

Lake Okeechobee Basin Management Action Plan

Technical Meeting Summary

Tuesday, May 3, 2016

9:00 AM – 11:17 AM

Williamson Conference and Education Center

2229 NW 9th Avenue, Okeechobee, Florida 34972

Attendees

Silvia Alderman, Ackerman LLP (by telephone)	Kerry Kates, Florida Fruit and Vegetable Association
Nagel Altrui, City of Kissimmee	Mitchell Katz, Orange County
Bob Baker, FOWA	Steven Kelly, FDOT D1
Missie Barletto, Aim Engineering and Surveying	Greg Kennedy, FDEP
Sarah Beedle, City of Kissimmee	William C. Kennedy, FDEP
Lesley Bertolotti, SFWMD	Yogesh Khare, Everglades Foundation (by telephone)
Vanessa Bessey, FDACS	Kimberly Lawrence, Reedy Creek Improvement District
Del Bottcher, SWET	Lisa Lotti, City of Orlando (by telephone)
Bob Butler, Butler Oaks Farm	David Nahler, Valencia WCD/City of Edgewood
Roger Butler, B-4 Inc.	Kristie Mathey, Larson Dairy
Tiffany Busby, Wildwood Consulting	Libby Maxwell, SFWMD
Marisa Carrozzo, Conservancy of Southwest Florida	Linda McCarthy, Lykes Brothers Inc.
Audra Corson, OSWCD	Sherry McCorkle, Congressman Tom Rooney
Kevin Coyne, DEP	Greg Munson, Gunster
Mike Crikis, Reedy Creek Improvement District	Stacey Ollis, SFWMD
Sean Dallas, Osceola County	Steffany Olson, SFWMD
Sara Davis, FDEP	Irene Quincey, Pavese Law Firm
Joseph DeCerbo, Spring Lake Improvement District	Raulie Raulerson, FDACS
Kenneth Dodge, Lewis, Longman & Walker, P.A.	H.M. Ridgely, Evans Properties
Andrea Dominquez, FWC	Clifford Rucks, C&M Rucks Dairy
Teayann Duclos, E Sciences/FDOT D5	Dan Rutland, Royal Consulting Services Inc.
Amy Eason, AECOM/Troup Indiantown WCD	Ray Scott, FDACS
Tony Federico, Federico, Lamb & Associates (by telephone)	Jeff Sumner, SFWMD
Clell Ford, Highlands County	Mary Szafraniec, Amec Foster Wheeler
Stanley Ganthier, FDEP	Bill Tew, Valencia WCD
Paul Gray, Audubon Society	Kelsie Timpe, ATM
Wayne Groves, City of Kissimmee	Terry Torrens, Osceola County
Katie Hallas, FDACS	Garrett Wallace, Collins Slough WCD/Devil's Garden WCD
Herb Harbin, Lazy H Bar Cattle	Paul Whalen, TAC Environmental
Ryan Higgins, SFWMD	Bonnie Wolff Pelaez, FDACS
Tom Hill, Florida Farm Bureau	Joyce Zhang, SFWMD
Janet Hearn, ATM (by telephone)	
Jeff Holland, Reedy Creek Improvement District	
Danielle Honour, CDM Smith	
Diane Hughes, Martin County	
Andrew James, SWET	

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Welcome and Opening Remarks

Kevin Coyne welcomed everyone to the Lake Okeechobee Basin Management Action Plan (BMAP) meeting, and thanked Indian River State College for the use of their meeting facilities. Everyone introduced themselves and who they represented.

Overview of the Lake Okeechobee BMAP Annual Progress Report

Sara Davis provided an overview of the 2015 Lake Okeechobee Annual Report. Sara noted that the total maximum daily load (TMDL) was adopted in 2001 and the BMAP was adopted in 2014. The 2015 report is the first annual report since BMAP adoption and the reporting period includes activities from January through December 2015.

The efforts that occurred during the reporting period include the Florida Department of Transportation (FDOT) beginning construction on six projects and adding two new projects. The City of Orlando completed one project, Orange County added four new projects, and Spring Lake Improvement District proposed one new project. The various on-going efforts by many entities continued. Sara noted that this first annual report focuses primarily on updates for the larger projects and initiatives in the basin, as this is the first year of a ten-year BMAP phase.

