there are some constituents, such as nitrogen and phosphorus found in recycled water. These constituents are beneficial for plant growth, and will serve as an additional “Fertilizing” source.

Saturated Soil. A soil in which the voids are filled with water. Saturation does not require flow. For the purposes of this Part 12, soils are considered saturated if standing water is present or the pressure of a Person standing on the soil causes the release of free water.

Slow Release, Controlled Release, Timed Release, Slowly Available, or Water Insoluble Nitrogen. Nitrogen in a form that delays its availability for plant uptake and use after Application or that extends its availability to the plant longer than a reference rapid or quick release product.

Turf, Sod, or Lawn. A piece of grass-covered soil held together by the roots of the grass.

**Sec. 270.464. Applicability.** This Part 12 applies to and regulates any and all Applicators of Fertilizer and areas of Application of Fertilizer within the unincorporated areas of the County, unless such Applicator is specifically exempted by the terms of this Part 12. This Part 12 operates prospectively only, and does not impair any existing contracts

**Sec. 270.465. Timing of Fertilizer Application.**

(a) No Applicator may Apply Fertilizers containing nitrogen, phosphorus, or both to Turf, Landscape Plants, or both during the Prohibited Application Period, or to Saturated Soils.

(b) Fertilizer containing nitrogen or phosphorus may not be Applied before seeding or sodding a site, and may not be Applied for the first thirty (30) days after seeding or sodding, except when hydro-seeding for temporary or permanent erosion control in an emergency situation, or in accordance with an adopted stormwater pollution prevention plan for that site.

(c) Fertilizer containing nitrogen or phosphorus may not be Applied to Turf or Landscape Plants from June 1 through September 30 of each year.

**Sec. 270.466. Fertilizer Free Zones.** Fertilizer may not be Applied within fifteen (15) feet of any pond, stream, watercourse, lake, canal, or wetland as defined by the Florida Department of Environmental Protection Rule 62-340, *Florida Administrative Code* (2016), as this regulation may be amended from time to time, or from the top of a seawall. Newly planted Turf, Landscape Plants, or both may be Fertilized in this zone only for a sixty (60) day period beginning thirty (30) days after planting if needed to allow the plants to become well established. Caution must be used to prevent direct deposition of nutrients into the water.

**Sec. 270.467. Low Maintenance Zones.** A voluntary ten (10) foot Low Maintenance Zone is strongly recommended, but not mandated, from any pond, stream, water course, lake, wetland, or from the top of a seawall. A swale/berm system is recommended for installation at the landward edge of this Low Maintenance Zone to capture and filter runoff. No mowed or cut



vegetative material may be deposited or left remaining in this zone or deposited in the water. Care must be taken to prevent the over-spray of aquatic weed products in this zone.

**Sec. 270.468. Fertilizer Content and Application Rates.**

(a) Fertilizers Applied to Turf must be Applied in accordance with requirements and directions provided by Rule 5E-1.003, *Florida Administrative Code*, “Fertilizer Label Requirements for Urban Turf, Sports Turf or Lawns” (2016), as this regulation may be amended from time to time.

(b) Nitrogen or phosphorus Fertilizer may not be Applied to Turf or Landscape Plants except as provided in subsection (a) for Turf, or in the University of Florida/IFAS recommendations for Landscape Plants, vegetable gardens, and fruit trees and shrubs, unless a soil or tissue deficiency has been verified by an approved test. Soil and tissue tests for phosphorus are normally done by UF/IFAS or another accredited laboratory. IFAS recommendations are available from the County Extension Service or [http://solutionsforyourlife.ufl.edu/lawn\\_and\\_garden/](http://solutionsforyourlife.ufl.edu/lawn_and_garden/).

(c) No Fertilizer containing phosphorus may be Applied to Turf, Sod, Lawns, or Landscape Plants unless a soil or plant tissue deficiency is verified by a testing methodology approved by the University of Florida, Institute of Food and Agricultural Sciences. If a deficiency is verified, the Application of Fertilizer containing phosphorus must adhere to the rates and directions for the appropriate Region of Florida, as adopted by Florida Administrative Code Rule. This subsection (c) controls over any inconsistent provisions in subsections (a) and (b) above regarding phosphorus.

