

Meeting Summary
Wednesday, March 4, 2015
SFWMD Lower West Coast Service Center – 1st Floor Large Conference Room
2301 McGregor Boulevard, Fort Myers, Florida

Attendees

Jackie Albert, Conservancy of Southwest Florida	Sara Hammermeister, USGS
Martha Avila, FDEP	Janet Hearn, ATM
Karen Bickford, Lee County	Jennifer Hecker, Conservancy of Southwest Florida
Tiffany Busby, Wildwood Consulting	Anura Karuna-Muni, Lee County
Marisa Carrozzo, Conservancy of Southwest Florida	Kerry Kates, Florida Fruit and Vegetable Assoc.
Kevin Carter, SFWMD	Keith Kibbey, Lee County
Terry Cerullo, FDEP	David Liccardi, Bonita Springs
Cheryl Clark, FDEP	Julie Neurohr, FDEP
Kevin Coyne, FDEP	Eduardo Patino, USGS
Sara Davis, FDEP	Raulie Raulerson, FDACS
Tim Denison, Johnson Engineering	Pete Quasius, Audubon
Holly Edmund, FDACS	Steve Sentes, SFWMD
Matt Feeney, Bonita Springs	Ashley Thomson, AECOM
Phil Flood, SFWMD	Rhonda Watkins, Collier County
Jake Fojtik, FDACS	Ken Weaver, FDEP (<i>by phone</i>)

Welcome and Opening Remarks

The meeting started at 10:00 AM. Tiffany Busby welcomed everyone to the Everglades West Coast (EWC) Basin Management Action Plan (BMAP) meeting. Tiffany also thanked the South Florida Water Management District (SFWMD) for the use of the meeting room. The participants introduced themselves and the entity they represent.

Tiffany asked if there were any comments or corrections to the January 28, 2015 meeting summary; there were no comments. Tiffany noted that the past meeting materials are posted on the Department's website for background and reference.

Site Specific Alternative Criterion Development (SSACs)

Kevin Coyne, Florida Department of Environmental Protection (Department), provided an overview of the state's provisions for developing SSACs. Kevin also noted that Ken Weaver, Department, was on the phone and is an expert on water quality standards. Kevin will defer technical questions to Ken or explain how to contact Ken for follow up conversations at a later time. Kevin explained that the rules for SSACs are outlined in the Florida Administrative Code (F.A.C.) in 62-302.800. SSACs address situations where local conditions demonstrate that a site-specific water quality criterion is more appropriate than the general, statewide criterion.

Kevin explained that SSACs must protect the waterbody designated uses and are considered to be permanent changes to water quality standards. SSACs are also subject to EPA approval because they are a change to the standards.

Kevin outlined that there are three types of SSACs: Type I, Type II and Type III. A Type I SSAC is based on the natural background conditions of the waterbody. A Type II SSAC demonstrates that human health and existing and beneficial uses will be protected. A Type III SSAC is specific to nutrients for streams and lakes. The Type III SSAC requires the collection of specific data such as the stream condition index (SCI), rapid periphyton survey (RPS) and the lake vegetation index (LVI) over a three year period.

Kevin then discussed the types of SSACs that would be applicable to the dissolved oxygen (DO) impairments in the EWC basin. Kevin explained that the Type I SSAC is the most common and most straightforward DO SSAC. To achieve a Type I SSAC here, there must be a demonstration of the natural conditions either within the Imperial River and/or Hendry Creek or a comparable reference waterbody. To qualify as an area with natural conditions, you must demonstrate that there are minimal landscape changes near the waterbody being considered as natural. The area must have a low landscape development intensity index (LDI) and no point source discharges. It is unlikely that these conditions exist here.

For a Type II SSAC, Kevin stated that the SSAC can be based on laboratory data for dissolved oxygen sensitivity for species representative of indigenous taxa, but this is an unlikely approach for this basin. Under this kind of SSAC, you can also demonstrate protectiveness through the collection of biological data (for example, an SCI), that the biological community in the river or creek is healthy. Kevin noted that the Type II SSAC generally requires more time and effort than a Type I SSAC, particularly as it requires the collection of biological data. Ken Weaver added that the methodologies for the type of SSAC are various and the Department is open to suggestions on approaches. The details of the approach appropriate for use in the basin should be worked out.