The state agencies are also coordinating activities including Comprehensive Everglades Restoration Plan (CERP) planning, owner-implemented best management practice (BMP) enrollment and verification, cost-share BMP effectiveness verification, revisions to the Watershed Assessment Model (WAM), water quality monitoring, alternative BMP reduction strategies, and in-lake nutrient reduction strategies. Sara noted that many of these activities will be covered in other presentations, so she will leave the details to those remarks.

Sara added that there are various projects under development and described their status. Sara displayed photos of the Lakeside Ranch Stormwater Treatment Area (STA) and Taylor Creek STA, which are projects being led by the South Florida Water Management District (SFWMD). Sara also showed a map of many of the BMAP projects but noted that some of the efforts without specific locations (street sweeping, public education, ordinances, and agricultural BMP enrollments) are not shown. Sara stated that the Florida Department of Environmental Protection (DEP) is mapping all of the projects with treated areas and has therefore been requesting shapefiles of the project areas from local stakeholders. Sara asked everyone to provide project treatment areas to her, if not already submitted. Sara added that some project locations will be represented by a single location/point while others will be shown as a polygon.

Sara described the agricultural lands enrolled in BMPs as of December 31, 2015. Sara explained that for purposes of estimating nutrient loads from commercial agriculture, all agricultural lands are assumed to be enrolled in BMPs, excluding those properties that were already enrolled prior to 2009. This date corresponds to the date for urban projects to be included in the BMAP. By counting those enrollments after 2009, the reduction estimates are based on the newer enrollments.

Sara then provided a BMAP monitoring plan update. She stated that both water quality and flow are being measured at various sites in the watershed. Water quality monitoring is being conducted by the City of Orlando, City of Kissimmee, Orange County, Osceola County, and SFWMD. The primary objective of the BMAP monitoring plan is to track trends in total phosphorus (TP) loads and

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concentrations by sub-watershed. Also, there is a need to track trends in total nitrogen (TN) loads and concentrations by sub-watershed. The BMAP describes the need for all monitoring entities to upload their water quality data to Florida storage and retrieval (STORET) database at least once every six months. Sara emphasized the importance of uploading the data so it can be used to track trends and load reductions. Sara added that the DEP has support available for setting up STORET uploading, and to contact her if assistance is needed. DEP wants to use all the available data to track progress, but can only use data that is part of the STORET database.

Sara showed an example of the SFWMD TP data by sub-watershed from water year (WY) 2006 through 2014 in the 2016 South Florida Environmental Report (SFER) – Volume I, Chapter 8 (www.sfwmd.gov/sfer). The table shows the mean TP concentration for the WY2006 through WY2014 period and the current reporting year (WY2015) results for comparison purposes. Sara noted that she modified the information reported in the SFER to reflect the sub-watersheds defined in the BMAP, and that going forward DEP plans to coordinate with SFWMD on water quality analyses and reporting. She added that a sufficient number of water quality samples will be needed to perform these types of analyses and track progress towards the TMDL.

Sara showed the trends in TP based on flow-weighted means and TP loads. She stated that the TMDL required tracking TP loads with a 5-year moving average and showed a chart of annual TP loads to Lake Okeechobee from WY2009 to WY2015. Sara noted that the chart was based on the SFWMD data from the 2016 SFER– Volume I, Chapter 8, and it is an example of the types of analyses that DEP is considering using to track progress for the BMAP. Sara explained that the blue line on the chart is the annual average and the orange line is the 5-year moving average.

Sara asked for feedback on the BMAP water quality analysis approach, as these analyses may be reported in future BMAP annual updates. Please send any comments or suggestions to Sara at Sara.Davis@dep.state.fl.us.

Lake Tohopekaliga (Toho) Nutrient Reduction Plan Update

Danielle Honour provided a status report on the Lake Toho Nutrient Reduction Plan. Danielle explained that the planning process started six years ago, in 2010. The DEP initially listed Lake Toho as impaired in November 2010 and the municipal stakeholders met with DEP about this finding. After discussion, there was agreement that a 4e Plan approach would be desirable and the stakeholders moved forward with the development of a Nutrient Reduction Plan in April 2011. The plan was developed and was formally accepted by DEP in February 2012.

