

Lake Okeechobee Basin Management Action Plan (BMAP) Annual Meeting Summary

*Tuesday, May 2, 2017 at 9:30 AM
Williamson Conference and Education Center
Indian River State College – Dixon Hendry Campus
2229 NW 9th Avenue, Okeechobee, FL 34972*

Attendees

Nagel Altrui, City of Kissimmee
Rick Baird, Osceola County
Tim Banks, DEP
Sarah Beedle, City of Kissimmee
Del Bottcher, SWET
Jeremy Buchanon, Osceola County
Patricia Burke, SFWMD (*via phone*)
Marisa Carrozzo, Conservancy of SW FL (*via phone*)
Teresa Coley, SFWMD
Audra Corson, FDACS
Kevin Coyne, DEP
Sean Dallas, Osceola County
Sara Davis, DEP
Joseph DeCerbo, SLID
Teayann Duclos, ESciences for FDOT
Amy Eason, AECOM for TIWCD
Yessenia Escribano, FDACS
Ken Fields, City of Sebring
Cathy Foerster, Wildwood Consulting
Clell Ford, Highlands County
Paul Gray, Audubon Society-Okeechobee
Susan Gosselin, Osceola County
Roxanne Groover, FOWA
Katie Hallas, FDACS
Noah Handley, Lykes Bros.
John Hayford, Okeechobee Utility Authority
Janet Hearn, ATM
Tom Hill, Florida Farm Bureau

Jeff Holland, Reedy Creek Improvement Dist.
Dianne Hughes, Martin County
Andy James, SWET
Chad Kennedy, DEP
Lisa Kreiger, Lee County
Kimberly Lawrence, Reedy Creek Imp. Dist.
Lisa Lotti, City of Orlando (*via phone*)
David Mahler, Valencia WCD
Ansley Marr, SFWMD
Justina Mattson, OSWCD
Linda McCarthy, Lykes Bros.
Barbara Miedema, SCGC
Matt Morrison, SFWMD
Melodie Naja, Everglades Foundation (*via phone*)
Yogesh Khare, Everglades Foundation (*via phone*)
Stacey Ollis, SFWMD
Steffany Olson, SFWMD
Brad Phares, FDACS
Sam Phares, FDACS
Irene Quincey, Pavese Law Firm
Jeff Sumner, Federico & Associates
Bill Tew, Valencia WCD
Staci Thomas, Johnson Engineering
Scott Wade, Earth Balance
Bonnie Wolff-Pelaez, FDACS
Joyce Zhang, SFWMD

Introduction

Cathy Foerster opened the meeting at 9:34 AM by welcoming everyone. She stated that this is the second annual meeting for the Florida Department of Environmental Protection (DEP) Lake Okeechobee (Lake O) Basin Management Action Plan (BMAP). Presentations include an overview of activities that occurred during the last year; updates by Coordinating Agencies; a modeling update; and an update on funding opportunities. Questions will be taken after each presentation and speakers will be available after the meeting to answer further questions. She reminded attendees to sign in and provide their email information should they desire to be on the contact list to receive meeting notices for Lake O. She introduced Sara Davis, DEP Basin Coordinator, and then requested that each person in the room introduce them self. She then turned the meeting over to Sara.

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Overview of the Lake O BMAP 2016 Annual Progress Report

Sara stated that a total maximum daily load (TMDL) was adopted in 2001 that allocated 105 metric tons of phosphorus per year (MT/yr) for the entire Lake O watershed, which is divided into nine sub-watersheds. The Lake O BMAP was adopted in 2014 and focused on the northern six sub-watersheds. The draft second annual progress report was posted about a week ago at the BMAP ftp site. The reporting period for the annual progress report is January 1, 2016 through December 31, 2016. The report highlights activities during the reporting period; water quality monitoring; other efforts; compliance; and contains new appendices on agricultural enrollment and reductions, and future BMAP projects.

