

Caloosahatchee and Everglades West Coast Basin Management Action Plans

Annual Meeting Summary

Wednesday, February 5, 2014

10:00 AM – 12:00 PM

SFWMD Lower West Coast Service Center – 1st Floor Large Conference Room

2301 McGregor Boulevard, Fort Myers, Florida

Attendees

Beth Alvi, FDEP	Anura Karuna-Muni, Lee County
Mike Bauer, Naples	Danette Kinaszczuko, Collier County
Carmela Bedregal, SFWMD	Katie Laakkonen, Naples
Karen Bickford, Lee County	Laura Layman, SFWMD
Karen Bliss, Charlotte County	David Liccardi, Bonita Springs
Jennifer Carpenter, FDEP	Vincent Miller, Fort Myers
Marisa Carrozzo, Conservancy of Southwest Florida	Julie Neurohr, FDEP
Kevin Carter, SFWMD	Kelly O’Nan, Hendry County
John Cassani, Watershed Council	Roland Ottolini, Lee County
Cheryl Clark, FDEP	Tony Pellicer, Lee County
Tim Denison, JEI	Ximena Pernet, SFWMD
Kim Dinkins, FDEP	Marcy Policastro, Wildwood Consulting
Holly Edmond, FDACS	Luke Polk, Florida Farm Bureau
Rebecca Elliott, FDACS	Ray Qualk, ECWCD
James Evans, Sanibel	Pete Quasius, Audubon
Phil Flood, SFWMD	Leigh Simmons, Lee County
William Hammond, CREW	Pamela Wade, SFWMD
Ed Hanlon, Watershed Council	Bill Walker, ECWCD
Janet Hearn, ATM	Charlie Walther, FDOH
Jennifer Hecker, Conservancy of Southwest Florida	Rhonda Watkins, Collier County
Connie Jarvis, Cape Coral	Ross Wherry, Estuary Consultant

Welcome and Opening Remarks

Beth Alvi thanked everyone for attending the first annual meeting for the Caloosahatchee Estuary and Everglades West Coast Basin Management Action Plans (BMAPs). It has been a little over a year since the BMAPs were adopted and good progress has been made with project implementation. The stakeholders will be presenting on their projects that were completed during the last year. Beth introduced Kim Dinkins as the new Florida Department of Environmental Protection Basin Coordinator for these BMAPs. Kim came from Marion County, and she has a background in water quality, storm water, and conservation. Beth also introduced Marcy Policastro and Tiffany Busby (who was not in attendance) with Wildwood Consulting, and they are supporting these BMAPs as well as several others across the state. The participants introduced themselves and the entity they represent.

Overview of the Caloosahatchee and Everglades West Coast BMAP Annual Progress Reports

Beth stated that both BMAPs were adopted in late 2012 so the activities included in the annual progress reports are those that were completed from December 1, 2012 through November 30, 2013. The reports include background information on the total maximum daily loads (TMDLs)

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and the BMAPs, activities implemented by the stakeholders, and information on the monitoring that occurred. Beth noted that since this is the first progress report for these BMAPs, the Department did not include a water quality analysis. They just confirmed with the stakeholders that the samples were collected and the data were uploaded to the Storage and Retrieval (STORET) database. A BMAP is developed to achieve a TMDL, and the Department uses a phased approach to identify projects, implement those projects, and then assess progress and next steps. The BMAPs include a list of projects and activities that will occur during the first BMAP phase, a monitoring plan to evaluate trends and identify areas of concern, and research needs. The BMAP process allows for participation of all stakeholders, which is helpful because the stakeholders have on the ground knowledge of the basin.

Everglades West Coast 2013 Progress Report

Beth stated that the Everglades West Coast BMAP addresses the TMDLs for Hendry Creek and Imperial River. The freshwater segment of both of these waterbodies has a total nitrogen (TN) target concentration of 0.74 milligrams/liter (mg/L) to address the low dissolved oxygen (DO) impairment. Hendry Creek also has a marine TN target concentration of 0.6 mg/L; however, for this phase of the BMAP, the 0.74 mg/L freshwater target was used. The TMDLs did not identify loading to different sources. Beth showed a map of the BMAP boundary for the Hendry Creek Basin. The TMDL was for two waterbody identification (WBID) numbers in the area, which were later combined into one WBID. Based on stakeholder input, the BMAP also addresses the entire watershed that contributes to the WBID so the BMAP boundary is larger than the TMDL boundary. The Imperial River Basin had an impairment for one WBID, which was later combined with an adjacent WBID. The BMAP basin also captures the entire watershed that contributes loads to the river. Beth noted that since the TMDLs did not identify specific source allocations, a spreadsheet model was created to determine allocations for the BMAP. The model is based on land uses, and the allocations were assigned using the amount of developed area within a jurisdiction. In the Hendry Creek Basin, Lee County, Catalina, the Florida Department of Transportation (FDOT), and agriculture (a very small area) are stakeholders. In the Imperial River Basin, Lee County, Bonita Springs, FDOT, and agriculture are stakeholders.

