

**Banana River
Basin Management Action Plan (BMAP)**

Technical Meeting Summary

Friday, October 9, 2009

9:30 AM – 11:30 AM

*David R. Schechter Community Center, Cafeteria
1089 South Patrick Drive Satellite Beach, Florida 32937*

Attendees

Tracey Askew, SpecPro	Darren May, Cape Canaveral AFS
Diane Barile, Florida Institute of Technology	Dianne Mercum, Citizen
Virginia Barker, Brevard County	Terry Mott, Citizen – Viera
Robert Berish, Morton Salt	Nicholas Murdock, Patrick AFB
Ernie Brown, Brevard County	Robert Musser, Canaveral Port Authority
Amy Burch, SpecPro	Marcy Policastro, Wildwood Consulting
Jacqueline Burns, Indian Harbor Beach	Allen Potter, Satellite Beach
Tiffany Busby, Wildwood Consulting	Robert Potts, E-Sciences
June Clark, Cape Canaveral	Thomas Price, NASA
Mark Dixon, Patrick AFB	Jeff Ratliff, Cape Canaveral
Douglas Durham, NASA	Joanie Regan, Cocoa Beach
Steve Dyer, SpecPro	Troy Rice, SJRWMD IRL NEP
Gordon England, Stormwater Solutions	John Royal, Brevard County
John Fergus, Satellite Beach	Ariane Staples, SpecPro
Chris Ferraro, FDEP	Joel Steward, SJRWMD
Clint Goree, Morton Salt	Steve Szabo, Jones Edmunds & Associates
Vincent Greenwade, SpecPro	Amy Tracy, FDEP
Erlyn Hupfer, ISC Environmental Assurance	Dan Vangenechten, SpecPro
Carol Johnson, FDACS	Travis Young, SpecPro

Welcome and Opening Remarks

Tiffany Busby welcomed everyone to the meeting and thanked Satellite Beach for hosting. The participants introduced themselves and the entity they represent. Tiffany stated that the Florida Department of Environmental Protection (FDEP) is working to ensure that all the entities in the basin are aware of the Basin Management Action Plan (BMAP) and that as many of the stakeholders as possible are engaged from the beginning of the process. To do this, FDEP started with the contact list from the Indian River Lagoon (IRL) National Estuary Program (NEP). Anyone who attended the kickoff meetings was added and then FDEP cross-checked the list to make sure that at least one person from each entity in the basin was included. If the stakeholders notice anyone missing from the meeting or know anyone that should be added, please provide their contact information to Tiffany or Amy Tracy.

Amy Tracy stated that she knows that everyone wants their required pounds of load reduction for the BMAP but FDEP does not have this ready to distribute. There are a lot of data that need to be reviewed before an approach can be determined. The approach then needs to be reviewed by FDEP upper management before it is brought to the stakeholders. In order to allow time to determine the approach, the November Central IRL meeting has been postponed. In December, a meeting will be held for all stakeholders in which Joel Steward (SJRWMD), Whit Green (SJRWMD), and Xueqing Gao (FDEP) will review the model used to determine the IRL Total

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Maximum Daily Loads (TMDLs). The subbasin meetings will start again in January to discuss the allocation approach. The approach will be refined based on input from the stakeholders.

Troy Rice asked how the process to develop statewide numeric nutrient criteria will affect the IRL TMDLs. Amy responded that FDEP has put rule development for the numeric nutrient criteria on hold, partly due to the fact that the U.S. Environmental Protection Agency (EPA) has received challenges to their initial proposals. FDEP is continuing with the Technical Advisory Committee (TAC) meeting to discuss the criteria but this process is no longer on the fast track. Chris Ferraro added that FDEP hopes to adopt existing nutrient TMDLs as site-specific alternative criterion (SSAC). The statewide criteria would then apply in areas that do not have TMDLs. Amy noted that they currently do not anticipate that the statewide criteria would affect the TMDLs in the IRL Basin. The draft IRL tributaries TMDLs will be available early next year and these will be included in the BMAP. These TMDLs would also likely stay in place instead of the statewide criteria.