At the time of the plan development, there was a lot going on with other TMDLs in the region being developed and the lake Okeechobee BMAP being planned. Danielle explained that Lake Toho is located in the Upper Kissimmee River Basin with a watershed area of 473 square miles. The lake itself is 34 square miles in surface area. It is a Class III freshwater lake and is popular for recreational activities such as fishing, hunting, boating, birding, and sightseeing.

Lake Toho is a highly managed lake, with water levels being stabilized in the 1960s. There were significant sewage treatment plant effluent discharges to the lake from the 1940s through the 1980s. Major drawdowns have occurred to improve habitat. The invasive plant hydrilla was introduced to the

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lake in the 1980s. At the present time, hydrilla levels are managed to support an endangered bird, the snail kite. The impact of these management activities on water quality is still not fully understood.

When Lake Toho was placed on the verified list in 2010, it was initially impaired for nutrients due to the increasing trophic state index (TSI). Osceola County and the City of Kissimmee provided comments that an independent analysis showed no impairment and that the ambient nutrient concentration was not correlated to algae levels. DEP reconsidered the impairment finding and agreed that more research was needed. The lake was verified as impaired for an imbalance of flora and fauna due to excessive macrophytes (hydrilla). In December 2011, the Nutrient Reduction Plan was completed and in February 2012, the lake was listed in category 4e (impaired, but with ongoing restoration activities underway, so a TMDL is not required).

Danielle described the differences between a BMAP, a reasonable assurance plan (RAP), and the nutrient reduction plan; she explained that the nutrient reduction plan is a hybrid plan with no set water quality targets. The elements of the 2011 nutrient reduction plan included a pollutant load analysis, management actions (e.g., BMPs), research priorities, monitoring plan, implementation tracking, and commitments to plan implementation.

Danielle explained that biennial updates are submitted to DEP that describe the projects and public education activities in the basin, as well as monitoring results, water quality trends, and research accomplishments. The first update was completed in 2014 and the 2016 update has been submitted to DEP and is under review.

The monitoring approach was described and includes both tributary and in-lake monitoring. Danielle mentioned that many of the in-lake sites have long term datasets while the tributary monitoring is fairly new and is building the dataset on tributary loads. The main interest is in long term (10-year trends) in water quality.

The Lake Toho efforts fit in with the Lake Okeechobee BMAP because the watershed is located in the Upper Kissimmee Sub-watershed. The Toho basin is 11% of the area in the Lake Okeechobee Northern Sub-Watersheds and contains the majority of the urban area and the municipal separate storm sewer system (MS4) permittees. Danielle noted that the Lake Okeechobee TP target from the TMDL is 0.04 milligrams per liter (mg/L) and the current Lake Toho 10-year average TP concentration is 0.05 mg/L.

Danielle showed a table of the loading from the six northern sub-watersheds in the Lake Okeechobee basin. She pointed out that the Upper Kissimmee has, by far, the largest area among the sub-watersheds but contributes the second smallest part (15%) of the overall TP load (66.6 metric tons [MT] per year). She also provided two bar charts that showed the relative TP concentration of each sub-watershed and the average discharge in acre-feet (ac-ft). The Upper Kissimmee Sub-watershed has the lowest average TP concentration (86 parts per billion [ppb]) and the highest volume of discharge (826,015 ac-ft).

There were several benefits to pursuing a nutrient reduction plan that Danielle described such as the head start on restoration activities, local control of the plan development, postponing the development of a TMDL, putting more monitoring in place, and demonstrating decreasing TP concentrations in Lake Toho.

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Mitchell Katz asked if Lake Toho will be delisted from the verified list at some point. Danielle responded that the stakeholders are waiting for the revised list of impaired waters, scheduled to be released by DEP in late 2016. Lake Toho will be evaluated using the numeric nutrient criteria (NNC) for the first time. The lake may be meeting the NNC, but may still be considered as impaired because of the presence of hydrilla and lake vegetation index (LVI) issues.

SFWMD Updates

Lesley Bertolotti introduced herself as a principal scientist with the SFWMD, Office of State & Agricultural Policy, Northern Everglades Unit, presented on the progress made during the BMAP reporting period of restoration efforts and projects included in the Lake Okeechobee BMAP that the District and its partners are implementing. The full presentation is posted to the DEP ftp site. Additional details on the activities covered in the slides are provided in the draft BMAP. Information on some projects and programs highlighted in the presentation are provided below. Another good information source for District projects and restoration activities is the SFER located at: www.sfwmd.gov/sfer.