Sara presented a series of slides on five projects completed during the reporting period: Okeechobee County Oak Park, Okeechobee County Lock 7 Bypass Culvert System, Orange County Lake Down Alum Treatment Facility, South Florida Water Management District (SFWMD) Rolling Meadows Phase I, and Spring Lake Improvement District, Phases 1–3. Sara identified projects under development by the Coordinating Agencies (DEP, SFWMD and Florida Department of Agriculture and Consumer Services [FDACS]) as well as the Coordinating Agencies initiatives. She showed a slide with a map and table of agricultural lands that have been enrolled in the FDACS Best Management Practices (BMPs) Program as of September 31, 2016. She concluded this portion of her presentation by showing a bar chart that reflected progress toward meeting the TMDL.

Sara provided an update on the monitoring program. Water quality monitoring is conducted by the Cities of Orlando and Kissimmee; Orange and Osceola Counties, and SFWMD. Information on the monitoring network is located in Section 3 and Appendix D of the annual report. Efforts are underway to improve the monitoring plan. She reminded attendees that Florida STorage and RETrieval (STORET) water quality database uploads are still needed, and that the Watershed Information Network (WIN) replaces STORET in 2017. By 2018, all water quality data will be submitted to WIN. Sara stated that DEP is also working on methodologies for additional water quality analyses.

Sara discussed recent legislative changes that affect all BMAPs as well as specific requirements related to the Lake O BMAP. For the Lake O BMAP, which is one of the Northern Everglades and Estuaries Protection Program BMAPs, a formal 5-year review is now required, with the first review due in 2019. This review must include 5-year milestones to measure progress, since the aim will be to achieve the TMDL within 20 years. Further, the Northern Everglades Coordinating Agencies will submit an annual progress report to the legislature. All new or revised BMAPs must include the following information on existing and future projects: priority ranking; planning level cost estimates; estimated completion date; expected nutrient load reduction; source and amount of funding. Sara stated that more projects are needed from the stakeholders to achieve the TMDL.

Questions/comments by attendees:

1. Paul Gray: What is the 20-year planning horizon for Lake O? Sara: Since the BMAP was adopted in 2014, the 20-year period is 2014–2033. The 5-year progress report that is due in 2019 will include 5-year milestones for the remaining 15 years.

SFWMD Update

Ansley Marr and Matt Morrison of the SFWMD Everglades Policy and Coordination Division presented on Coordinating Agencies initiatives, SFWMD-specific projects, and projects under development by the

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Coordinating Agencies. Ansley stated that an interagency agreement was executed in March 2017 that clarifies agencies' roles and responsibilities in the Lake O BMAP; specifies provisions regarding watershed research, water quality monitoring, and BMPs; and outlines mandated reporting requirements of the BMAP.

Coordinating Agencies Initiatives

Matt presented a series of slides on the Comprehensive Everglades Restoration Plan (CERP) Lake O Watershed (LOW) Project. SFWMD is working with the U.S. Army Corps of Engineers (USACE) Jacksonville District on the planning feasibility of this potential storage project north of Lake O. The study area encompasses 950,000 acres; SFWMD and the state of Florida own 70,000 acres within the study area. The purpose of the project is to increase water storage capacity (250,000 acre-feet) in the watershed, resulting in improved Lake O water levels; improve quantity and timing of discharges to Caloosahatchee and St. Lucie estuaries; restore or create habitat to increase spatial extent/functionality of wetlands; and improve existing and future water supply. Planning efforts began in 2016 and will conclude in 2019. Project components under consideration are: above ground storage; aquifer storage and recovery (ASR); wetland and floodplain restoration; and deep well injection. Matt made a point to state that the project does not include formal stormwater treatment areas (STAs) north of Lake O; there will be no formal water quality treatment as a result of the project. However, many project components will result in ancillary water quality improvements.

Questions/comments by attendees:

