Lake Okeechobee Basin Management Action Plan (BMAP)
Annual Meeting and 5-Year Review Kickoff

Thursday, December 13, 2018 at 9:30 AM
Williamson Conference and Education Center, Dixon Hendry Campus
2229 NW 9th Ave
Okeechobee, FL 34972

Attendees

David Allen, City of Okeechobee
Nagel Altrui, City of Kissimmee
Rick Baird, Osceola County
Susan BuChans, Glades County
Sara Davis, DEP
Tim Denison, Johnson Engineering
Teayann Duclos, E Sciences for FDOT
Marcy Frick, Tetra Tech
Stan Ganthier, DEP
Doug Gaston, Audubon
Susan Gosselin, Osceola County
Paul Gray, Audubon Society-Okeechobee
Kathleen Greenwood, FDACS
Chris Guth, Federico & Associates
Ray Hodge, Southeast Milk
David Huggins, DEP
Dianne Hughes, Martin County
Nenad Iricanin, SFWMD
Yogesh Khare, Everglades Foundation
Lisa Kreiger, Lee County
Grant Lanham, SCGC
Ernesto Lasso de la Vega, LCHCD
Kimberly Lawrence, Reedy Creek Imp. Dist.
Linda McCarthy, Lykes Bros.
Stacey Ollis, SFWMD
Steffany Olson, SFWMD
Ximena Pernett, SFWMD
Libby Pigman, SFWMD
Dawn Ritter, Highlands County
Charles Shinn, Florida Farm Bureau
Kevin Williams, DEP
Wayne Zahn, US Sugar

Welcome and Opening Remarks

Marcy Frick welcomed everyone to the Lake Okeechobee BMAP annual meeting to review what occurred over the last year, and the kickoff for the 5-Year Review process, which will be discussed in more detail during this meeting. The participants introduced themselves and the entity they represent.

Overview of the Lake Okeechobee BMAP

Sara Davis stated that this is both the annual meeting and the kickoff to the 5-Year Review process that was already completed for the Caloosahatchee Estuary and St. Lucie River and Estuary BMAPs. The meeting will provide an update on what activities occurred over the last year and provide information on what is coming up in 2019.

The Lake Okeechobee total maximum daily load (TMDL) was adopted by the Florida Department of Environmental Protection (DEP) in 2001 and it calls for a total phosphorus (TP) load to the lake of 140 metric tons (MT) of which 105 MT can come from the watershed and 35 MT from atmospheric deposition. Attainment of the TMDL will be calculated using a five-year rolling average of measured monthly loads. In December 2014, the BMAP was adopted. At that time, the model only included the northern six sub-watersheds, so this was the focus of the BMAP. Sara showed a list of stakeholders who participated in BMAP development including counties, cities, special districts, agencies and other interested parties. DEP, South Florida Water Management District (SFWMD), and Florida Department of Agriculture and Consumer Services (FDACS) are considered the Coordinating Agencies.

Statewide Annual Report (STAR)

Sara stated that the Florida Legislature amended Florida Statues in 2016 to require the STAR. Instead of preparing an annual report for each BMAP around the adoption date, the requirement is to create one report that includes all BMAPs, plus TMDLs and minimum flows and levels. The STAR summarizes information statewide using a calendar year. Since the Lake Okeechobee BMAP was adopted in December, the reporting period for this BMAP did not change although it did change for other BMAPs. The STAR must be submitted to the Governor and Legislature by July 1 every year. Sara noted that the new STAR format no longer includes a description of what each stakeholder achieved over the last year so there is no longer a place to highlight successes and lessons learned. DEP would like stakeholders to present during the annual BMAP meetings to share information with the other stakeholders.