Information Needed for Basin Working Group Formation

Tiffany stated that the Basin Working Group (BWG) structure was discussed briefly during the kickoff meetings. FDEP is asking the stakeholders to begin thinking about an appropriate representative for this committee that will make formal recommendations to FDEP. The technical meetings are used for the BMAP analyses and discussions of the technical details to determine the allocations. For the policy-related decisions, FDEP wants to engage the decision-makers from each entity to make recommendations. FDEP knows that the technical people needed for the BMAP process are not the same people that make decisions about funding and budget for their entity. Because all organizations are different with different structures, FDEP needs feedback from the stakeholders to identify the right person for the BWG. The representatives can vary from commissioner to city manager to public works director. FDEP does not specify who this person should be but the representative needs to be at the right level to implement the projects in the BMAP. A form was provided for the stakeholders to nominate a representative and an alternate. Each entity that has an allocation will have a seat on the BWG. In addition, there may be a seat to represent environmental interests. The BWG will not meet until 2010 but FDEP wants to allow time for internal discussions so that the BWG will be established when it is time for a meeting. The BWG is a committee that will make recommendations to a state agency and they are therefore held to all provisions of the Sunshine Law. One of the major provisions is that they cannot discuss items related to the BMAP with other members outside of publicly noticed meetings. Additional details about the BWG, types of recommendations they will make, and example structures from other basins were sent on September 23rd. This information will also be posted to the FTP site. The BWG nomination form for the Banana River BMAP is due by January 8, 2010.

Banana River Lagoon TMDLs

Amy stated that the Banana River subbasin includes waterbody identification numbers (WBIDs) 3057C, 3057B, 3044A, 3057A (from north to south). There are no tributaries to Banana River. When determining the nonpoint source allocations, the TMDL set aside atmospheric deposition. Amy is working with the FDEP Central District air program to obtain a better idea of deposition in the basin. There has been a decline in total nitrogen (TN) in the basin but the reason is unknown, although it could be due in part reductions in atmospheric deposition. The Banana

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River has restricted freshwater inputs and limited ocean inputs, which results in a long residence that makes the waterbody sensitive to nutrient inputs. The majority of the anthropogenic nutrient loads come from the southern part of basin.

The TMDL included detailed allocations to the three point sources in the basin. Bob Berish asked if there is a point in the process where Morton Salt can provide additional detail about their industrial discharge point. The permit describes the discharge to the central turning station in the barge canal, which goes to the ocean. The facility does not discharge to Banana River and, therefore, should not be included in the BMAP. Amy asked if they brought up this issue during TMDL development. Chris stated that she raised this question with the TMDL modelers and she was told that FDEP staff went out to the site and Morton Salt has a pond on the Banana River side of the facility. Bob stated that they do not have any ponds on their site. Chris stated that the issue now is that there is an adopted wasteload allocation for the facility in the TMDL, which will be added to the permit. Amy stated that a teleconference will be needed on this issue and Dr. Xueqing Gao (FDEP) and Jan Mandrup-Paulsen (FDEP) will be included since the TMDL has already been adopted.

John Fergus stated that the earlier comment that Banana River does not have tributaries is incorrect. Banana River is a negative estuary, which means that every year one-fifth of the volume is drawn from IRL. This condition is like the IRL is flowing into Banana River. One of the most impaired areas in the basin is the mouth of the IRL at Banana River. John noted that he thinks this is where a lot of the load in the south is from because the system is not as simple as it may seem. Joel Steward stated that the St. Johns River Water Management District (SJRWMD) refers to this area as the BR-7 segment. The hydrodynamics of the system are what John stated and there are times where there is a corresponding drop in saline in Banana River similar to what is seen in the Melbourne/Palm Bay area after a storm. There is a lot of water circulation from winds, which can blow water northward into Banana River, depending on the wind direction. This is one of the reasons that the BR-7 segment could also benefit from some of the projects in the Central IRL area.

Amy stated that water quality trends over the last ten years show that TN is declining although the decline is less over the last five years than the previous five years. Chris noted that the Indian River Lagoon Act was passed in 1990, which required a reduction in wastewater treatment facility (WWTF) loads. The deadline for implementation of the WWTF reductions required by this act was 1995 and there has been decline in the point source discharges since that time. Many of the facilities have a wet weather discharge and then the discharge is being further cut back by the TMDL. In addition, there have been a lot of stormwater projects over the last ten years, which would add to the decrease in TN.

