

**St. Lucie River and Estuary Basin Management Action Plan (BMAP)  
Annual Meeting Summary**

*Wednesday, December 12, 2018 at 10:00 AM  
Martin County Building Permits Office  
Conference Rooms A & B  
900 Southeast Ruhnke Street, Stuart, FL*

**Attendees**

|                                           |                                            |
|-------------------------------------------|--------------------------------------------|
| Cassandra Armstrong, SFWMD                | John Maehl, Martin County                  |
| Irene Arpayoglou, FDEP                    | Dale Majewski, City of Port St. Lucie      |
| Bill Baker, MacVicar Consulting           | Mike Middlebrook, St. Lucie County         |
| Kristene Bonilla, DEP                     | Anne Murray, Martin County                 |
| Sara Davis, DEP                           | Nick Muzia, Martin County                  |
| Patrick Dayan, St. Lucie County           | Stephanie Nevandusky, E Sciences           |
| Amy Eason, AECOM                          | Greg Nolte, Captec                         |
| Vincent Encomio, UF-IFAS                  | Stacey Ollis, SFWMD                        |
| Cathy Foerster, ATM                       | Marky Perry, Florida Oceanographic Society |
| Marcy Frick, Tetra Tech                   | Chris Powell, City of Port St. Lucie       |
| Stan Ganthier, DEP                        | HM Ridgely, Evans Properties               |
| Kathleen Greenwood, FDACS                 | Gary Ritter, Florida Farm Bureau           |
| Bill Griffin, City of Stuart              | Batchan Rodgers, FDEP                      |
| David Huggins, DEP                        | Doug Smith, Martin County                  |
| Dianne Hughes, Martin County              | Michael Uhazie, Martin County              |
| Lisa Krinsky, UF-IFAS                     | Jose Vega, St. Lucie County                |
| Paul Laura, Florida Oceanographic Society | Don West, St. Lucie County                 |
| Milton Leggett, City of Stuart            | Kevin Williams, DEP                        |
| Drew Liddick, DEP                         |                                            |

**Welcome and Opening Remarks**

Sara Davis, Florida Department of Environmental Protection (DEP) Environmental Manager, welcomed everyone to the St. Lucie River and Estuary BMAP annual meeting. Sara noted that the meetings earlier this year focused on the 5-Year Review, which is posted to the DEP website on the BMAP page. Sara noted that Breanna Crowell, DEP Basin Coordinator, is not at the meeting because her mother passed away suddenly, and she moved back home to help her family. Breanna has been working for DEP remotely so the best way to reach her is through email. The stakeholders can also contact Sara with any questions. Since Breanna is out, Marcy Frick, DEP consultant with Tetra Tech, will be presenting today. The participants introduced themselves and the entity they represent.

**BMAP Overview**

Marcy stated that the total maximum daily loads (TMDLs) for the St. Lucie River and Estuary were adopted by DEP in 2009. The TMDLs were set for total nitrogen (TN), total phosphorus (TP), and biochemical oxygen demand (BOD). The BMAP focused on achieving the TN and TP TMDLs with the assumption that these reductions would also reduce BOD. The TMDL TN and TP concentrations were set at the Roosevelt Bridge in the estuary, and the South Florida Water Management District (SFWMD)

has a monitoring station at this location. The BMAP was adopted by DEP in June 2013, and the 5-Year Review was completed in June 2018. The final 5-Year Review report is posted to the DEP website.

### **Statewide Annual Report (STAR)**

Marcy stated that the STAR is being prepared to meet Florida Statute requirements, and the report must be submitted to the Legislature and Governor by July 1 each year. Previously, DEP prepared annual reports on the anniversary of BMAP adoption so the St. Lucie River and Estuary BMAP annual report would be developed in June. With this new requirement for the STAR, progress for all BMAPs are reported together on a calendar year. BMAP annual meetings will still be held to give an opportunity to hear updates specific to each BMAP.

The first STAR was submitted to the Legislature and Governor on June 29, 2018. The STAR 2018 covered calendar year 2017. Through December 21, 2017, 221 projects were completed in the St. Lucie River and Estuary BMAP. Marcy noted that the completed projects include ongoing efforts, such as education and street sweeping, since the stakeholders already received these credits. In addition, there were 26 projects underway or planned. The completed projects have an estimated reduction of 532,312 pounds per year (lbs/yr) of TN and 139,736 lbs/yr of TP. These reductions are 51 % of the TN required reductions and 35 % of the TP required reductions. Marcy noted that as part of the BMAP update, the allocations and project credits will be recalculated, so these numbers may change, and this will be discussed later in the meeting.

Marcy stated that the stakeholders should have received an email from Breanna in early November with their project table and instructions for making updates for the STAR. Marcy noted that it is important that any changes be highlighted so that DEP can ensure the updated information is included in the STAR. For the STAR 2019, project updates should be provided through the end of 2018 (December 31, 2018) and any new projects should be added. The project updates should be sent to Breanna and Sara by January 15, 2019. Once DEP receives all the BMAP updates, they will work on preparing the STAR for submittal to the Legislature and Governor by the July 1 deadline.