Kim Dinkins stated that the major projects that were completed during this phase of the BMAP were the Lee County Lakes Park Water Quality Restoration and Bonita Springs Felts Avenue Stormwater Treatment projects. The stakeholders will present on these projects in more detail. In addition, FDOT continued its street sweeping and illicit discharge training, the stakeholders provided many workshops on the fertilizer ordinance, and the Florida Department of Agriculture and Consumer Services (FDACS) continued to enroll agriculture in best management practices (BMPs). Kim noted that there is not much agriculture in the Hendry Creek Basin but FDACS has enrolled about 95% of the agricultural acreage in the Imperial River Basin. Bonita Springs, FDOT, and Lee County all continued their education and outreach efforts. The completed projects in the Hendry Creek Basin during the first year of BMAP implementation resulted in a TN reduction of 4,533 pounds/year (lbs/yr). The projects in the Imperial River Basin completed during the first year resulted in a TN reduction of 1,093 lbs/yr. The overall reduction, including those projects shown as completed in the BMAP, is 6,664 lbs/yr in the Hendry Creek Basin and 3,533 lbs/yr in the Imperial River Basin.

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For the BMAP monitoring plan, Lee County, the Department's South District, and Bonita Springs continued to sample. Kim noted that a detailed water quality evaluation would be conducted before the end of year four of the BMAP. All of the data collected are upload to STORET.

Lee County Lakes Park Water Quality Restoration Project

Anura Karuna-Muni stated that the Lakes Park Water Quality Restoration Project is located within the Hendry Creek Basin. Hendry Creek is impaired for DO, fecal coliforms, and mercury and the creek outfalls into Estero Bay. Prior to the 1950s, the project area was undeveloped and primarily uplands and wetlands. The headwaters of Hendry Creek originate north of the park. In the 1950s and 1960s, the project area was mined for limestone, which created the existing lakes. About half of Lakes Park is water (approximately 158 acres). The county purchased the land in 1978 and opened the park in 1984. The watershed area is about 2,000 acres, and the park receives discharge from residential and commercial properties. The Reflection Lakes development is located near the park. Lakes Park is a very active park with about 500,000 visitors per year with lots of activities available.

Anura noted that this project has a rich history. The Phase I water quality improvement project was done by a developer to the north of the Lakes Park Water Quality Restoration Project. The project was included in the Comprehensive Everglades Restoration Plan (CERP) or "Yellow Book." Therefore, Lee County worked with the U.S. Army Corps of Engineers (USACE) on the planning and design of the project during the period of 2000-2007. The county also developed a master plan for the park, and this project was included. The county has been monitoring water quality in the park for about 20 years. After USACE left the project, the South Florida Water Management District (SFWMD) and the county continued the project.

The Lakes Park Water Quality Restoration Project was a major investment by the county. The project included reconstruction of the existing water control structures, installation of aeration fountains, and removal of exotic vegetation. The county has also looked into different options for nutrient removal including floating islands, alum infusion, and a ultra-violet (UV) pilot project. In addition, the county designed and permitted the filter marsh. The project includes an east marsh and west marsh. Each of these marshes were previously a large lake, and the project added a series of earthen fingers to let the water flow through. Between the fingers is a channel with a littoral shelf on either side. There is a structure that connects the two marshes, and a trail that separates the east marsh from the west marsh.

During project construction, weekly onsite progress meetings were held. The first step in the process was to clear and grub the area. Then the lakes were dewatered so that the fingers could be added through excavation and grading. The water depth in the deepest part of the flow-way is about five feet. The project is designed so that when the water level rises, it flows over the fingers to prevent flooding. By August 2013, the vegetation planted on the fingers was starting to take hold. The county began monitoring the project a few months after construction was completed because it took time to put the instrumentation into place. Auto samplers were added on the west marsh, inflow, and outflow. The data from these samplers are available on the Lee County website.