Amy stated that the decline in TN is slowing down and therefore it is evident that more needs to be done for the IRL to achieve the reductions outlined in the TMDL. A participant asked how low is the BMAP trying to get the loads. Amy responded that the TMDLs established the load reductions needed. It is likely that the BMAP will provide for a 15-year timeframe to implement the TMDL load reductions and this first BMAP only covers the first five years of reductions (one-third of the total reductions). Later iterations of the BMAP will allow time to plan regional projects to achieve the remainder of the reductions.

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Amy stated that the water quality data show declines in total phosphorus (TP) in both the ten-year and last five-year periods. Because of the reductions in TN and TP, there has been a reduction in chlorophyll-a. The chlorophyll-a water quality standard for a healthy estuary is 11 mg/L and the data show this standard is already being achieved. There has been a small but not significant decline in total suspended solids (TSS) in the basin. The state does not have a water quality standard for TSS; therefore, the TMDL did not include a TSS reduction. Projects to reduce TN and TP will also likely result in a reduction of TSS. TSS reductions will be tracked as part of the project collection process, although these reductions will not be required. The salinity in the Banana River has been pretty stable with little difference between the WBIDs. Joel added that Banana River does not have the offsetting freshwater contribution that the other subbasins have, which is why hyper-saline conditions are seen for periods of time during the dry season.

Darren May asked what level the salinity and TSS should be. Joel responded that SJRWMD looks at these parameters and they have set 20 parts per thousand (ppt) as the standard for salinity to attain a healthy seagrass bed and fisheries. For this area, 20 ppt or higher would be good. SJRWMD looked at chlorophyll-a data for the IRL and other estuarine systems and determined that levels of 5-7 mg/L are needed for healthy seagrass. SJRWMD will be setting its own water quality criteria specifically for IRL and they will have FDEP review them. For TSS, SJRWMD had a study to develop a regression model to back-calculate old TSS data to refine the information. They are looking for TSS to be about half of the current levels because TSS is the most important factor in establishing the right light regime for seagrass. Gordon England asked if they were attempting to differentiate between organic and inorganic TSS. Joel responded that they have been trying to do this and they typically see that most of the TSS is inorganic. They are not sure how much of the TSS is re-suspended from the bottom, which originally came from the watershed.

Amy stated that in the overall basin, WBID 3057A has a slightly lower TN and higher TP concentrations than the other WBIDs. Chlorophyll-a is higher in the southern end of the system, which is most likely due to the higher TP levels. Virginia Barker stated that the graphs of TN and TP show they have been decreasing over the last ten years and part of this might be from atmospheric deposition, which is not being considered. Virginia asked how this decline in the load will be taken into account in the allocation approach. Amy responded that the load allocation approach does not take atmospheric deposition into account. This information will be added in future iterations. Tiffany added that by setting atmospheric deposition aside, reductions will not be required from this source in the BMAP. However, if it does decrease, this reduction will further help the lagoon. The BMAP will just focus on stormwater and wastewater reductions.

Virginia noted that the TMDL was set based on information from 2000 and most of the reductions in TN and TP over the last ten years has occurred since that time. It appears that there are improvements that the BMAP is ignoring. Amy responded that the stormwater projects that have been completed since 2000 will receive credit in the BMAP as long as the project is not associated with a permit requirement. WWTFs will not receive credit for their upgrades in the BMAP since this was already factored into the TMDL allocations. Chris added that the Cocoa

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Beach and Vero Beach WWTFs will have to make large reductions to meet their TMDL allocations.

Virginia stated that there is a lag time between when a project is constructed and when there is a response in the lagoon. The TMDLs were set based on the amount of pollution in 2000 and some of the actions that occurred before then might still result in a benefit. The nonpoint sources are being held responsible for all the load reductions because some of the improvements are being ignored. Amy responded that project credit will be given back to 2000, which was set based on the TMDL data. There are high load reductions that need to be achieved to benefit the lagoon and it is not feasible to go further back in time for credit. This will be a 15-year process and the calculations will be refined in future iterations, which will allow for lagoon response to the projects to be factored in. Tiffany added that water quality monitoring will also be factored into future iterations and can provide more details on the loads coming from each jurisdiction, if those data are available. This will be a consideration when the BMAP monitoring plan is being developed.