STAR 2018, which covers updates for calendar year 2017, is posted on the DEP website and was submitted to the Legislature on June 29, 2018. As of December 31, 2017, there were 166 completed projects for the Lake Okeechobee BMAP and another 54 projects underway or planned. The TP reductions estimated from the completed projects is 79.7 MT per year which is about 23.2 % of the required reductions. Sara noted that the BMAP includes a table of projects under development by the Coordinating Agencies including dispersed water management, stormwater treatment areas, cost-share funding for dairy remediation, and inactive dairies lagoon remediation. The Coordinating Agencies have been working on these projects and several are underway while others are still in the planning phase because funding is needed.

For the STAR 2019, Sara noted that the stakeholders should have received an email from her in early November with their projects in an Excel table for updating. The email included instructions, which were updated from last year based on lessons learned from the STAR 2018 development. The spreadsheets also include a list of approved project types that should be used for any new projects added to the spreadsheet. Any updates to the projects in the table (e.g., change in status, estimated reductions, costs) should be made and new projects should be added. Sara stated that she highlighted cells in blue that say, "not provided." DEP would like as much information as possible for each project. Sara requested that as the stakeholders update their project lists that they also think about future projects, even those that are further out or need funding, because those will be needed as part of the 5-Year Review. The project updates should be sent to Sara by January 15, 2019 and DEP will then work with the stakeholders on any missing information or questions about the projects. DEP will prepare the STAR and submit it by the July 1 deadline.

Paul Gray stated that Hurricane Irma came through in 2017, which raised the lake elevations and resulted in a watershed loading of about 1,000 MT. The chart with project progress shows the 2017 load was 369 MT. He asked if this load came from the model. Sara responded that DEP did not use the model for this load. DEP took the starting load from the BMAP and subtracted the estimated load reductions from the completed projects. The BMAP starting load is based on a longer-term average since some years will have high loads and some years will have low loads. DEP uses both the project estimated reductions and measured water quality data to evaluate BMAP progress.

Dianne Hughes asked why this TMDL is based on a five-year rolling average. Sara responded that this was the evaluation method that the TMDL developers selected. This approach makes sense given the variability in the watershed loading. Lisa Kreiger asked if the five-year rolling average will change the

BMAP allocations. Sara responded that the five-year rolling average is the method to calculate if the TMDL is being met whereas the allocations are set to focus reductions. Sara noted that if the allocations were changed, this will be done using the model. Susan BuChans asked if the approach will change based on Clean Water Act requirement changes. Sara responded that she cannot speak to that right now.

5-Year Review

Sara stated that there are new legislative requirements in 373.4595, F.S. for Lake Okeechobee, Caloosahatchee Estuary, and St. Lucie River and Estuary. One of these requirements is that the Governor and Legislature want a report after 5-years of BMAP implementation on the status of the BMAP and recommendations for moving forward. The Lake Okeechobee BMAP was adopted in December 2014, so the 5-Year Review is due in December 2019. There are specific items that are required in the report. Milestones must be included, which is why DEP needs information on future projects. The milestones must show how the TMDL will be achieved within 20 years of BMAP adoption or, if this cannot be met, what is needed to achieve the TMDL. The report must also include recommendations for any changes needed to the BMAP. The Watershed Assessment Model (WAM) has been updated so recommendations on how to use this model will be included. The current BMAP only allocates to the entire watershed so allocations to the sub-watersheds may be needed. DEP and SFWMD have been talking about modifications to the BMAP monitoring network. DEP and SFWMD have also been discussing modifications to the Lake Okeechobee Watershed Construction Project (LOWCP).

Sara presented the tentative timeline for the 5-Year Review. She noted that DEP has been working on the water quality evaluation with the Coordinating Agencies since August 2018. In October 2018, the process to evaluate the projects and programs in the LOWCP started. DEP is planning to hold a BMAP meeting in April 2019 to talk more technically about the review items. In June 2019, DEP will submit the STAR 2019. By July 2019, DEP needs future project information from the stakeholders to develop milestones and to include in the report. In December 2019, the 5-Year Review will be completed, and DEP would also like to complete the BMAP update.