- **Lakeside Ranch STA.** Expedited under the Northern Everglades and Estuaries Protection Program (NEEPP), this project is a 2,700-acre STA in western Martin County on lands adjacent to Lake Okeechobee. The purpose of this project is to remove TP from S-191 Basin (919-acre treatment area). During 2015, under Phase I (Northern STA and Inflow Pump Station), operations continued; under Phase II, the construction of the Southern STA is currently under way; however, the construction of the S-191A pump station is contingent on future funding.
- **Taylor Creek (TC)-STA.** This STA is located on the SFWMD-owned Grassy Island Ranch along the banks of Taylor Creek. The purpose of this project is to remove TP from Taylor Creek drainage basin (118-acre treatment area). The TC-STA facility was constructed in 2006, and it is operational.
- **Nubbin Slough (NS)-STA.** The purpose of the NS-STA is to remove TP loads from the Nubbin Slough drainage basin. In March 2015, the U.S. Army Corps of Engineers (USACE) transferred the STA to the SFWMD. During 2015, start-up monitoring was under way. Once the start-up monitoring requirement for TP reduction is achieved, then flow-through operation will begin.
- **Kissimmee River Restoration and Kissimmee River Headwaters Revitalization.** The main goal of the Kissimmee River Restoration Project (KRRP) is to restore ecological integrity to approximately one-third of the river and its floodplain that existed before the Kissimmee River was channelized in the 1960s. Reach 3 backfilling was awarded in fiscal year (FY) 2015 and is currently in progress. During 2015, real estate acquisition for the Kissimmee River Headwaters Revitalization Project also progressed. Completion of restoration construction and land acquisition is expected in 2020.
- **Rolling Meadows – Phases I and II.** The purpose of this project is to restore the historical Lake Hatchineha floodplain wetlands and habitat in the Rolling Meadows property, which was purchased jointly by the SFWMD and DEP as part of the Kissimmee Headwaters Revitalization Project. The project will also provide ancillary water quality, timing, and distribution benefits. In 2015, Phase I design and permitting was finalized; construction began in November 2015, with

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expected completion by December 2016. Phase II of this project, which involves the further restoration of approximately 580 acres of wetlands, is contingent on future funding.

- **Dispersed Water Management (DWM) Program.** There are two DWM projects in construction and eleven operational DWM projects in the Lake Okeechobee BMAP. Projects highlighted in the presentation include Nicodemus Slough and West Water Hole. Nicodemus Slough became operational in 2015 and currently has the largest estimated annual storage benefit (33,860 acre feet per year) of any single DWM project in the Lake Okeechobee BMAP. West Water Hole is located in the Indian Prairie Sub-watershed and is a water quality project that has been extremely effective in removing phosphorus.

Florida Department of Agriculture and Consumer Services (FDACS) Updates

Katie Hallas delivered a PowerPoint presentation on the FDACS activities supporting the Lake Okeechobee BMAP. First, Katie provided an update on the FDACS Agricultural BMP Program. Katie noted that FDACS has been working on developing BMP manuals for all of the commodities being commercially produced, and now all of Florida's major commodities are covered by a BMP manual. The Florida Vegetable and Agronomic Crops is the most recent BMP manual to be updated and the Florida Dairy Operations Manual became effective in January 2016. Katie added that the dairy manual contains a flowchart for dairymen to use to see if their site is phosphorus or nitrogen limited, based on geographic location and their proximity to waterbodies.

Katie stated that FDACS intends to adopt a revised poultry manual by the end of 2016 and the 2008 Florida Cow/Calf BMP Manual is currently being updated. The Sod BMP Manual is also undergoing revision. Katie noted that the Office of Agricultural Water Policy (OWAP) has recently reorganized and as part of this process, a schedule has been set out for BMP manual revisions.

Second, in terms of BMP enrollment, Katie reported that they have tracked NOIs in the northern and southern sub-watersheds. A map of the enrolled areas as of December 2015 was shown. Katie commented that the Lake Okeechobee BMAP focuses on the six northern sub-watersheds, so the annual report focuses on those areas but there are also enrolled acres in the sub-watersheds south of the lake. Once the Watershed Assessment Model (WAM) has been updated, the model will be used to estimate the reductions from BMP implementation in the BMAP annual reports. The majority of the current enrollment is for cow/calf operations, as they are the most common in the basin and the manual has been in place for a long time.

