



Florida Department of Environmental Protection
Division of Environmental Assessment and Restoration

***Lake Jesup Basin Management
Action Plan (BMAP)
Technical Meeting***

April 13, 2017





Agenda

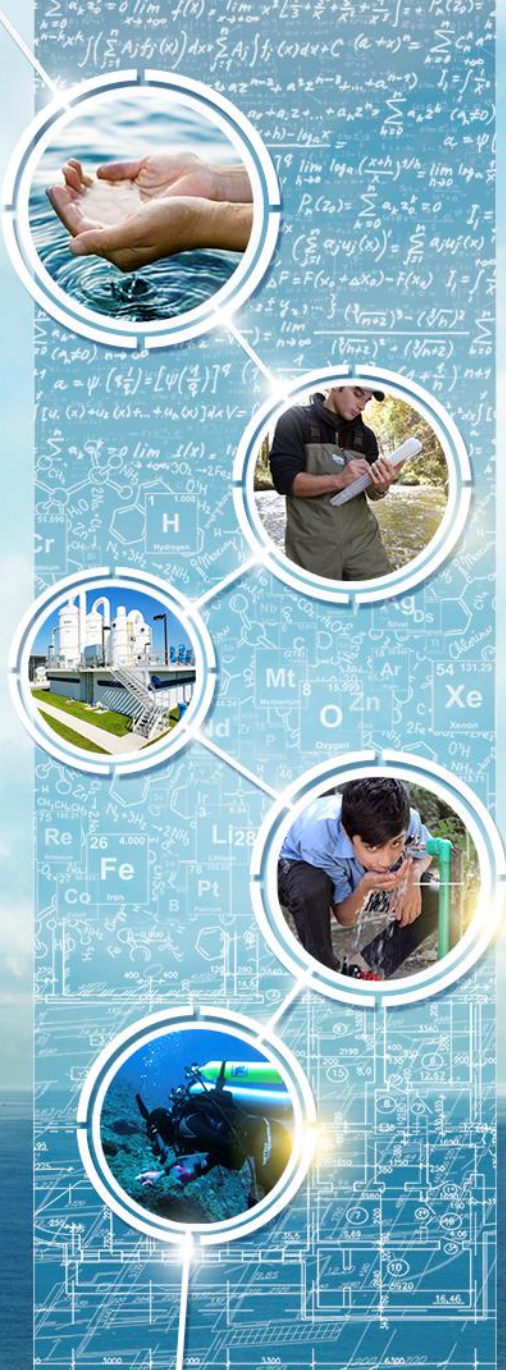
1. Welcome and Introductions
2. Allocations Approach
3. Project Collection and Crediting
 - Educational Crediting
 - Structural Best Management Practice (BMP) Crediting
 - Non-structural BMP Crediting
4. Regional Projects
5. Monitoring Plan
6. Next Steps
7. Comments
8. Adjourn



Lake Jesup Allocations and Project Collection

April 13, 2017

Marcy Frick, REM



Presentation Overview

- Brief update on model results.
- Allocation process and results.
- Project collection and crediting process.



WASP Model Results

Update to WASP Model

- After the last meeting, a code error with the WASP model sediment diagenesis module was identified.
- Code has been corrected and new sediment flux results were determined.
- Final results were provided in an updated Task 4 memo and final model report.

Parameter	Previous Sediment Flux Load (lbs/yr)	Final Sediment Flux Load (lbs/yr)
TN	43,480	83,800
TP	61,820	24,000



Allocations

GIS Allocation File (Task 3 of Modeling Project)

- HSPF model output was used to create a GIS file of watershed loading.
- Includes TN loading, TP loading, and attenuation factors from model.
 - Total loading to lake is the sum of the attenuated loading.
- GIS file was used to determine starting loads and loading from project treatment areas.

Processing Steps

- Started with the GIS allocation file.
- Clipped and erased areas as follows:
 - FDOT roads, swales, and right-of-ways.
 - Turnpike roads, swales, and right of ways.
 - Natural lands: RAN (10), FOR (11), WAT (12), and WET (13).
 - Agricultural lands: PAS (7), AGR (8), and AGT (9).
 - Each city/town to its jurisdictional boundary.
 - Remaining area to each county based on jurisdictional boundaries.
- When land use = 0 in the GIS file, that polygon does not contribute loading to Lake Jesup.
 - The acreage associated with these areas is not included in the total acreage of the associated entity.