Sara stated that the 5-Year Review will be organized into three chapters. Chapter 1 will provide background information on the TMDL, BMAP, watershed, and standards. Chapter 2 will include a summary of progress to date including the number of projects completed and planned by stakeholder, Coordinating Agencies initiatives, and the Lake Tohopekaliga (Toho) Nutrient Reduction Plan project updates. Sara noted that DEP and the Lake Toho stakeholders decided a few years ago to include updates on the Nutrient Reduction Plan projects in the Lake Okeechobee BMAP reports instead of submitting a separate report to DEP. Chapter 2 will also include information on the water quality monitoring network and evaluation. The Coordinating Agencies have been talking about the water quality analyses and decided to use a 10-year period of record based on water year, using about five years before BMAP adoption and about five years after. The analyses will focus on TP, but TN data will also be reviewed. Statistical analyses will be conducted including the Seasonal Kendall using months as seasons to evaluate loads, flow-weighted mean concentrations, and concentrations where flow data are not available. The evaluation will also include summary analyses including five-year rolling average trends, and spatial representation of the results. DEP is using some of the data from analyses in the South Florida Environmental Report (SFER) but there are more details and evaluations included in the SFER.

Chapter 3 of the 5-Year Review will include all the recommendations. This chapter will include 5-year milestones through the 20-year period (ending in 2034) and information on whether the TMDL can be achieved in this timeline. WAM has been updated so this chapter will include recommendations about how to use the model output to evaluate the loading from all nine sub-watersheds. The current BMAP allocates to the entire watershed and DEP is thinking of moving to sub-watershed allocations. If stakeholders have ideas for other allocation options, they should contact Sara. This chapter will also include the monitoring network edits. There were a lot of stations in the BMAP and DEP has been evaluating which are helpful to track BMAP progress and which should be removed. The stations will also be organized into tiers with Tier 1 being the stations used to measure basin loading, Tier 2 being watershed stations, and Tier 3 being flow stations. The Coordinating Agencies have not identified areas where new stations are needed but some existing SFWMD stations that are not currently in the BMAP will be added to the BMAP network. DEP and SFWMD have been coordinating on potential LOWCP revisions, which projects and programs are already in the BMAP, what projects should be added to the BMAP and how to calculate nutrient reductions, and what programs should be updated to help achieve restoration. The 5-Year Review will also include appendixes for current BMAP projects, future projects to meet the targets and funding needed, agriculture enrollment and reductions, BMAP monitoring network and recommendations, water quality data processing and analysis methods, and proposed allocation methodology.

The Coordinating Agencies have an Interagency Agreement that was put in place in 2016 to help organize duties. SFWMD is the lead on 23 projects and FDACS is the lead on six projects plus best management practices (BMPs) enrollment. The agencies are also helping to evaluate the monitoring network and water quality evaluation and will provide comments on the report.

Libby Pigman stated that the watersheds where the Lake Okeechobee project is planned do not have any monitoring. Sara responded that there are monitoring stations, but the colors are difficult to see in the presentation. The colors represent the entity who is conducting the sampling at that station. Paul asked if the southern three sub-watersheds are included in WAM. Sara responded that these sub-watersheds are included in the 2017 version of WAM. Susan asked if the stakeholders can have a copy of the presentation. Sara responded that the presentation and meeting notes will be posted to the file transfer protocol (FTP) site after the meeting.

Kimberly Lawrence stated that she has concerns with sub-watershed allocations, specifically about volumes. The Kissimmee Chain of Lakes cannot have a reduction in volume greater than 5 % and she is concerned whether the sub-watershed can meet required reductions while not reducing volumes by more than 5 %. Sara responded that DEP has had discussions about this restriction and they are aware that the allocations cannot ask the stakeholders to do more than they are allowed. The allocation for this sub-watershed may need to be adjusted but DEP has not started looking at the numbers yet.