(d) Fertilizers containing nitrogen Applied to Turf or landscaping plants within Seminole County must contain no less than fifty percent (50%) Slow Release Nitrogen per Guaranteed Analysis Label. If the necessary product is available on the local commercial market on March 1, 2020, then this requirement will increase to no less than sixty-five percent (65%) Slow

Release Nitrogen effective on this date. This subsection (d) controls over any inconsistent provisions in subsections (a) and (b) above regarding nitrogen.

(e) The above referenced Application rates must be reduced appropriately on properties where reclaimed wastewater is used for irrigation based on available nutrients in the Reclaimed Water as reported by the provider of the Reclaimed Water.

**Sec. 270.469. Application Practices.**

(a) Spreader deflector shields are required when Fertilizing by rotary or broadcast spreaders. Deflectors must be positioned such that Fertilizer granules are deflected away from all impervious surfaces, Fertilizer free zones, and water bodies, including wetlands.

(b) Fertilizer must not be Applied, spilled, or otherwise deposited on any impervious surfaces.

(c) Any Fertilizer Applied, spilled, or deposited, either intentionally or accidentally, on any impervious surface must be immediately and completely removed to the greatest extent practicable.

(d) Fertilizer released on an impervious surface must be immediately contained and either legally Applied to Turf or any other legal site, or returned to the original or other appropriate container.

(e) In no case may Fertilizer be washed, swept, or blown off impervious surfaces into stormwater drains, ditches, conveyances, or water bodies.

**Sec. 270.470. Management of Grass Clippings and Vegetative Matter.** In no case may grass clippings, vegetative material, vegetative debris, or any combination of them be washed, swept, or blown off into stormwater drains, ditches, conveyances, water bodies, wetlands, or sidewalks, or roadways. Any material that is accidentally so deposited must be immediately removed to the maximum extent practicable.

**Sec. 270.471. Exemptions.** This Part 12 does not apply to:

- (a) Bona fide farm operations as defined in Section 823.14, *Florida Statutes* (2016), “Florida Right to Farm Act”, as this statute may be amended from time to time.
- (b) Other properties not subject to or covered under subsection (a) above that have pastures used for grazing livestock.
- (c) Any lands used for bona fide scientific research, including, but not limited to, research on the effects of Fertilizer use on stormwater, water quality, agronomics, or horticulture.
- (d) Golf courses, athletic fields and Turf managed for active recreation, whose owners implement Best Management Practices as described in Rule 5E-1.003(2)(d), *Florida Administrative Code*, “Fertilizers Labeled for Sports Turf at Golf Courses, Parks and Athletic Fields” (2016), as this regulation may be amended from time to time.
- (e) Any fruit or vegetable gardens, provided they are not within fifteen (15) feet of any waterbody or wetland.

**Sec. 270.472. Training.**

- (a) All commercial and Institutional Fertilizer Applicators shall abide by and successfully complete the six-hour training program in the *Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries* offered by the Florida Department of Environmental Protection through the University of Florida/IFAS *Florida-Friendly Landscapes* program, or an approved equivalent.
- (b) Private, non-commercial Applicators are encouraged to follow the recommendations of the University of Florida/IFAS *Florida Friendly Landscapes* program when Applying Fertilizers.

**Sec. 270.473. Licensing of Commercial Fertilizer Applicators.**

(a) By September 30, 2014, all Commercial Fertilizer Applicators were required by state law to abide by and successfully complete training and continuing education requirements in the Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries, offered by the Florida Department of Environmental Protection through the University of Florida/IFAS Florida-Friendly Landscapes program, or an approved equivalent program. Commercial Fertilizer Applicators shall provide proof of completion of the program prior to obtaining a new Local Business Tax Receipt for any category of occupation which may Apply any Fertilizer to Turf, Landscape Plants, or both. Commercial Fertilizer Applicators with an existing Local Business Tax receipt for any category of occupation which may Apply any Fertilizer to Turf, Landscape Plants, or both shall provide proof of completion of the program within thirty (30) days after completing the program as required by state law prior to September 30, 2014.