Processing Steps - Example



Acres and Starting Loads from the HSPF Model

Entity	Area (Acres)	TN Load (lbs/yr)	TP Load (lbs/yr)
Agriculture	6,257.8	40,598.7	3,075.2
City of Altamonte Springs	235.3	288.7	10.8
City of Casselberry	3,257.0	14,642.8	985.9
City of Lake Mary	2,091.4	4,965.6	325.4
City of Longwood	2,064.2	5,549.7	326.1
City of Maitland	1,229.3	3,200.3	247.1
City of Orlando	3,813.5	282.2	26.1
City of Oviedo	2,504.0	23,308.7	1,865.6
City of Sanford	3,997.4	21,286.3	2,398.8
City of Winter Park	3,980.8	4,616.2	308.8
City of Winter Springs	5,540.2	43,969.0	2,993.5
FDOT District 5	1,030.2	4,644.9	401.5
Orange County	1,679.9	3,647.6	125.6
Seminole County	14,439.2	96,335.6	6,302.8
Town of Eatonville	112.3	95.4	8.7
Turnpike Authority	667.8	5,107.3	465.6
Natural Lands	32,360.4	56,881.0	4,346.7
Total	85,260.7	329,420.0	24,214.2

Allowable Loading to Meet the TMDL

Parameter	Watershed Starting Load (lbs/yr)	TMDL % Reduction	Allowable Watershed Load (lbs/yr)
TN	329,420.0	50%	164,710.0
TP	24,214.2	34%	15,981.4

Load Source	TN Load (lbs/yr)	TP Load (lbs/yr)
TMDL Allowable Load	164,710.0	15,981.4
Natural Areas Load	56,881.0	4,346.7
Anthropogenic Target	107,829.0	11,634.7

Initial Allocations

- Allocations that were previously provided were based on a target load per acre approach.
- This approach was used in the Lakes Harney and Monroe BMAP, as well as several other BMAPs throughout the state.
- Upon further review, based on stakeholder comments, this approach was determined not to be applicable for Lake Jesup:
 - Total required reductions were greater than the TN and TP reductions needed to meet the TMDL.
 - Target load per acre allocation did not factor in attenuation.

Revised Allocations

- Revised allocations were calculated using the previous Lake Jesup BMAP allocation approach.
- Required reductions were assigned to stakeholders based on the percentage of each stakeholder's starting load:
- If a stakeholder is 10% of the anthropogenic starting load, then that stakeholder received 10% of the required reductions.

Relative Contribution of Loading

Entity	TN Load (lbs/yr)	% of Total
Seminole County	96,335.6	35.3%
City of Winter Springs	43,969.0	16.1%
Agriculture	40,598.7	14.9%
City of Oviedo	23,308.7	8.6%
City of Sanford	21,286.3	7.8%
City of Casselberry	14,642.8	5.4%
City of Longwood	5,549.7	2.0%
Turnpike Authority	5,107.3	1.9%
City of Lake Mary	4,965.6	1.8%
FDOT District 5	4,644.9	1.7%
City of Winter Park	4,616.2	1.7%
Orange County	3,647.6	1.3%
City of Maitland	3,200.3	1.2%
City of Altamonte Springs	288.7	0.1%
City of Orlando	282.2	0.1%
Town of Eatonville	95.4	0.0%
Total	272,539.0	100.0%

Entity	TP Load (lbs/yr)	% of Total
Seminole County	6,302.8	31.7%
Agriculture	3,075.2	15.5%
City of Winter Springs	2,993.5	15.1%
City of Sanford	2,398.8	12.1%
City of Oviedo	1,865.6	9.4%
City of Casselberry	985.9	5.0%
Turnpike Authority	465.6	2.3%
FDOT District 5	401.5	2.0%
City of Longwood	326.1	1.6%
City of Lake Mary	325.4	1.6%
City of Winter Park	308.8	1.6%
City of Maitland	247.1	1.2%
Orange County	125.6	0.6%
City of Orlando	26.1	0.1%
City of Altamonte Springs	10.8	0.1%
Town of Eatonville	8.7	0.0%
Total	19,867.5	100.0%