1. The CERP LOW Project is not a water quality project? Matt: The primary purpose of the CERP LOW project is not water quality treatment since water quality treatment features north of Lake Okeechobee are not policy compliant in CERP. However, management features of the project will have ancillary water quality improvement benefits.
2. What about the Dispersed Water Management (DWM) Program? Matt: The DWM Program is a state program rather than a federal (CERP) program. DWM projects tend to be much smaller with more shallow storage. Ansley will present information on the DWM Program.
3. Paul Gray: This is the second time around for a northern storage project. If it is being reformulated without STAs, then how will water from the reservoir be cleaned before flowing south? Ansley: STAs remain an important component of the BMAP for water quality treatment. I will present information on the STAs in just a few minutes.
4. Paul Gray: Will there be parallel modeling efforts for STAs (state) with the northern reservoir (federal)? Matt: The ASR component under consideration in the federal reservoir project is considering collocating storage features with STAs, for example, Lakeside Ranch. Ancillary water quality benefits will be quantified and documented in the project implementation report (PIR).
5. Paul Gray: What is the BMAP Program doing for water quality? Sara: DEP is quantifying water quality benefits from projects in the BMAP. The 5-year review in 2019 will undertake a thorough review and assessment of projects.
6. Paul Gray: I fear lack of coordination between the CERP and BMAP. Ansley: Please be assured there is coordination in that federal and state staff assigned to Lake O are collocated in the same office. Sara: DEP coordinates with SFWMD about every few weeks on Lake O topics.
7. Paul Gray: The BMAP should include a detailed description of coordination among state and federal agencies.

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8. Barbara Miedema: The Kissimmee River Restoration Project had a side benefit of reducing total phosphorus (TP) in the Kissimmee River; therefore, there is precedent that a project can have multiple benefits to help meet BMAP targets.

SFWMD Activities

Ansley presented a series of slides on the Northern Everglades STAs: Lakeside Ranch Phase I (910-acre effective treatment area; removed 10.2 MT/yr TP during the reporting period), Taylor Creek (118-acre effective treatment area; removed 1.8 MT/yr TP during the reporting period), and Nubbin Slough (773-acre effective treatment area; repairs and modifications recently completed). She provided an update on the Kissimmee River Restoration Project which will restore ecological integrity to approximately one-third of the river and its floodplain that existed before the river was channelized. Key components include backfilling 22 miles of the C-38 canal and reconnecting a remnant section of the original river channel (45 miles). The last major construction efforts should conclude in 2020. She provided information on the DWM Program and the status of the Rolling Meadows Wetland Restoration Phase I project.

Questions/comments by attendees:

1. Rick Baird: The Kissimmee River is closed now. Will it reopen in 2020 when the last major construction is completed? Ansley: I am unsure, but will be happy to find out for you.

Projects Under Development by Coordinating Agencies

Ansley presented a series of slides on the following projects that are under development by the Coordinating Agencies: Lakeside Ranch STA, Phase II; Rolling Meadows Wetland Restoration, Phase II; Brighton Valley DWM; and Latt Maxcy DWM. She provided information on the Northern Everglades Public-Private Partnerships. There were no questions or comments by the attendees.

FDACS Update

Katie Hallas with the FDACS Office of Agricultural Water Policy (OAWP) provided updates on agricultural BMPs; BMP Program enrollment; Lake O sub-watershed enrollment in the northern and southern sub-watersheds; enrollment effort; cost-share projects; and the Implementation Assurance (IA) Program. Nine BMP manuals have been adopted to date; a Florida Small Farms Manual is under development now. Currently, the sod and cow/calf manual are under revision. Once the revisions are adopted, the equine and specialty fruit and nut manuals will undergo revision. The OAWP reorganized last year and began streamlining many of its processes. As a result, the BMP manuals will now be reviewed on a five-year basis. Once BMPs are developed and combined into commodity-specific BMP manuals, the OAWP field staff work with applicable producers to enroll them in the BMP manual.

Katie displayed a map that showed enrolled acres in the entire watershed through September 30, 2016. A total of 1.892 million acres have been enrolled in the nine Lake O sub-watersheds, and 1.262 million within the six northern sub-watersheds. Based on the Load Estimation Tool (LET), land uses were refined and the revised total of enrolled acres for the northern sub-watersheds is 867,629 acres. Most of the enrollment north of the lake is cow/calf as illustrated by the yellow color, and most of the enrollment in the southern sub-watersheds is row crop as shown in green. She then discussed the enrollment in each of the six northern sub-watersheds. Fisheating Creek is at 83.6%, Indian Prairie is at 76.1%, Lake Istokpoga is at 70.5%, Lower Kissimmee is at 73.5%, Taylor Creek/Nubbin Slough is at 80.5%, and Upper Kissimmee is at 41.5% enrollment.