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A participant asked how much it cost to build the filter marsh. Anura responded that the total cost was more than \$3 million, which included design, permitting, and construction. John Cassani noted that this was a Water Resources Development Act (WRDA) project with a \$10 million cost. He congratulated the county and SFWMD on completing the project for less money, even though USACE backed out of the project.

City of Bonita Springs Felts Avenue Stormwater Treatment Project

David Liccardi stated that the Felts Avenue Stormwater Treatment Project is located in Bonita Springs just east of Old 41 Road and immediately south of the Imperial River. The focus of this project was to treat the runoff prior to discharging into the river. There are an existing series of swales that carry residential and commercial stormwater to a discharge point in the river. Imperial River is listed as impaired by low DO with a causative pollutant of TN. David noted that once the BMAP was adopted, the city was required to remove 9,903 lbs/yr of TN over the next 15 year. The Felts Avenue project was one of the first steps to achieve this goal.

The city purchased four lots with buildings on them to construct this project. Approximately three-fourths of an acre from these parcels was dedicated to stormwater treatment. This project was designed to be a treatment train with the swales along Felts Avenue. The project includes a Suntree nutrient separating baffle box and dry retention. The removal efficiencies from this project are 70% for TN and 69% for total phosphorus (TP). David noted that he has heard about issues with the nutrient separators but the city has not had a problem. The project is designed to treat about 30 inches of water. The baffle box has three access doors to allow maintenance to remove the captured leaf litter and debris. Under high flow conditions, there is a gate that opens so that the water can flow as needed without backing up the system. The project works well under normal rain conditions. The total project cost was less than \$140,000, and it will reduce about 258 lbs/yr of TN.

Tony Pellicer asked what the size is of the contributing area to the project. David responded that the contributing area is about 36 acres of residential and commercial property. Roland Ottolini asked if the project cost includes the land. David responded that the cost does not include the land. Kelly O’Nan asked if the city is planning on duplicating this project in other areas. David responded that this could be an option. The city does not have a lot of space for projects but there is the possibility for additional land acquisition. John noted that since the Imperial River is impaired, all future development will have to meet the no degradation requirement so they will need to include treatment. David responded that the city’s land development code does require new development to include a treatment system that does not increase loading from pre-development. Ross Wherry asked if they had any problems with the city council and/or residents over the project costs. David responded that the project had to be approved by the city council, and they understand the BMAP and what needed to be achieved. The council wants to be proactive and they supported this project. The existing buildings on the land the city purchased were a blight for the neighborhood because they were vacant homes that were about to be condemned. This project was positive for the neighborhood so the residents also supported it.

Public Comment

Jennifer Hecker stated that the Department recently changed the DO standards, and she is hoping that they will create site-specific alternative criteria (SSAC) based the current TMDLs to keep

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the waterbody-specific information for this basin. Beth responded that the Department's agreement with the stakeholders when they started the BMAP process is that additional data are needed to assess the DO condition to determine what the concentration should be for the Everglades West Coast. The monitoring plan identifies stations to assess water quality, and the Department will be gathering information on ground water quality. Therefore, the Department is trying to gather information to assess what the DO standards should be for this area, and they are not planning on using the standard DO criteria. However, the results could be a different target than the TMDLs. In terms of the ground water study, it has taken a long time to install the wells. The wells are now in and data will be collected for two years. This study will include Hendry Creek, Imperial River, Lake Trafford, and Gordon River.

Jennifer asked if the project removal rates are based on presumptive BMP criteria or monitoring. Beth responded that the Felts Avenue project is based on standard criteria but water quality data were available for the Lake Park project. Jennifer noted that a lot of the information in the reports is based on modeling and assumed BMP efficiencies, and a water quality evaluation will not be done until year four. She asked if there is any effort by the Department to analyze the monitoring data and compare the results to what was expected for year one. Beth responded that the Department has not looked at the data yet. It would be shortsighted to wait for year four so they will be looking at data along the way. It will take a while for the projects to reach their full efficiency so time is needed to see changes in the water quality.

Caloosahatchee Estuary BMAP 2013 Progress Report

Beth stated that the Caloosahatchee Estuary TMDL is for three segments of the main stem of the river. The TMDL specifies a 23% TN reduction over the entire basin to meet seagrass light requirements in San Carlos Bay. In the TMDL, the load to the estuary from upstream of the S-79 structure is about 7 million lbs/yr from Lake O and 2.7 million lbs/yr from nonpoint source loading. The total loads from upstream of S-79 make up 84.1% of the loading to the estuary. The BMAP addresses only the nonpoint sources loads from below the S-79, which are about 1.7 million lbs/yr or 14.6% of the total load. The stakeholders in the basin include Lee County, Charlotte County, City of Cape Coral, City of Fort Myers, East County Water Control District (ECWCD), Lucaya Community Development District (CDD), FDOT, and FDACS. Beth noted that the local governments are already planning new projects for the second phase of the BMAP. The stakeholders should work with the Department when they are planning a project because the Department may be able to help with development and funding.