(b) After September 30, 2014, all Commercial Fertilizer Applicators were required by state law to have and carry in their possession at all times when Applying Fertilizer, evidence of certification by the Florida Department of Agriculture and Consumer Services as a Commercial Fertilizer Applicator pursuant to Rule 5E-14.117(18), Florida Administrative Code (2016), as this regulation may be amended from time to time.

(c) By September 30, 2014, all businesses Applying Fertilizer to Turf, Landscape Plants, or both (including but not limited to residential Lawns, commercial properties, and multi-family and condominium properties) were required by state law to ensure that at least one employee has a Florida-Friendly Best Management Practices for Protection of Water Resources by the Green Industries training certificate. Business owners for any category of occupation which may Apply any Fertilizer to Turf, Landscape Plants, or both shall provide proof of completion of the program by at least one employee prior to the business owner obtaining a new Local Business



Tax Receipt. Business owners for any category of occupation which may Apply any Fertilizer to Turf, Landscape Plants, or both with an existing Local Business Tax Receipt shall provide proof of completion of the program by at least one employee within thirty (30) days after completing the program and prior to September 30, 2014.

**Sec. 270.474. Enforcement, Penalties and Legal Proceedings.**

(a) Any Person found to be in violation of the provisions of this Part 12 may be subject to any applicable civil enforcement mechanisms available to the County, including, but not limited to: injunctive relief; referral to the Seminole County Code Enforcement Board or Code Enforcement Magistrate; or issuance of a citation pursuant to Section 53, Part 2, of this Code.

(b) Violations of this Part 12 can present a serious threat to public welfare and are potentially irreparable or irreversible. Therefore, pursuant to Section 53.29(b) of this Code and Section 162.21(3)(b), Florida Statutes (2016), as these provisions may be amended from time to time, a County Code Enforcement Officer may immediately issue a citation to any Person in violation of this Part 12 if the Code Enforcement Officer has reason to believe that the violation presents a serious threat to the public health, safety, or welfare, or if the violation is irreparable or irreversible.

(c) Each incidence of violation under this Part 12 constitutes a separate violation and offence and a separate offence will be deemed committed on each day during or on which a violation occurs or continues.

(d) In addition to the other remedies provided in this Section, the County is authorized to make application in a court of appropriate jurisdiction for an injunction restraining any person from violating, or continuing to violate any provisions of this Part 12. Further, the County may avail itself of any other legal or equitable remedy available to it in the enforcement of any provision of this Part 12 or any provision of any resolution enacted pursuant to this Part 12.

(e) The County may elect to take any or all of the above remedies concurrently, and the pursuit of one does not preclude the pursuit of another.

(f) Any fines or other funds received as a result of enforcement under this Part 12 which are not used for specific purposes set forth in this Part 12, as it may be amended from time to time, must be deposited in the General Fund of the County in the penalty, fine and forfeiture account.

**Section 2.** Chapter 53, "Code Enforcement," of the Seminole County Code is hereby amended to read as follows:

\* \* \*

**Section 53.32. Schedule of Violations and Penalties.**

(a) Civil infractions of County codes and ordinances for which citations may be issued include, but are not limited to:

\* \* \*

**CLASS I**

\* \* \*

(13) S.C.C. Chapter 270, Part 12 Improper Use of Fertilizers.

\* \* \*

**Section 3. Codification.** It is the intention of the Board of County Commissioners that the provisions of this Ordinance will become and be made a part of the Seminole County Code, and that the word "ordinance" may be changed to "section", "article", or other appropriate word or phrase and the sections of this Ordinance may be renumbered or re-lettered to accomplish such intention; providing, however, that the Sections 3, 4 and 5 of this Ordinance will not be codified.