Required Reductions – Draft for BMAP

Entity	TN Starting Load (lbs/yr)	TN Reduction Required (lbs/yr)	% TN Reduction	TP Starting Load (lbs/yr)	TP Required Reduction (lbs/yr)	% TP Reduction
Agriculture	40,598.7	24,536.0	60.4%	3,075.2	1,274.3	41.4%
City of Altamonte Springs	288.7	174.5	60.4%	10.8	4.5	41.4%
City of Casselberry	14,642.8	8,849.4	60.4%	985.9	408.5	41.4%
City of Lake Mary	4,965.6	3,001.0	60.4%	325.4	134.8	41.4%
City of Longwood	5,549.7	3,354.0	60.4%	326.1	135.1	41.4%
City of Maitland	3,200.3	1,934.1	60.4%	247.1	102.4	41.4%
City of Orlando	282.2	170.5	60.4%	26.1	10.8	41.4%
City of Oviedo	23,308.7	14,086.7	60.4%	1,865.6	773.1	41.4%
City of Sanford	21,286.3	12,864.5	60.4%	2,398.8	994.0	41.4%
City of Winter Park	4,616.2	2,789.8	60.4%	308.8	128.0	41.4%
City of Winter Springs	43,969.0	26,572.8	60.4%	2,993.5	1,240.5	41.4%
FDOT District 5	4,644.9	2,807.2	60.4%	401.5	166.4	41.4%
Orange County	3,647.6	2,204.4	60.4%	125.6	52.0	41.4%
Seminole County	96,335.6	58,220.8	60.4%	6,302.8	2,611.8	41.4%
Town of Eatonville	95.4	57.7	60.4%	8.7	3.6	41.4%
Turnpike Authority	5,107.3	3,086.6	60.4%	465.6	192.9	41.4%
Total	272,539.0	164,710.0	N/A	19,867.5	8,232.8	N/A

BMAP Required Reductions – DRAFT

- Proposal to achieve at least 50% of the required reductions during the next five years.

Entity	TN BMAP Iteration Required Reductions (lbs/yr)	TN BMAP Iteration Required Reductions (lbs/yr)
Agriculture	12,268.0	637.2
City of Altamonte Springs	87.2	2.2
City of Casselberry	4,424.7	204.3
City of Lake Mary	1,500.5	67.4
City of Longwood	1,677.0	67.6
City of Maitland	967.1	51.2
City of Orlando	85.3	5.4
City of Oviedo	7,043.4	386.5
City of Sanford	6,432.2	497.0
City of Winter Park	1,394.9	64.0
City of Winter Springs	13,286.4	620.2
FDOT District 5	1,403.6	83.2
Orange County	1,102.2	26.0
Seminole County	29,110.4	1,305.9
Town of Eatonville	28.8	1.8
Turnpike Authority	1,543.3	96.5



Projects



Project Eligibility

- Education efforts and non-structural projects are eligible, regardless of when they were implemented.
 - These efforts are not in the HSPF model.
- Urban structural projects completed since January 1, 2013 and future projects are eligible for BMAP credit.
 - The HSPF model includes all urban structural BMPs that were in place at the time of the TMDL, as well as through the May 2013 BMAP progress report.
- Agricultural BMPs are eligible, regardless of when they were implemented.
 - These BMPs are not in the HSPF model.

Educational Crediting

- Up to 6% credit from starting load:
 - FYN Program implementation (3%).
 - Ordinance implementation: fertilizer, irrigation, landscaping, and pet waste management (up to 2%).
 - PSAs, presentations, pamphlets, website, and illicit discharge program (up to 1%).
- All education efforts can be submitted for the BMAP since they were not included in the model.

Structural BMP Crediting

- Must provide treatment beyond permit requirements.
 - Include permit number on project collection sheet for verification.
- Must provide GIS shapefile of the area treated (not just the project area) to determine credits.
 - Overlay project area on GIS allocation file to determine loading to BMP.
- Credits determined using DEP-approved BMP efficiencies.
- Any reductions provided by stakeholders from studies or other information will be attenuated to reflect the loading reaching Lake Jesup.

Non-Structural BMP Crediting

- Street sweeping, catch basin cleanout, and BMP cleanout are eligible for credit since these activities are not included in the model.
- Credit is based on the annual dry weight or volume of material collected.
 - Calculated in the FSA spreadsheet tool.
- Reductions are attenuated to reflect the loading reaching Lake Jesup.