Marcy noted that DEP created a St. Lucie BMAP story map using the project information provided for the STAR and 5-Year Review. The story map is available on the DEP website on the BMAP page, and Marcy showed the information on the webpage.

### **Stakeholder Presentations**

Dianne Hughes provided an update on the St. Lucie Shores water quality project. Martin County worked with SFWMD to obtain the land for this project through a land swap through the SFWMD surplus lands program. There is wetland on the site that needed to be protected, so Martin County added a seepage barrier. The project treats 286 acres within the Old Palm City area near the All American Ditch. There is a 2.9-acre treatment lake in the front of the property and a 5.6-acre treatment lake in the back of the property before it discharges to the North Fork of the St. Lucie River. The project helps to reduce flooding in the area and provides water quality treatment before it discharges to the river. Martin County also removed exotic vegetation as part of the project. Dianne showed a video of the project. Dianne noted that one of the challenges was working with the two communities on either side of the project parcel because they were concerned about the activity that would be brought to the area. Martin County conducted extensive coordination with these neighborhoods before moving forward with project construction.

Patrick Dayan asked if there were any flooding concerns for the nearby neighborhoods that discharge to this project. Dianne responded that there were flooding concerns that this project helped to address. No flooding occurred during the large rain events in May 2018. Patrick asked if Martin County has any plans to add passive recreation or public access to this project. Dianne responded there is public access to this site off Mapp Road and there is a gate towards the back of the facility to limit entry. Commissioner Doug Smith added that Martin County has been trying to design their projects to meet flooding, water quality, and recreation goals, and they have been successful in doing this. John Maehl stated that Martin County recently spoke with the Florida Fish and Wildlife Conservation Commission about stocking some of the treatment areas to provide a fishing opportunity while keeping water quality treatment as a first priority. Amy Eason asked if Martin County has determined how often they will have to harvest vegetation from the project. Nick Muzia responded that they are investigating what harvesting will be needed. They are currently only conducting some dredging and invasive species control. Amy noted that with the nutrient uptake by the vegetation, she thought harvesting would be needed. Dianne responded that they are still investigating what is needed because some of the vegetation is not growing. Stan Ganthier asked if any water quality monitoring is required for the project. Dianne responded that water quality monitoring is required, and the county should have a report on the results by the end of the summer. Stan asked if the project includes any chemical treatment. Dianne responded that this project does not have chemical treatment. HM Ridgely asked if there is a map showing the basin treated. Dianne responded that she has a map but not with her.

Marcy asked if any of the other stakeholders would like to give an update on their project activities for the last year. Patrick stated that St. Lucie County received the final report for the Citrus/Seager project that treats a 40-acre basin. This area is an older neighborhood that had issues with flooding. The runoff used to drain through a small ditch but now there is a four-acre pond to provide water quality treatment and to help with flooding. The county is also looking to add aeration to the pond with solar-powered aerators and nutrient uptake using vegetation. Patrick noted that he will have more information to provide for the next annual meeting. Marcy stated that the stakeholders should start thinking about what updates they may want to provide for the next annual meeting.

### **BMAP Update**

Marcy stated that a detailed water quality analysis is included in the 5-Year Review and she provided a summary of the results. Trend analyses were conducted on BMAP stations that had the best data availability and sampling frequency. Data were analyzed at six structure stations and nine estuary stations to look for trends in concentrations and loads (only at the structures). For the TN concentrations, three stations had significantly decreasing trends and 12 stations did not have significant trends. For the TP concentrations, two stations had significant decreasing trends, 12 stations did have significant trends, and one station had a significant increasing trend. None of the six structure stations had a significant trend in TN loads. For TP loads, five stations had no significant trends and one station had a significant increasing trend.

Dianne stated that there was discussion during the last meeting about the station on the inlet with the increasing TP concentration and the station at Lake Okeechobee with the increasing TP load. She asked if DEP had any information about these trends. Marcy responded that the water quality evaluation for Lake Okeechobee is just getting started as part of that BMAP 5-Year Review. Sara added that DEP does not have enough information to determine what is occurring near the inlet station and this station is

technically outside of the BMAP boundary. Gary Ritter asked what the period of record is for the water quality evaluation. Marcy responded that it was a ten-year period from water year 2008 through water year 2017. Sara added that these years were selected to have about five years before and five years after BMAP implementation.

Marcy stated that the BMAP update will occur in 2019 using the recommendations from the 5-Year Review. The milestones for project implementation were set as part of the 5-Year Review. The goal for the first five years, in the adopted BMAP, was to achieve 30 % of the TN and TP reductions. The stakeholders wanted to achieve the TMDL within the original 15-year timeline, so the 10-year milestone is 75 % of the TN and 65 % of the TP reductions, since more TN reductions have occurred to date, and the 15-year milestone is to achieve 100 % of the reductions. The allocations and project credits will be updated using the enhanced Watershed Water Quality Simulation (WaSh) model. The model includes the revised BMAP boundary based on improved information about the hydrology and adds the coastal basins that were recommended in the adopted BMAP. The BMAP monitoring stations were also tiered to help with future water quality evaluations.