**Section 4. Severability.** If any provision of this Ordinance or the application thereof to any person or circumstance is held invalid or is subject to a state moratorium, it is the intent of the

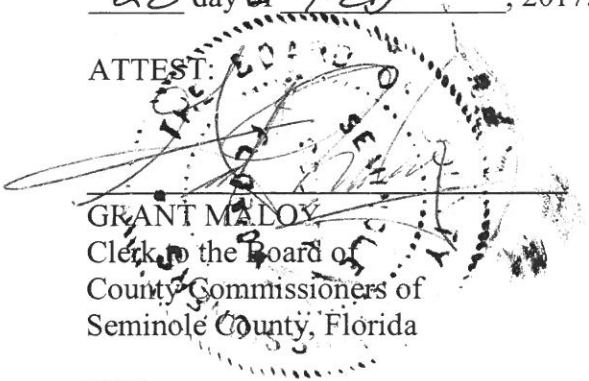
Board of County Commissioners that such invalidity or state moratorium will not affect other provisions or applications of this Ordinance which can be given effect without the invalid provision or application and, to this end, the provisions of this Ordinance are declared severable.

**Section 5. Effective date.** This Ordinance takes effect upon filing a copy of this Ordinance with the Department of State by the Clerk of the Board of County Commissioners; provided, however, no citations, notices to appear, notices of violation or other enforcement procedures may be instituted until October 1, 2017.

**BE IT ORDAINED** by the Board of County Commissioners of Seminole County, this

28<sup>th</sup> day of FEB, 2017.

ATTEST:

  
GRANT MALLOY  
Clerk to the Board of  
County Commissioners of  
Seminole County, Florida