Kevin then described the types of SSACs that would be applicable to nutrient impairments in the EWC basin. The first step in this process is to determine whether the waterbodies are achieving the peninsular numeric nutrient criteria (NNC). To assess whether we are already meeting the NNC, we must determine the chlorophyll-a levels; the amount of algal mats (through the RPS) or blooms; the amounts of nuisance macrophytes growth; and changes in algal species composition that do not indicate an imbalance of the waterbody flora and fauna. In addition to these assessments, it is required that the waterbody either has an average SCI score of 40 or higher (with neither score less than 35) or, the nutrient thresholds are not exceeded more than once in a three year period. The nutrient thresholds for the EWC basin are 0.21 mg/L total phosphorus (TP) and 1.54 mg/L total nitrogen (TN). Kevin added that if the waterbodies attain the NNC, then one or more SSACs may be unnecessary; therefore, this assessment is an important step. Kevin stated that the BMAP staff will work with Ken to get this assessment process going and report back on the results at a future meeting.

Kevin explained the applicability of the three types of SSACs to nutrient impairments in the EWC basin. For Type I SSACs, there are the same considerations as a Type I SSAC for DO. For Type II SSACs, they would be based on empirical or mechanistic modelling tied to protective biological endpoints that may also include DO conditions. For a Type III SSAC, the waterbody must achieve the NNC and protect downstream waters. For streams, the SCI must be greater than 40 to demonstrate healthy flora and fauna. There must also be sufficient nutrient data to characterize the variability of the concentrations. To demonstrate protectiveness for downstream waters, those waters must attain their applicable NNC. Kevin noted that you can establish a SSAC at the existing condition and you must

follow the guidance document prepared by the Department entitled, “*Development of Type III SSAC for Nutrients.*”

Karen Bickford stated that she had heard there were problems with using the SCI in this part of Florida and she asked how that is working. Ken responded that as you move further south, there are more problems with using the SCI. In the region where the SCI applies, the Imperial River is the farthest south, so this area is located on the edge of the SCI’s applicability. To address concerns, we could think about establishing an alternative criterion, but that would close the door on using, specifically, a Type III SSAC.

Anura Karuna-Muni asked what the process is for creating a Type III SSAC and if there are completed examples that the Department could share. Ken responded that since the process is fairly new, there aren’t any completed Type III SSACs to share. However, there are some plans of study, and Ken offered to share some examples of those. For example, there is one in Suwannee Basin underway. Ken added that for Type II SSACs there was a DO SSAC completed for the Lower St. Johns River and they used biological data to establish protective biological endpoints. This approach was the basis of the statewide approach using biological endpoints. Ken stated that he believes that all the other Type II SSACs are for pH. Ken concluded by stating that he could share some information with Sara, the Basin Coordinator, to help the EWC stakeholders understand more about the mechanics of the SSAC process. Kevin thanked Ken for participating by phone and fielding questions. Ken can be reached at 850-245-8414 or by email at kenneth.weaver@dep.state.fl.us.

Surface Water Quality Analyses

Sara Davis, Department, provided a presentation on surface water quality in the EWC basin. Sara noted that the presentation includes an initial analysis only, and we need to see where the SSAC process leads us and what additional data may be needed. Sara noted that the analyses include data collected by Lee County, the City of Bonita Springs, and the Department. Sara also stressed the importance of uploading all pertinent water quality data into STORET so the data can be used for future assessments.

For the charts being shown in the presentation, Sara used TN and DO data from 2008 through 2014. It is important that stakeholders notify Sara if there are other data available that may be helpful when performing these kinds of analyses.

Sara outlined the DO and TN data for Hendry Creek, waterbody identification (WBID) number 3248B2. Sara showed the annual average dissolved oxygen concentrations in Hendry Creek which range between about 3.5 milligrams per liter (mg/L) to about 4.5 mg/L. As the current standard and the total maximum daily load (TMDL) for dissolved oxygen is 5.0 mg/L, none of the years included in the analysis met the target.

For TN, Hendry Creek’s TMDL target is 0.60 mg/L and the annual averages from 2008 through 2014 have ranged from about 0.95 mg/L to about 1.25 mg/L. [Editor’s note: The target of 0.74 mg/L was used as the target concentration to assign allocations.] Similar to DO, the TN annual average concentrations are not meeting the TMDL target.