John stated that the TMDL model was calibrated against data in portions of the basin and he asked if there are any data that can be used to verify the Banana River loads in the model. Amy responded that this will be covered in the TMDL modeling meeting in December and she asked John to bring up this question at that meeting.

Joanie Regan asked if dredging projects would be considered for credit in the BMAP. Chris responded that dredging could reduce nutrient loads and there have been some dredging projects in the IRL Basin. Amy added that she received a similar question from Lorraine Guise with Titusville. She asked about credit for septic tank removal and for running stormwater through the WWTF before discharging to the waterbody. If the stakeholders want credit for these types of projects, they would need to provide data to quantify the improvement to nutrient loads. While the amount of credit for these efforts has not yet been determined, it is good that the stakeholders are thinking outside of the box for project ideas.

Geographic Information System (GIS) Data Request

Tiffany stated that FDEP is requesting GIS information in an effort to better understand each subbasin. If there are existing data that the stakeholders can share with FDEP it would be helpful to have this information. A handout was provided that outlines the data request.

Amy stated that while each entity knows their own systems, they do not necessarily understand how the basin works as a whole. The GIS data will be compiled into a base map that will provide an understanding of system, the inputs to Banana River, and help identify the best areas for projects. One of the most important pieces of information is up-to-date jurisdictional boundaries, which will be used to determine the allocations. Amy requested that each entity have their GIS or CAD person contact her to determine what information they should send. If there more recent aerials, those files would also be useful. Since the aerials are typically large, the stakeholders should contact Amy first before sending them.

John noted that the Brevard County property appraiser has aerials for the entire county from 2008 so the cities and towns in this area do not need to send aerials. The county also has light

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detection and ranging (LIDAR) elevation data, which could be used to identify basin boundaries. Amy noted that the boundaries have already been determined but it is good to know that data are available. John added that it will be necessary to determine which soil layer should be used because the SJRWMD and FDEP files, which are on the FTP site, have significant differences. Joel stated that he can address how the soil information is used in the model at the December meeting. Amy noted that the FTP site includes a paper from a conference where Joel and Whit Green presented, a paper on the model calibration, and the model output file.

John stated that the Brevard County property appraiser is also constantly updating the land use information. Amy responded that FDEP will use 2000 land use since that is what the model is based on but it will be helpful to have the latest data. Gordon added that land uses are constantly changing and it is important to use the land use from the model. The accuracy of the soils layer is also not important as long as the information from the model is used. Gordon asked if the entities could send CAD files if they do not have GIS. Amy responded that most CAD systems have an option to export the files in a GIS-compatible format. Stakeholders can also send paper drawings if they do not have GIS or CAD.

Joanie asked if FDEP will change the projections of the GIS files so they match up. Amy responded that FDEP will take what they receive and transfer the data to the FDEP projection. Joanie asked if the aerials have to be rectified. Amy responded that those files should already be rectified. Virginia noted that the Brevard County aerials are rectified but they are not perfect in all areas. Gordon asked if the data for the stormwater ponds and treatment systems should be from the city or also private infrastructure. Amy responded that any data that are available should be provided.

Robert Potts noted that the Florida Department of Transportation (FDOT) had constructed a stormwater system in 2000 that was oversized to treat a larger area than required. This pond was transferred to another entity in 2006 and he asked how credit for this project would be assigned. Tiffany responded that if the system is still in operation, treating more than required, and treating transportation land uses then FDOT could receive some credit. If another entity is conducting the operation and maintenance then they could receive a portion of the credit. The question was asked how credit would be assigned for projects that multiple entities help to fund. Amy responded that in other basins credit was based on the financial contribution of each partner.

John asked if the partner projects would have to occur in a specific area in order for an entity to receive credit. Amy responded that this will be the case and FDEP and SJRWMD are working to identify project zones to limit where projects can be implemented. These zones do not always correspond to WBID boundaries so it is taking some time to determine appropriate areas. FDEP is also looking at how much of the jurisdictions are in each BMAP to determine where each entity should participate.