BOARD OF COUNTY COMMISSIONERS  
SEMINOLE COUNTY, FLORIDA

  
JOHN HORAN, Chairman

DGS/sjs  
2/20/17

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## **Attachment #A9**

### **4E\_RA Boundary W/Projects**



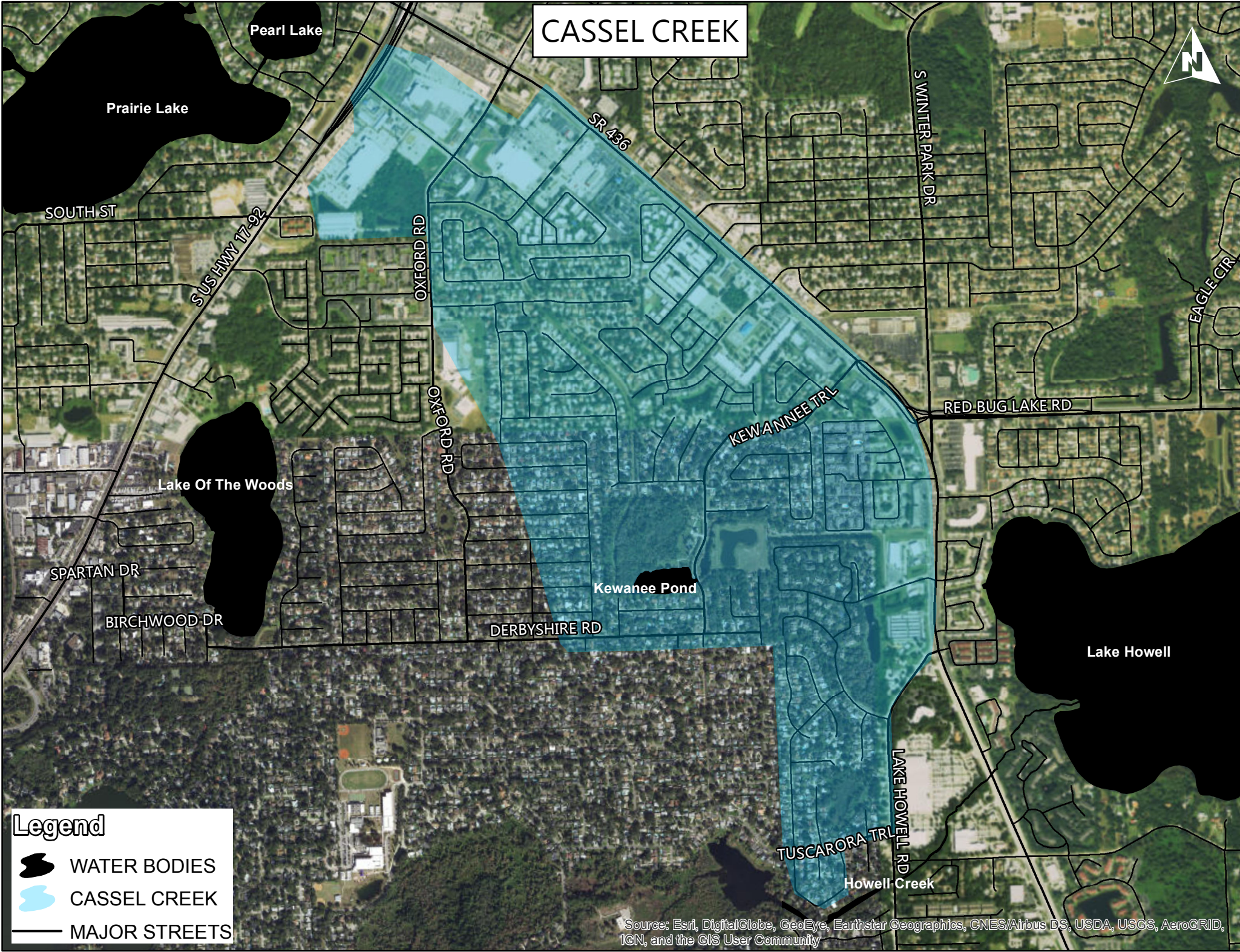




## **Attachment #A10**




### **Cassel Creek RSF**





CASSEL CREEK

**Legend**

-  WATER BODIES
-  CASSEL CREEK
-  MAJOR STREETS

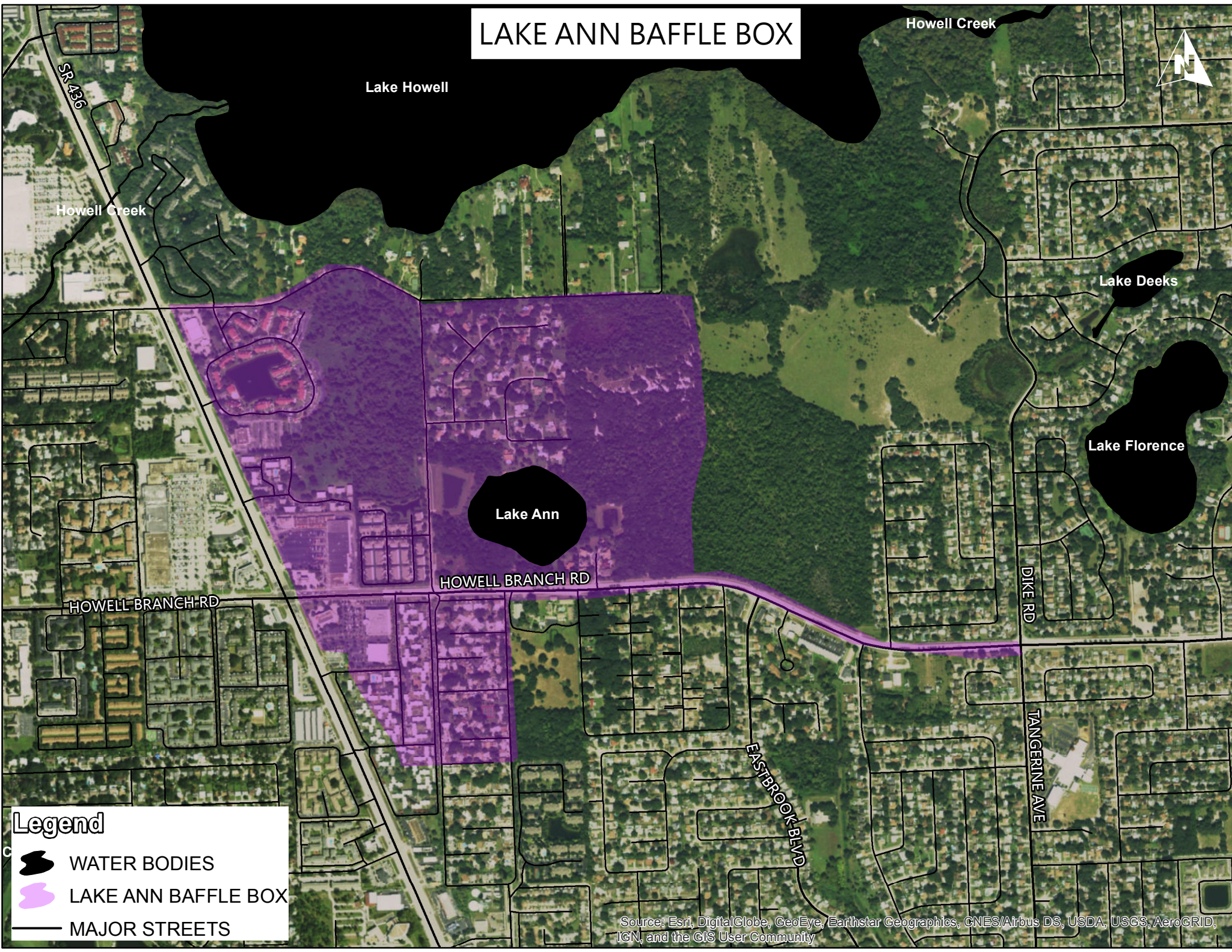


## **Attachment #A11**




### **Lake Ann Baffle Box**



# LAKE ANN BAFFLE BOX



**Legend**

-  WATER BODIES
-  LAKE ANN BAFFLE BOX
-  MAJOR STREETS

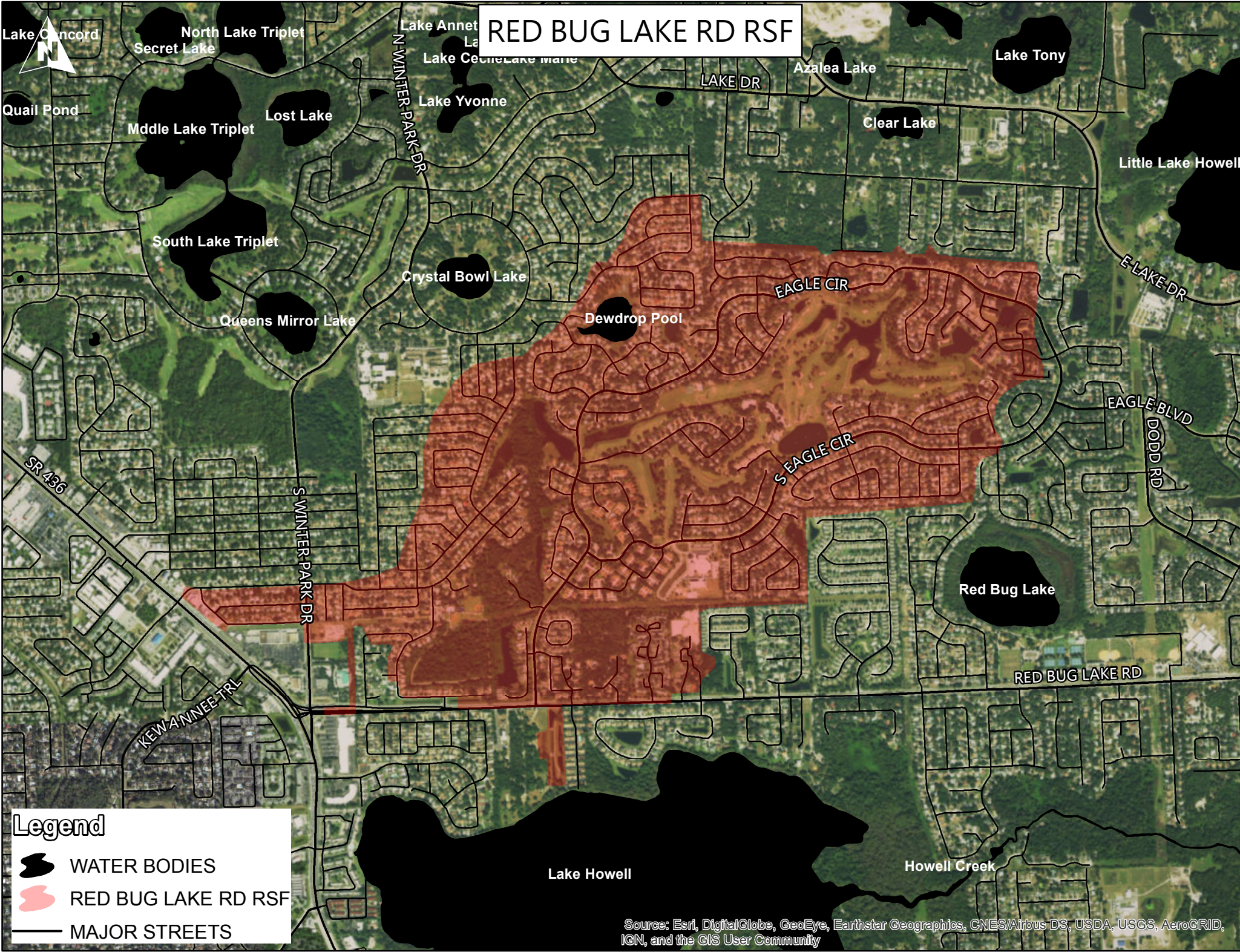
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