Watershed Assessment Model Update

Stacey Ollis stated that the current WAM contract is for the evaluation of pre-drainage conditions and effectiveness of abatement strategies on existing conditions in the Lake Okeechobee Watershed. WAM is a geographic information system (GIS)-based model to simulate hydrology and water quality responses. The model is unique in that it is used to evaluate TP management strategies such as BMPs, source control and regional projects, future load reductions, and nutrient contributions at different spatial scales. The Coordinating Agencies identified WAM as the best tool for these evaluations in the Lake

Okeechobee Watershed. WAM was developed by Soil and Water Engineering Technology (SWET) in the mid-1990s. In 2004, WAM was applied to the Comprehensive Everglades Restoration Plan Lake Okeechobee project. In 2009, the model was expanded to include all the northern sub-watersheds. In 2017, the model was further expanded to include the southern sub-watersheds. The land use was also updated through 2013 and the model was re-calibrated. In mid-2017, the Coordinating Agencies identified additional WAM assessments that were critical to support the BMAP and Lake Okeechobee Watershed Protection Plan and, in April 2018, SFWMD executed a new contract with SWET.

One of the objectives of the new contract is to compare existing conditions to pre-drainage conditions to help DEP ensure the that TMDL does not require abatement of natural conditions. SWET completed the first step, which was to characterize the pre-drainage conditions using land use, topography, and soils data to establish a baseline reference year of 1850. The second objective is to evaluate the effectiveness of abatement strategies against existing conditions. This evaluation will be for four scenarios: (1) advanced fertilization BMPs for major crops; (2) recent farm-level water management BMPs, focusing on changes since 2013; (3) LOWCP projects completed since 2013 and planned for near-term; and (4) fully implemented Kissimmee River Restoration and Upper Basin Initiative. SWET will also perform a cost-benefit analysis for cost-effectiveness of TP removal for the BMPs to determine future strategies. The draft abatement scenario report will be available in January 2019 and the final report in March 2019. SWET will present at the next BMAP meeting in spring 2019, and the final comprehensive report will be provided in May 2019.

Next Steps

Sara stated that stakeholder project updates for the STAR are due by January 15, 2019, and a stakeholder meeting will be held in the spring. DEP will hold one-on-one conversations with the stakeholders about future projects and the plan forward for the BMAP. DEP will submit the STAR in June 2019, and the stakeholders will submit future projects in July 2019. Another meeting will be held in October 2019, and the 5-Year Review will be completed in December 2019.

Questions, Comments, and Discussion

Teayann Duclos stated that during the last BMAP meeting where SWET presented on the WAM updates, the Florida Department of Transportation (FDOT) requested the model files. FDOT reviewed the files and provided comments about the highway event mean concentrations but did not hear back. If the model will be used for allocations, the stakeholders should have an opportunity to review the model. Sara responded that she will look into FDOT's comments because the last meeting was at the end of the last SWET contract. Kimberly stated that during the last meeting, she asked if the model would be used for allocations and she was told it would not be used for allocations. Since this has changed, the stakeholders need time to review the model. Sara responded that she does not think she said that the model will not be used for allocations (*meeting notes are available on the ftp site for reference*). Kimberly asked how 1850 will be used as a baseline reference condition since the system has changed a lot since then. Sara responded that the stakeholders requested the pre-drainage scenario to verify that the TMDL was not trying to abate natural conditions. The goal is to see how the baseline condition compares to the TMDL.

Libby asked if the meeting on Monday, December 17, 2018 in Clewiston will be similar to this one. Sara responded that the meeting will be different because its purpose is to set new TMDLs for the

Caloosahatchee River tributaries. The meetings on Tuesday, December 18, 2018 will be for the Caloosahatchee Estuary and Everglades West Coast BMAPs.

Adjourn

The meeting was adjourned at 10:34 am.

Action Items

- Stakeholders should submit their 2018 project updates to Sara by January 15, 2019.
- Stakeholders should start to think about future projects for the 5-Year Review.
- Stakeholders should provide allocation option ideas to Sara.
- Sara will post the presentation and meeting notes to the FTP site.
- Sara will follow up with Teayann about FDOT's comments on WAM.