Questions



Monitoring Plan/Network

- Designed to
 - Enhance the understanding of basin loads.
 - Track project implementation.
 - Identify long-term water quality trends.
- This information will
 - Measure progress toward achieving the TN and TP TMDLs.
 - Be used to potentially recalculate BMAP allocations in next BMAP update.
 - Provide a foundation for continued improvement in cost-effective project implementation.



Stations Included BMAP Monitoring Network

ENTITY	STATION ID	STATION DESCRIPTION	STATION TYPE	SAMPLING FREQUENCY	YEAR SITE ESTABLISHED*	SAMPLING PARAMETERS
Casselberry	New station	Gee Creek northeast of Lake Kathryn	Water Quality	Monthly	New	Core and supplemental parameters
FDEP	New Station	Cameron Avenue and Kentucky Street	Water Quality	Monthly	New	Core and supplemental parameters
Lake Mary	Longwood Lake Mary Rd. downstream of culvert	Soldier's Creek Upstream	Water Quality	Monthly	2005	Core and supplemental parameters
Lake Mary	Behind Austin Street upstream of culvert	Soldier's Creek Downstream	Water Quality	Monthly	2005	Core and supplemental parameters
Lake Mary	New station	Outlet of Big Lake Mary	Water Quality	Monthly	New	Core and supplemental parameters
Longwood	New station	Fairy Lake	Water Quality	Monthly	New	Core and supplemental parameters
Maitland	Waumpi	Lake Waumpi	Water Quality	Monthly	2008	Core and supplemental parameters, secchi depth, water depth, coliform, alkalinity, total dissolved solids (TDS), volatile TSS
Orange County	Burkett Canal 2	Lake Burkett Discharge Upstream of Aloma	Water Quality	Monthly	2007	Core and supplemental parameters, flow, discharge, bacteria
Orlando	Rowena Canal	In the canal that connects Lake Rowena to Lake Sue	Water Quality	Monthly	2008	Core and supplemental parameters, volatile TSS, TDS, alkalinity
Seminole County	HCCB	Howell Creek at County Border	Water Quality	Monthly	2007	Core and supplemental parameters, flow, water depth, coliform
Seminole County/Sanford	NAV	Naval Canal at Pineway	Water Quality	Quarterly/Fill in for monthly	2000	Core and supplemental parameters, secchi depth, water depth, coliform, alkalinity, TDS, volatile TSS, color
Seminole County/Oviedo	SOLARY	Solary Canal	Water Quality	Quarterly/Fill in for monthly	2004	Core and supplemental parameters, secchi depth, water depth, coliform, alkalinity, TDS, volatile TSS, color
Seminole County/Sanford	CHUBB	Chub Creek at E Lake Mary Blvd	Water Quality	Quarterly/Fill in for monthly	2007	Core and supplemental parameters, water depth, flow, coliform, alkalinity, TDS, color, volatile TSS, metals
Seminole County/ Altamonte Springs	PRA	Prairie Lake	Water Quality	Quarterly/Fill in for monthly	1999	Core and supplemental parameters, secchi depth, water depth, coliform, alkalinity, TDS, volatile TSS, color
Seminole County/FDEP	SALT	Salt Creek at Packard Ave.	Water Quality	Quarterly/ Fill in for monthly	2003	Core and supplemental parameters, secchi depth, water depth, coliform, alkalinity, TDS, volatile TSS, color, metals
Seminole County/FDEP	SWEET	Sweetwater Creek at Howard Ave.	Water Quality	Quarterly/ Fill in for monthly	2004	Core and supplemental parameters, water depth, flow, coliform, alkalinity, TDS, color, volatile TSS, metals
SJRWMD	T-3	Six Mile Creek at Sanford Ave Canal NE of LJ	Water Quality	Monthly	1995	Core and supplemental parameters, metals
SJRWMD	T-5	Howell Creek Delta on SW end of LJ	Water Quality	Monthly	1995	Core and supplemental parameters, metals
SJRWMD	T-8	Gee and Soldier Creek Delta west of LJ	Water Quality	Monthly	1995	Core and supplemental parameters, metals
SJRWMD	OW-2	LJ off Grassy Point	Water Quality	Monthly	1995	Core and supplemental parameters, metals, light attenuation, plankton
SJRWMD	OW-4	LJ W of bridge betwn Whites Lndg & Bird Island	Water Quality	Monthly	1995	Core and supplemental parameters, metals, light attenuation, plankton
SJRWMD	OW-6	LJ off center of Far W Arm	Water Quality	Monthly	1995	Core and supplemental parameters, metals, light attenuation, plankton
Winter Park	Weir at Howell Branch Rd	10' Upstream of Weir at Howell Branch Road	Water Quality	Monthly	1995	Core parameters
Seminole County	Howell	Howell Creek at W SR 434	Storm	Storm	2000	TSS, nitrate/nitrite as N, TN, ammonia as N, TKN, TP, BOD5, fecal coliform
Seminole County	Solary	Solary Canal at Deleon Street	Storm	Storm	2001	TSS, nitrate/nitrite as N, TN, ammonia as N, TKN, TP, BOD5, fecal coliform
Seminole County	Gee	Gee Creek at SR 434	Storm	Storm	2000	TSS, nitrate/nitrite as N, TN, ammonia as N, TKN, TP, BOD5, fecal coliform
Seminole County	Soldier	Soldiers Creek at SR 419	Storm	Storm	2000	TSS, nitrate/nitrite as N, TN, ammonia as N, TKN, TP, BOD5, fecal coliform
Seminole County	Six	Six Mile Creek at Myrtle Street	Storm	Storm	2000	TSS, nitrate/nitrite as N, TN, ammonia as N, TKN, TP, BOD5, fecal coliform
USGS	2234308	Howell Creek Near Altamonte Springs FL	Flow	60min	1996	Gage height, discharge
USGS	2234324	Howell Creek near Slavia FL	Flow	60min	1972	Gage height, discharge
USGS	2234344	Howell Creek at State HWY 434 near Oviedo FL	Flow	60min	1973	Gage height, discharge
USGS	2234384	Soldier Creek near Longwood FL	Flow	60min	1972	Gage height, discharge
USGS	2234400	Gee Creek near Longwood FL	Flow	60min	1972	Gage height, discharge
USGS	2234435	Lake Jesup outlet near Sanford FL	Flow	15min	1941	Gage height, velocity, discharge