Katie reviewed the enrollment numbers for Fisheating Creek, where most of the enrollment is in cow/calf and hay/forage operations. In the Indian Prairie sub-watershed, the enrollment is primarily in cow/calf and citrus, which some sod acreage enrolled. Similarly, the Lake Istokpoga enrollment is mostly with citrus and cow/calf operations. In the Lower Kissimmee sub-watershed, the enrollment is primarily cow/calf operations and vegetable and agronomic crops as is the Taylor Creek/Nubbin Slough enrollment. In the Taylor Creek/Nubbin Slough area, there has been a land use change of 25,000 acres, which will be reflected in the WAM update. Katie reported that in the Upper Kissimmee sub-watershed, cow/calf and citrus enrollments are the most common.

Third, Katie provided an update on the Northern Sub-watershed agricultural land uses. FDACS has completed updated for three sub-watersheds: Taylor Creek/Nubbin Slough; Indian Prairie; and

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Fisheating Creek. The Lake Istokpoga update is in progress. The Upper and Lower Kissimmee sub-watersheds will be updated as resources allow. These updates are being provided to SFWMD and DEP as well as to Del Bottcher for inclusion in the WAM update.

Fourth, Katie described the northern sub-watershed compliance assistance process. Katie explained that a pilot effort was conducted in the Lower St. Johns River Basin to improve BMP compliance and enrollment increased by more than 50,000 acres. Now FDACS is using a similar process in the Lake Okeechobee Basin, beginning in the Taylor Creek/Nubbin Slough sub-watershed. There are ongoing efforts in the Indian Prairie sub-watershed, and Fisheating Creek will be the next focus. The remaining sub-watersheds are Lake Istokpoga, Upper Kissimmee, and Lower Kissimmee.

FDACS uses property appraiser data to identify land owners with sites of more than 50 acres. These sites are compared to the FDACS BMP enrollment data. The owners who do not appear to have their commercial agricultural lands enrolled, letters are sent to them by FDACS. FDACS has sent 125 letters and has achieved a 92% response rate. The first letter was sent in May 2015 and the second letter in January 2016. The five landowners who did not respond received a letter from DEP and DEP will follow up with a second letter and with enforcement actions, if necessary.

Fifth, Katie provided a cost-share update. FDACS released two solicitations and funded seven projects in 2014 and four projects in 2015, focusing on waste and stormwater management. FDACS is currently gathering data from dairies in order to estimate load reductions from their projects.

FDACS is also conducting a cost-share review to gather information on TP and TN efficiencies of common cost-share projects. This information will be used to develop a standard methodology to calculate TN and TP treatment efficiencies as well as storage capacities.

Sixth, Katie gave an update in the Implementation Assurance (IA) Program. Katie reported that FDACS efforts started in 2014 to revise and restructure the IA Program. The program started in 2005 in the Suwannee River Basin and was begun in 2007 in the Lake Okeechobee Basin. Revisions to the program are required by recent legislation (Chapter 2016-1). FDACS plans to initiate rulemaking by January 1, 2017. This program follows up after BMP enrollment and will build on the existing IA Program. The program activities include internal working groups, stakeholder outreach, and the BMP Program.

WAM Update

Del Bottcher with Soil and Water Engineering Technology started the update on the WAM status. Del showed a map of the Okeechobee BMAP boundary and noted that the modeling objective is the mirror how the system behaves so that we can make better decisions. The objectives of the modeling include the following: Quantifying water and nutrient contributions by land use; evaluating alternative abatement scenarios and projects; evaluating the impact of new development and projects; help to set targets for TMDL and BMAP compliance; and evaluate compliance of programs.

Del explained that the WAM was developed specifically for Florida conditions and it simulates surface and ground water flows as well as total suspended solids and nutrient loadings. It predicts dissolved oxygen and chlorophyll-a when combined with the water quality analysis simulation program (WASP) model. The WAM model is geographic information system (GIS)-based and simulates land sources at the field scale. The model handles complex flow networks and has a user-friendly interface.