Kim stated that Fort Myers completed the Brookhill Drainage Improvements and Riverfront Improvement Phase I projects. She asked the city about their plans for planting as part of the Riverfront Improvement project. Vincent Miller responded that the city is considering the plantings but there may be maintenance requirements because the project is in an urban area. Kim stated that ECWCD completed the Mirror Lake Phase I project and Lee County completed the Powell Creek Filter Marsh and Extension projects. Both of these entities will present on these projects. The stakeholder continued their education and outreach efforts. Fort Myers is working on the Ford Street Filter Marsh project, and FDOT has various road widening projects underway that will include additional treatment. FDACS continued to enroll agricultural lands in BMPs. The projects completed during the last year resulted in an overall reduction of 6,127 lbs/yr of TN. With the projects completed in the BMAP, the total reductions are 140,465 lbs/yr

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of TN. The BMAP monitoring is conducted by Cape Coral, Fort Myers, Lee County, SFWMD, and the Department's South District. The purpose of the monitoring is to identify hotspots and water quality trends. SFWMD is also conducting monthly seagrass monitoring and the South District is doing bi-monthly seagrass monitoring. SFWMD also evaluates oysters semi-annually.

Lee County Powell Creek Filter Marsh Project

Anura stated that Powell Creek is a major tributary to the Caloosahatchee River. The watershed is several thousand acres, and the upstream portion is more agricultural while the downstream portion is more developed. Within the watershed, there an 80-acre in preserve, and the filter marsh makes up about 20 of these acres. When siting the project, the county tried to avoid environmentally sensitive areas, including gopher tortoise habitat and wetlands. The project involved the construction of interconnected shallow water areas with littoral shelves. The goal of the project was to divert water from the creek and bypass canal to a wet well, where it is pumped to the filter marsh for treatment. Anura noted that the bypass canal was constructed to help with flooding, and there are times where there is more water going down the canal than the creek. After the water goes through the filter marsh it is discharged back into the creek.

The wet well has a float system with a control panel to automatically operate the pump, which can handle 1,350 gallons per minute. The project was fully completed in September 2012. To help improve the DO concentration, a fountain was added to aerate the water before it goes into the marsh system. The removal cost is \$600 per lb of TN, which includes only the design and construction costs. The project has monitoring on the inflow and outflow structures, and this monitoring is also included on the county's website. The total cost of the project is about \$2.1 million, of which about \$1.8 million was for construction. Lee County, SFWMD, and the Department were cost share partners.

Anura showed the county's website (www.leegov.com) and noted that the live monitoring data could be found by clicking on "Departments" at the top of the page and then clicking on "Natural Resources." The links to the project monitoring are included under "Hydrological Monitoring." The monitoring data includes the current status, time series plots, and inflow and outflow data. Jennifer asked if the county only has flow data or if TN data are available. Anura responded that they currently have flow and depth data and they are working on adding water quality data. The county does collect monthly sampling at the inflow and outflow for nutrients.

ECWCD Mirror Lakes Phase I Project

Bill Walker stated that the Halfway Pond or Mirror Lakes project was originally designed as a three phase project, and Phase I was a pump station. ECWCD was looking to move water south to get it out of the Orange River basin, which goes to the Caloosahatchee River. They estimated that about 6,600 acre-feet of water originally went south during a storm. ECWCD knew they could not divert all of this water but the goal was to move a portion with this project. The Orange River basin is largest in the ECWCD and is the most populated. There were opportunities to reduce flooding along the Orange River and reduce nutrient loading to the Caloosahatchee River, recharge ground water, rehydrate wetlands, redirect water to the south, and provide additional stormwater storage. ECWCD owns about 500 acres of preserve land, which was purchased from a developer. The land includes lakes and wetlands. The purpose of the project is to pump water out of the canal that flows to Orange River, and use the water to

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rehydrate the preserve areas. Bill noted that the original pump was too small so it did not cause a change in water levels. Therefore, ECWCD used a larger pump. During the high rains, the pump has to be shut off. In addition, an outfall from one of the lakes failed so they had to dry the lake out to replace the culvert. This occurred in August so the pumping to this area did not begin again until September. As part of this project, ECWCD removed the old corrugated pipes and replaced them with concrete pipes and a pump. There is a large (24 inch or 30 inch) pipe in place and ready for a pump to move water to the south. Bill noted that it took about four months to complete the project. For the period of from June 2013 to December 2013, they pumped 842 acre-feet of water into the system. The total project cost was \$175,000.