## **Attachment #A12**

### **Red Bug Lake Road RSF**







## **Attachment #A13**

### **Lake Howell Rd Stormwater Improvement**



# LAKE HOWELL RD STORMWATER IMPROVEMENT

Lake Howell



TUSCARORA TRLE

Howell Creek

SR 436

HOWELL BRANCH RD

HOWELL BRANCH RD

LAKE HOWELL RD

## Legend



WATER BODIES



LK HOWELL RD STRMWTR IMPROV



MAJOR STREETS

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



## **Attachment #A14**

### **Lake Howell Restoration Events (2007—2016)**



Lake Howell Restoration Events (2007-2016)

Date	Volunteers (# people)	Event Duration (Hours)	Total Volunteer Hours	Invasive Plants Removed (Cu yds)	Amount Planted (# plants)	Planting Notes
6/27/2007	7		21			Lake Howell Restoration
9/19/2009	104		624			Lake Howell Restoration
4/24/2010	89		534			Lake Howell Restoration
4/9/2011	136	4	544	138	3110	1050 Pickerelweed, 1150 Duck Potato, 300 Canna Lily, 350 Blue Iris, 150 Swamp Lily, 90 Bulrush, 20 Cordgrass
4/27/2013	80	4	320	n/a	4080	340 golden canna, 1700 duck potato, 1700 pickerelweed, 170 thalia, 170 soft rush
5/17/2014	68	3	204	8	3950	250 golden canna, 1800 duck potato, 1800 pickerelweed, 50 soft rush, 50 fire flag
5/14/2016	67	4	268	n/a	5320	140 blue flag iris, 2400 duck potato, 2400 pickerelweed, 280 soft rush/spike rush, 100 fire flag
4/1/2017	60	4	240	n/a	3200	600 golden canna, 1500 duck potato, 1000 pickerelweed, 50 bull rush, 50 fire flag
<b>TOTALS</b>	<b>351</b>	<b>15</b>	<b>1336</b>	<b>146</b>	<b>19660</b>	