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The enrollment effort, formerly known as compliance assistance, has been conducted in the Taylor Creek/Nubbin Slough, Indian Prairie, and Fisheating Creek Sub-watersheds. Enrollment effort outreach to producers in the remaining three northern sub-watersheds will also occur.

She provided a summary slide of estimated TP reductions in each northern sub-watershed due to agricultural BMPs, cost-share BMPs, and hybrid wetland treatment technology/floating vegetation tilling. The OAWP commissioned Soil and Water Engineering Technology, Inc. (SWET) to provide TP and total nitrogen (TN) reduction estimates and costs associated with implementation of cost-share BMPs. The results indicated that agricultural cost-share BMPs in the Lake O Watershed may be achieving more nutrient reductions that accounted for in the BMAP, so the OAWP will work with DEP to understand these differences. Katie provided a summary slide of SWET's findings. Katie provided statistics on the recent solicitation (2016; third solicitation) under the dairy cost-share program. Eight projects were approved for funding; agreements signed with six producers totaling \$3,766,998 in cost-share funds with expected TP reduction total of 1.73 MT/yr. The IA Program is now known as the "Implementation Verification" Program. FDACS will verify that producers are implementing BMPs in accordance with the manuals upon their enrollment. FDACS is required to submit its first verification report to the Florida Legislature by July 1, 2018.

Questions/comments by attendees:

1. Lisa Kreiger: What is the definition of "Florida Small Farms" in the new manual? Bonnie Wolff-Pelaez: We are determining the definition now. It will likely be agriculture 50 acres or less in size. The University of Florida Institute of Food and Agricultural Sciences is very involved in development of the manual.

Application of the Watershed Assessment Model (WAM) to the Northern Sub-watersheds

Andy James with SWET provided a presentation on modeling the northern sub-watersheds using the WAM. The modeling goals were: develop and refine a computer model that estimates water volumes and nutrient loads flowing into Lake O from the northern part of the LOW; use for further development and implementation of the Lake O BMAP; evaluate TP and TN load reductions due to agricultural BMPs; provide comparisons of alternative BMP applications; and create spatial maps of estimated nutrient loading to Lake O. A preliminary report was submitted to the Coordinating Agencies in March 2017.

The six northern sub-watersheds were modeled independently; flows and nutrient loads leaving each sub-watershed were simulated. Required datasets were: land use, soils, rainfall data, hydrology, topography, utility zones, hydraulic structures, boundary data, and measured data. The watershed was broken into a one hectare grid. The model was run using data from 1975–2013; calibration/verification was the 11-year period from 2003–2013. The preliminary results show quite a range in water volume among the six sub-watersheds.

Questions/comments by attendees:

1. Rick Baird: What assumptions did you use for any retention ponds in the grid? Andy: We can incorporate retention ponds in various ways depending on their size and the amount of available information. For some, we made assumptions based on land use, size and depth, time and delay factor. If it is a big area such as an STA, we can input specific information into the hydrography.
2. Rick Baird: Did you assume a load reduction for a retention pond? Andy: We use an equation in a post-processing step, depending on the type of retention and residence time.

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3. Rick Baird: We have one-foot contours available that may be a resource for your model. Andy: Thank you.
4. Susan Gosselin: What is the year of the septic system data? Andy: I believe we used 2013 or 2014 Florida Department of Health (FDOH) data. We understand that FDOH recently released updated data.
5. Susan Gosselin: How are small package plants treated in the model? Andy: It depends on the information we have. We typically assume there is some level of treatment associated with a package plant, but can include more specific information as available.
6. Kimberly Lawrence: When will the model be available for public review? I assume the model will be used to set allocations. Sara: The model could be used to set allocations in the future; we expect this to be a part of the 5-year review in 2019. The model is not yet available for public review, but we will make it available as soon as possible, probably by the end of the year. FDACS funded the model, and SWET is under contract to FDACS.