Joanie asked what reductions will be associated with low impact development (LID) efforts. Amy responded that she does not know yet what the credit will be but provisional credit may be determined for LID. Tiffany added that there are some activities, such as street sweeping and education, which do not have enough data to determine precisely the associated reductions. Provisional credit for these activities will be provided since they do help reduce nutrient loading.

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The provisional reductions could be revised in future BMAP iterations based on new data. Chris added that LID mainly targets future development and the goal of the BMAP is to address existing development. The fertilizer ordinance and Florida Yards and Neighborhoods (FYN) will receive credit for targeting existing development. Joanie noted that their plans for LID are in built-out areas. Amy responded that they should have a teleconference to discuss credit for those efforts with Eric Livingston (FDEP).

The question was asked if the credits for street sweeping and education from other basins can be applied here. Amy responded that the other approaches are basin-specific and while they can be used to get an idea of the credit, the methods will be revised for the IRL Basin. Eric Livingston is doing research on what efficiencies should be used. Amy also noted that water quality credit trading will not be an option in this area. The trading program is currently only a pilot program in the Lower St. Johns River Basin.

Allocation Approach – Key Entities vs. Other Stakeholders

Amy stated that the WWTFs were already assigned an allocation in the TMDL. There are also municipal separate storm sewer systems (MS4s) and nonpoint sources in the basin that will likely receive an allocation. FDEP will need to meet with the Canaveral Port Authority because they may not discharge to the basin. In addition, the Cape Canaveral Air Force Station is missing from the handout but is located in the basin. FDEP has identified several categories of stakeholders that will not be included in the BMAP including census designated places, community development districts, mosquito control districts, and soil and water conservation districts. The loads in these areas will be allocated to the counties unless the counties have information as to why these entities should receive a separate allocation. Tiffany added that, in general, these entities are not responsible for stormwater or they already have treatment.

Public Comments

Virginia asked if there will be an opportunity to discuss what monitoring is already happening and what is needed to refine the model in future iterations. Tiffany responded that in other basins, separate meetings were held to discuss the BMAP monitoring plan. If the entities have information on the locations of their existing monitoring stations, it will be used in the monitoring plan discussions. The BMAP monitoring plan will utilize existing efforts to the extent possible and then additional monitoring locations will be identified to answer BMAP questions. Amy added that the monitoring discussions usually start once the allocations have been determined but these discussions may need to start earlier in this basin because of the number of stakeholders. When the entities provide their monitoring locations, it would be helpful to identify which are long-term stations versus those that were used for a specific study and may not be continued.

Gordon asked when the best management practices (BMPs) calculation tool will be available. Amy responded that Eric Livingston is currently working on the appropriate BMP efficiency values and once the allocations have been determined, this information will be provided. Gordon asked if the tool would be similar to the spreadsheet used in the Lower St. Johns River Basin. Tiffany responded that FDEP is looking to use the TMDL model to determine the project credits so a spreadsheet tool will not be developed. The entities will provide information about their

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projects and then FDEP will conduct the credit calculations, but the approach has not been finalized so further information will be provided to everyone at a future date.

Darren asked how critical it is from a water quality standpoint to maintain flows. Also, the Canaveral Air Force Station has some land for projects and if they could cost share with some of the stakeholders, these projects would have a good chance of being implemented. Amy responded that while it is important for everyone to start thinking about project options, it is too early in the process because the individual allocations have not been determined. Tiffany added that Joel could possibly address the water quantity issue in his presentation in December.

Next Meeting

A basin-wide meeting to discuss the TMDL model will be held on Friday, December 11th at the Brevard County Agricultural Center. The next Banana River meeting will be held on Friday, March 12, 2010. If any of the stakeholders would like to host the March meeting, they should contact Amy.

Adjourn

The meeting was adjourned at 11:43 AM.

Actions

1. Amy will post the BWG information to the FTP site and notify everyone that the information has been posted.
2. Amy will set up a teleconference to discuss the Morton Salt discharge and TMDL allocation with FDEP upper management.
3. Amy will organize a call with Joanie and Eric to discuss credit for their LID projects.
4. Amy will follow up with Canaveral Port Authority to determine if they should be included in the BMAP allocations.