Upcoming Activities

Beth stated that the Department is working on the TMDL for the Caloosahatchee River above S-79, and the next workshop will be in late March. Once the TMDL is adopted, the Department anticipates starting a BMAP for the freshwater portion of the river. There are also impairments in the tidal portion of the river in Popash Creek, Billy Creek, Cape Coral, and Deep Lagoon Canal. Beth noted that as the stakeholders are planning projects for next phase of the BMAP, they should think about projects in these areas to help both the existing BMAP and new TMDLs.

Beth stated that during BMAP development, the stakeholders had asked about credit for removing septic systems through sewerage. At that time, the Department did not have the ability to calculate the associated load reductions but they now have the ArcNLET model, which is a public domain model. Lee County and Bonita Springs have already downloaded the model. Additional data will be needed to calibrate the model but the stakeholders can start using it with the existing data to see the results. Ground water data would be helpful to calibrate the model.

Hendry Creek has a TMDL for fecal coliforms, and the Department worked with the stakeholders in that area to conduct a “Walk the Watershed” to look for potential sources and determine a plan to address those sources. Beth noted that another meeting will be held once the TMDL workshop has been completed so that the stakeholders can start planning for the next BMAP phase.

Public Comments and Wrap Up

John stated that he was disappointed that a water quality analysis was not completed since the vast majority of projects occurred before the BMAP was adopted. There has been no evaluation to determine if those projects worked, and waiting another two or three years to assess the benefits is not smart. Delaying the water quality evaluation gives people the false sense of security that what they are doing is working. John noted that he pulled data from STORET and found that TN is going up in a lot of the tributaries. Beth responded that the Department will not wait several years before evaluating the water quality data. This analysis was not done for the reports but the Department will start working on it soon. Jennifer stated that she would like the Department to give a timeline for doing this evaluation and for when the results will go the public. The annual report also does not address seagrass and whether it is improving. The stakeholders need more information so they can adaptively manage the plan. Beth responded that she cannot give a timeline now but she will discuss this with other Department staff and then provide an idea of the timeline.

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Roland asked what the timeline is for the agricultural entities to enroll in BMPs. Beth responded that the BMAPs said that FDACS would focus on certain areas, such as Babcock Ranch in the Caloosahatchee Estuary, and major commodity types. FDACS is working with growers to determine the most appropriate BMPs, and they have made progress with enrollment. In the BMAP, the rangeland land use classification was not assigned to agriculture and FDACS recently informed the Department of this issue. Holly Edmond added that it will be difficult to achieve 100% enrollment because the land use data are ten years old and there have been changes, but FDACS is working to enroll all bona fide agriculture in BMPs. Karen Bickford noted that smaller hobby farms do not fall under FDACS' purview, and she asked who is in charge of these farms. Beth responded that the Department and FDACS have been working together on a way to reach out to these landowners to get them to implement BMPs. Marion County has had some success in developing their own program to outreach to horse farms. Pam Wade noted that SFWMD has a regulatory BMP program to pick up areas that the FDACS program does not apply to.

James Evans asked what BMP program applies to golf courses. Pam responded that the golf courses will be addressed by the SFWMD rule, once adopted. Kim added that the Department has a manual that golf courses can voluntarily enroll in, and some counties have been working on practices. However, she does not believe there is a rule requiring that golf courses enroll. Beth noted that they would look into this and provide more information.

Marisa Carrozzo asked if more detail could be provided on the progress made for the ground water monitoring. Beth responded that the sampling would start within the next two months at about 30 wells, which are a combination of new and existing locations. Samples will be collected for a two-year period. Marisa asked if the data could be uploaded to the FTP site, once available. Beth responded that the Department would share the data. David asked how long it would take to post the data. Beth responded that some of the analysis will be done by the Department and the isotope evaluation will be done by an outside laboratory. Once the first round of samples has been analyzed, she will have an idea of how long it will take to provide the data.

Adjourn

The meeting was adjourned at 11:54 AM.

Action Items

- The Department will determine the timeline to complete a water quality evaluation for both BMAPs and provide feedback to the stakeholders on the timeline.
- The Department will provide information on available golf course BMP programs.