Marcy noted that the allocations will be calculated by clipping the WaSh model to the stakeholder jurisdictional boundaries, with any changes that have been coordinated with DEP, to determine each entity's starting load. The required reductions will then be assigned based on percentage of the starting load from each stakeholder. For instance, if a stakeholder is 10 % of the starting load, they will receive 10 % of the required reductions. The required reductions will be determined by sub-basin but will be added together to provide one overall TN and TP reduction per stakeholder. This approach was used for the current BMAP allocations. During the last meeting, there was discussion about changing the allocation approach for the special districts. The current allocations are based on all area within the special districts, but they do not have the authority to address the urban and agricultural land uses. For the BMAP update, the special districts will be assigned their canal and right-of-away areas. DEP has been talking with each of the districts to determine what best management practices (BMPs) they currently implement to assign a list of required BMPs for the BMAP. These BMPs include items such as removing sediment from the canals, maintaining a buffer around the canals to prevent nutrients from entering through mowing and other maintenance, maintaining water control structures, and working with the Florida Department of Agriculture and Consumer Services (FDACS) to help reach out to growers. The BMAP will include the required BMPs for each special district, and the districts will need to report on their activities related to these BMPs annually.

Marcy stated that the updated allocations were not available for this meeting. While the WaSh model is working correctly, a new tool was added to the model to provide output for any polygon, such as jurisdictional or project boundaries. In using this tool, DEP realized that instead of providing the nutrient attenuation all the way to the compliance point in the estuary, attenuation was only occurring to the polygon boundary. Wood is providing technical support to DEP and is working to correct this issue. Once the attenuation has been corrected, DEP can calculate the allocations and recalculate the credits from all the submitted projects. DEP will then hold one-on-one meetings with the allocation stakeholders to discuss the draft allocations, revised project credits, and any additional projects that are needed to meet the next milestone.

Dianne asked what the timeline is to have updated allocations. Sara responded that the goal is to have updated allocations in the spring, but this depends on how long it takes to fix the attenuation in the

clipping. Doug asked if DEP will provide updates on the boundaries. Marcy responded that DEP is using the jurisdictional boundaries provided by the stakeholders and have been coordinating on any changes. Dianne added that the BMAP boundary has also changed, which added more area to Martin County's allocation from the current BMAP. Sara noted that DEP is not making any changes to the boundaries without a request from the stakeholders.

### **Next Steps**

Marcy stated that stakeholders should submit project updates for the STAR to Breanna and Sara by January 15, 2019. DEP will continue to work on updating the allocations and recalculating the project credits and will then hold one-on-one stakeholder meetings. DEP hopes to have a draft BMAP report for the next meeting in spring 2019.

### **Public Comments and Wrap Up**

Mark Perry asked if the chart showing the TMDL progress is based on calculations and the water quality trend analysis is based on measured data. Marcy responded that the project reductions were estimated based on literature values for the project type. Where there are measured data, those data are used to estimate the project reductions. The water quality trends are based on measured water quality data. Sara added that DEP uses both the estimated project reductions and water quality data to evaluate the BMAP progress. It is difficult to monitor all projects but where there are project data, those data are used. Mark noted that agriculture is one allocation. He asked how DEP works with agriculture and how do they calculate/monitor the load reductions. Sara responded that for the St. Lucie BMAP, the agricultural reductions were estimated using data from Del Bottcher's studies. DEP works with FDACS to review data on the BMPs and the BMP manuals. Mark noted that agriculture received credits for both land use changes and BMP enrollment. Sara responded that the land use change credit was calculated based on the difference in the event mean concentrations for the land uses. Sara noted that the project credits will be recalculated using the new WaSh model. Mark stated that there is a meeting tomorrow for the Lake Okeechobee BMAP. When preparing the St. Lucie BMAP, the assumption was made that the Lake Okeechobee loads would be addressed. He asked what the status is for evaluating the loads from the Lake Okeechobee basin. Sara responded that this will be done as part of the 5-Year Review, which is just starting for the Lake Okeechobee BMAP and is due in December 2019.

Gary noted that one of the biggest challenges throughout the state is legacy nutrients and how they are influencing water quality. While the St. Lucie Basin water quality trend analysis showed no significant trends, the trends could be positive if legacy loads from the soils were removed. Sara noted that the water quality evaluation was a good first step to evaluate trends and there were not a lot of increasing trends, probably due to all the projects that have been implemented. There are still water quality issues in the basin, so work needs to continue.

### **Adjourn**

The meeting was adjourned at 10:48 am.

### **Action Items**

- Stakeholders should submit project updates for the STAR by January 15, 2019.
- DEP will schedule one-on-one meetings with the allocation stakeholders, once the allocations have been updated and the project credits recalculated.