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Del showed a map of the various basins where WAM has simulated the watershed. The model has been widely used in Florida. The development of WAM in the Lake Okeechobee Basin began in 2008 for the northern sub-watersheds. In 2013, WAM simulated pre-development conditions and hydrography. Currently, there are three major efforts underway: Recalibration of the Okeechobee basins through 2013; sensitivity and uncertainty analysis; and modeling the southern sub-watersheds.

Del described the coverages being used in these efforts such as soils, ground water flows, rainfall, streams and topography. Del noted that legacy phosphorus is part of the starting estimate. There may be 190 MT of legacy phosphorus and there may be more now than when the estimate was made.

Andy James then provided an overview of the WAM sensitivity and uncertainty analysis. Andy explained that the WAM is comprised of several sub-models and sub-sub-models, where the results of one program are fed into another. The model is complex in order to consider a lot of water quality parameters.

Andy explained why sensitivity and uncertainty analyses are performed. Over a thousand parameters are considered, in aggregate, in the model and it is important to understand which factors are driving the results. These analyses are done to see how the model performs when the inputs are not precisely known. We know that model inputs always have a degree of uncertainty and we want to know how these uncertainties affect the model outputs in terms of accuracy and reliability.

The goals of the process are to quantify the overall uncertainty in the model outputs as influenced by the input data and the model algorithms. The analyses can attribute the degree of uncertainty in the outputs back to the inputs. This process identifies the important model parameters for recalibration and evaluates the model robustness. When we know which parameters are most influential, we can better spend our time collecting and refining the most important ones.

The sensitivity analysis focuses on how the uncertainty in the model output can be portioned back among the sources of uncertainty in the model inputs. The sensitivity analysis is complementary to the uncertainty analysis, and it is done as part of the same set of simulations. The sensitivity analysis tests the robustness of the model results in the presence of uncertainty. It also allows us to highlight those model inputs that cause significant uncertainty in the output predictions.

Andy explained that the project steps included a literature review, the selection of a study basin, and sensitivity and uncertainty analysis for the WAM sub-models called BUCSHELL (EAAMod and GLEAMS) and BLASROUTE (which models overland flows and streams).

Andy explained how the study basin was selected and why the size of the study basin was important. Andy showed a map of the Taylor Creek/Nubbin Slough model domain and a subset of the area that was selected as the study basin. The study basin is in the upper section of the Taylor Creek/Nubbins Slough sub-watershed and includes the Taylor Creek STA. Andy showed the land uses in the study basin, including lots of improved pasture. For the analyses, Andy explained that they run a large set of simulations for a total of 250,000 simulations.

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The results of the uncertainty and sensitivity analyses indicate that for the land source models (EAAMod and GLEAMS) the soil, nutrient, and weather parameters dominate the output. For the BLASROUTE model, the analyses are still underway and only the screening results are available. For now, the channel parameters appear to be the most influential as well as the attenuation coefficients for TN and TP and the structure controls for the Taylor Creek STA.

Dan Rutland commented that the model updates are a tremendous effort and that much of the world doesn't realize the effort that is going into the restoration of the lake.

Del Bottcher reviewed the WAM modeling objectives for the southern sub-watersheds and noted that the modeling team wants feedback and we need the model to simulate the area corrected. The objectives are to fill in the missing sub-watersheds within the BMAP boundary; to extend the DEP load estimator tool, to provide a tool for assessing future abatement strategies; to model existing and future considerations; and to focus on the sub-watershed level (not the farm level).

Del showed a map that indicated that the Lake Okeechobee BMAP boundary does through the middle of the Everglades Agricultural Area (EAA). He noted that the model extends to the discharge points to properly simulate the flows.

Del describe their "Task 4.1" and the data collection involved. He noted that the regional topography is very flat. There are known distributions of land uses, soils, and rain data. The water control structures are also very important to include in the model. Looking at the influence on Lake Okeechobee, a lot of the water goes south from the southern sub-watersheds, but sometimes the flows go towards the lake.

Del showed a graphic of the calculation reaches used by the model and explained the importance of setting boundary conditions. Irrigation sources are also modeled and considered as some are from deep ground water, some from shallow ground water, and some from surface water.

Specific projects are also incorporated into the WAM after the model is calibrated. Del noted that the water quality calibration uses actual water quality data to see how the model output compares with the water quality data.