* New at time of BMAP adoption – April 2010

Stations in gray are no longer being sampled



BMAP Monitoring Network

- Sampling stations, parameters, frequency, and other elements of this strategy may be modified as appropriate to match changing environmental conditions and funding resources.
- Continue with...
 - Water quality monitoring on a monthly basis to assess conditions in the watershed and within Lake Jesup?
 - Information helps determine changes in water quality from the actions implemented as part of the BMAP.
 - Flow stations taking measurements every 15 or 60 minutes throughout the basin?
 - Storm event sampling?
 - Provides information on what pollutant loads are entering the tributaries due to high runoff conditions.



Monitoring Plan Supplemental Information

- Entities in the basin also conduct sampling that provides supplemental data to meet the monitoring strategy objectives (Table 2 handout).
- Research studies
 - Provide information to address the current unknowns in the basin.
 - Provide information that will be utilized in an adaptive management context in next BMAP update.



Supplemental Report

- Phase 2 BMAP (to be adopted in 2017).
 - Present allocations or assignment of loading reductions for Total Phosphorus and Total Nitrogen (new).
 - Identify management actions/strategies to meet reductions.
 - Set target goal reduction of 50% in next five years?
 - Set deadline for achieving load reductions – 20 years after initial adoption of BMAP?
- 2010 BMAP remains in effect.



Next Steps

- Still time to add projects or revise credit calculations.
 - Provide comments/feedback/submit projects by [May 5, 2017.](#)
- Meeting or teleconference mid-May to further discuss allocations.
- Draft Supplemental Report late-May/early-June.
- BMAP meeting mid-June.
- Adoption of Supplemental Report July/August.