Application of WAM to the Southern Sub-watersheds

Del Bottcher with SWET presented on validation, calibration, base scenario, and trial simulations conducted with WAM on the southern three sub-watersheds. He said this was a very challenging model run since the system is quite complicated. Required datasets were: land use, irrigation sources, soils, rainfall data, hydrology, topography, utility zones, hydraulic structures, boundary data, and measured data. Every structure was simulated to predict TN and TP flows into the lake. The preliminary results came back favorably as he wanted to be within 10 %. He stated that the LET is an important component of WAM. He is seeking stakeholder input of future modeling scenarios. Possible options beyond the baseline run include: additional TMDL projects within the BMAP boundary (west Lake O sub-watershed); all/some CERP projects implemented; land use changes; or advanced BMPs. Kevin Coyne elaborated that future modeling scenarios should be high-level, rather than project-specific. Sara stated that this forum is not the only opportunity to provide comments. Please email her directly with a request for any report or suggested modeling scenarios. Katie emphasized the need for alternative modeling scenarios soon since the SWET contract expires June 30, 2017.

Questions/comments by attendees:

1. Linda McCarthy: What was included in the baseline run? Del: The baseline run included the level of BMP implementation within the basin at the end of the modeled period, and some projects too, such as the STAs.
2. Linda McCarthy: We need to definitively understand what was used in the baseline run to provide adequate input.
3. Barbara Miedema: I did not see on your maps the A-1, Everglades Agricultural Area (EAA) project that went online a year ago. Seepage from the Herbert Hoover Dike is no longer going into the basin. Del: I agree that we should look at the project.
4. Dianne Hughes: I concur that we need to understand the model assumptions before we can suggest scenarios. A short presentation is not adequate for us to provide good suggestions. Del: I understand that I was not able to share everything during my time allotment today. The modeling report has details on the assumptions used in the baseline run.
5. How did you ascertain lake O levels? Del: We used available data for structures closest to the lake.

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6. Barbara Miedema: Did you look at the three sub-watersheds independently or as an aggregate? Del: The three sub-watersheds were evaluated separately with boundary conditions assessed where there were connections.
7. Barbara Miedema: The seepage wall changes the water balance in the EAA.
8. Chad Kennedy: Was seasonality of agricultural lands a factor in the model? Del: Because of data variation, we did not factor in seasonality of farm lands. We used BMPs for the water balance coming out of farms.

Funding Opportunities

Tim Banks of the DEP Division of Watershed Restoration Assistance provided an overview of funding assistance available through his division. Grant and loan programs are available for projects that improve the quality and quantity of water by reducing pollutants that enter surface water and groundwater; improve stormwater quality; collect and treat sanitary wastewater; produce and distribute drinking water; beach nourishment; and reclaiming mined land. He provided details on the Clean Water State Revolving Fund, Drinking Water State Revolving Fund, U.S. Environmental Protection Agency 319(h) Nonpoint Source Grant, and TMDL Water Quality Restoration Grant.

Wrap-up

Sara stated that she will post all presentations to the DEP public access site. She would like stakeholder comments provided to her on the draft annual report by May 19, 2017. She reminded attendees that: STORET database uploads need to be completed and WAM scenarios are needed. In the meantime, DEP will continue development of additional water quality analyses and will continue project information collection. The next annual meeting will be held in spring/summer 2018.

Questions/comments by attendees:

1. Rick Baird: Where is the BMAP document located on the DEP website? Sara: It is posted on the public access site (file transfer protocol [FTP] site). Please email me and I will respond with the hyperlink.

Adjournment

The meeting adjourned at 11:48 AM.

Action Items

Below are action items from the meeting.

1. Sara: Post final presentations and meeting summary to the DEP BMAP public site.
2. Stakeholders: Provide comments via email on draft annual report to Sara by close of business May 19, 2017.
3. Stakeholders: Upload missing data to STORET, and prepare for transition to WIN.
4. Stakeholders: Provide future WAM modeling scenario suggestions to Sara.
5. Stakeholders: Email Sara with requests for any modeling reports.
6. Sara: Provide Dianne Hughes the southern sub-watersheds modeling report.
7. Sara: Consider placing more detail in the BMAP regarding coordination among the agencies, and with the federal CERP efforts.
8. Del/Andy: Consider obtaining one-foot contours from Osceola County.
9. Del/Andy: Investigate the A-1, EAA project that went online a year ago for inclusion in future model runs for the northern sub-watersheds.