Linda McCarthy asked which BMP projects will be included in the model as some are part of stormwater management systems. Del responded that the decision about whether to include a project depends on when they came online. If the project was not in place by 2007, then they will be added in the future, but will not be included in this update. There are nine large projects that are being included in the model updated. Linda asked if later, other projects can be added. Del responded that it would be possible to add additional projects in the future.

Paul Gray asked if you can use the WAM to simulate the benefits of potential projects. Del responded that the model can be used to predict project benefits and the model was used previously to predict the benefits of some of the dispersed water storage projects.

Herb Harbin asked if different kinds of pasture with different stocking rates can be used to estimate variations in loading. He added that most loads come from fertilizer and that agriculture depends on true science to support their efforts and to reflect what they do. Del thanked Herb and stated that they have

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looked that these factors. The first model overestimated stocking rates and had to be adjusted. The Archbold Research Station has been a great resource for data, but we need a lot of data to estimate the loads correctly. Del added that the legacy phosphorus loads take time to work through the system.

Marisa Carrozzo asked about the lake structure, flows in and out and the water levels and what other factors are considered. Del responded that the watershed is defined and we know what the discharges are, so we can set the controls to maintain certain control elevations. The model cannot simulate other lake releases not caused by the watershed inputs however.

Yogesh Khare asked what land use data were being used. Del responded that the 2008 and 2009 SFWMD land use data were being used in the model. Leslie noted that excellent adjustments are being made to the land use data based on the FDACS ground-truthing efforts that Katie described and that those sub-watersheds where the ground-truthing has been completed will be used in the modeling update. Del offered to speak to Yogesh after the meeting in more detail about the data used.

BMAP Next Steps

Sara noted that she will post all of the presentations from this meeting on the Lake Okeechobee ftp site. Sara described the new BMAP requirements based on recent legislation, including those specific to the Northern Everglades watersheds and Lake Okeechobee. Based on these requirements, there will be enhanced integration of the water management district protection plans and the BMAPs. There are also additional reporting requirements including 5-year BMAP progress reports and an annual Northern Everglades Coordinating Agencies Report.

Sara added that all new or revised BMAPs must include a priority ranking of projects and planning level cost estimates. Where financial assistance has been provided by DEP, the water management districts or other entities, those must be identified. For the BMAPs in the Northern Everglades, projects to achieve the TMDL in 20 years must be identified, along with 5-year milestones to measure progress and a 5-year progress report.

In January 2016, Sara reported that DEP solicited projects in the South Florida BMAP areas. In the Lake Okeechobee BMAP area, the 10 projects submitted included STAs, DWM, alum treatment, and nutrient separating baffle box projects.

Sara described the action items needed that included the following: Stakeholders should submit comments on the 2015 Annual Progress Report by May 17, 2016; all those collecting water quality data should complete their uploads to the Florida STORET database; work should continue on WAM with results expected in fall 2016; continue project collection; and the next annual meeting will occur in the spring or summer 2017.

Questions, Comments, and Discussion

Paul asked if the CERP components will be revisited this fall. Leslie responded that there are still in discussions with the USACE. The formulation will start in 2016, but they will have a better idea of how things will proceed as they move through the new SMART planning process. Kevin added that more coordination will be needed as a result of the new legislation. Sara noted that DEP is tracking all the projects listed in the BMAP, even if they are not led by DEP.

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Marisa asked if a water quality analysis will be included in future reports. Sara responded that water quality results may be part of future reports, and the agencies are working on the coordination of these analyses and reporting.

Adjourn

The meeting adjourned at 11:17 AM.

Action Items

- Sara asked everyone to provide project treatment areas to her, if not already submitted.
- Sara asked for feedback on the water quality analysis approach, as some of these analyses may be redone and reported in future years. Please send any comments to suggestions to Sara at Sara.Davis@dep.state.fl.us.
- Del offered to speak to Yogesh Khare after the meeting in more detail about the data used.
- Sara noted that she will post all of the presentations from this meeting on the Lake Okeechobee ftp site.
- Stakeholders should submit comments on the 2015 Annual Progress Report by May 17, 2016.
- All those collecting water quality data should complete their uploads to Florida STORET.
- Work should continue on WAM with results expected in fall 2016.
- Continue project submittals (stakeholders) and collection (DEP).
- DEP will plan the next annual meeting in the spring or summer 2017.