Watershed Information Network

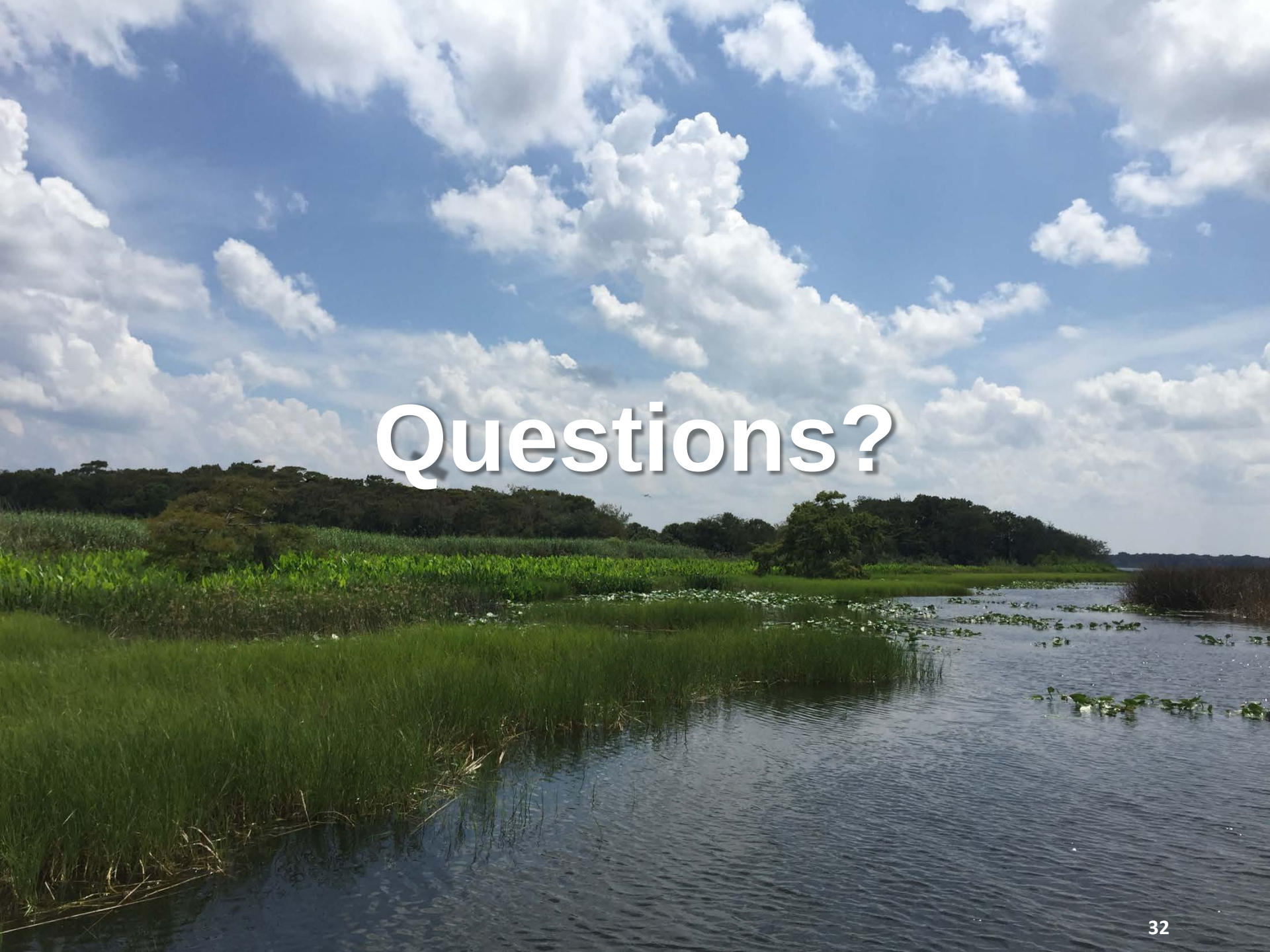
- WIN is the replacement for Florida STORET
 - Data providers will upload to WIN instead
 - Old data in Florida STORET will still be accessible
- WIN will be open for uploads in **spring 2017**
 - New data can still be uploaded to Florida STORET through **December 2017**
 - After that, all data will need to come to WIN
- WIN data must meet minimum quality standards
 - Providers should be making necessary changes now
 - Contact your WIN coordinator for assistance





WIN Contacts

- More information at [http://publicfiles.dep.state.fl.us/DEAR/storet/WIN Communication](http://publicfiles.dep.state.fl.us/DEAR/storet/WIN_Communication)
- Denise Miller, Environmental Administrator
850-245-8516, denise.miller@dep.state.fl.us
- Julie Zimmerman, Business Lead
850-245-8508,
julie.m.zimmerman@dep.state.fl.us

A scenic landscape featuring a body of water in the foreground, with green reeds and lily pads. The background shows a line of trees under a bright blue sky filled with large, white, fluffy clouds. The word "Questions?" is superimposed in the center of the image in a large, white, sans-serif font.

Questions?