In the Imperial River, which is comprised of one WBID, the TMDL target concentration for DO is also 5.0 mg/L. The annual average concentrations have not met the target, ranging from about 2.3 mg/L to

3.2 mg/L. For TN concentrations in the Imperial River, the TMDL target is 0.74 mg/L. The 2008 through 2014 concentrations are not meeting the target, ranging from about 1.1 mg/L to above 1.2 mg/L.

Sara noted that she has all the raw data for the Hendry Creek and Imperial River surface water quality analyses compiled and will post both the presentation and the data on the website, so that everyone has access to the data she used.

Rhonda Watkins asked if the Department will provide new criteria. Sara replied that the first step is to evaluate the NNC and the new WBID boundary changes and see where that leads us.

Anura asked how the TN and DO targets were set in the TMDL process and, related to those targets, how the water quality data are now considered in assessing the TMDL targets. Sara responded that for the EWC basin, the TMDL used a reference site to establish the DO target. This site, however, was not close to this basin, so it may not have been the ideal reference condition to use for target-setting. This is why we are discussing whether an SSAC may be appropriate. Anura asked for more specifics on how the targets were derived. Julie Neurohr offered to follow up with him directly, particularly to provide him the TMDL document that provides a lot more detail and to provide him further contacts within the Department's TMDL group, if the TMDL document does not answer his questions.

Ground Water Quality Analysis

Julie Neurohr, Department-South District Office, presented a summary of the ground water data in the EWC basin. Julie noted that during the January meeting, they reviewed the locations of the ground water monitoring network in the basin, so she will not go into much detail about the stations. Julie noted that there are quarterly samples being gathered for a two-year period. There are stations within the basins of Hendry Creek, Imperial River, Gordon River, and Lake Trafford. This presentation focuses on the stations in the EWC basin (Hendry Creek and Imperial River) only.

Julie reviewed the parameters sampled that include the following: Boron, chloride, ammonia, nitrite/nitrate, potassium, total Kjeldahl nitrogen (TKN), sucralose, and total phosphorus. Also, the following items are measured: Depth to water, pH, temperature, specific conductance, DO, turbidity, and oxidation reduction potential.

Julie added that sucralose was measured as it is common to find it in areas with on-site treatment and disposal systems (OSTDS). The sampling to date has found elevated levels at some sites of TKN and ammonia. These elevated concentrations could be the result of wetlands, sediment characteristics or other sources.

The site furthest upstream in the basin is Site MW-HC1A. The land use at this site is mainly urban and commercial. The average depth to water has been 5.64 feet. All three samples in this area have elevated specific conductance and chloride levels which indicate the presence of brackish ground water. For nitrogen and phosphorus, there are no concerns with the levels observed so far.

Julie reported the second site, MW-HC2, is further downstream and has built-up land uses such as urban and low density residential. The average depth to water here is 2.62 feet. Much of this area uses OSTDS for sewage disposal. The chloride and specific conductance levels here also indicate brackish

ground water. Ammonia at this site is elevated, but the nitrite/nitrate is undetectable. This dichotomy in nitrogen results needs further analysis. The phosphorus levels at this site are fairly low.

Julie reviewed the third site in Hendry Creek, MW-HC3. This site has urban and medium density residential land uses, as well as a golf course in the area. Julie added that the area is sewerred. The initial results here have high ammonia and TKN results, which could be from anthropogenic sources or from natural ones. The nitrite/nitrate is fairly low, as are phosphorus levels.

In the Imperial River system, there are nine wells in the basin and Julie explained that she will present the results from three of the wells. The first site Julie reviewed is MW-IR11 where the land uses are predominantly hydric pine. The average depth to water at the well is 4.30 feet. There are a few homes in the area, with very rural parcels.

Julie relayed that the initial results for MW-IR11 show low specific conductance and chloride levels, which indicate the ground water is not brackish. The nitrite/nitrate levels are low, as are the TKN and TP concentrations.

The second site Julie reviewed was MW-IR7. There, the land uses are medium and high density residential as well as agriculture (row crops). The average depth to water at the well is 4.84 feet. There are some septic tanks in this area. This site shows low sucralose levels as well as low specific conductance and conductivity. For nitrogen and phosphorus, there are no concerns with the levels observed so far.

The third site Julie presented was MW-IR6. The land uses in this area are medium density residential and sewerred. There are no concerns with the nitrogen concentrations here based on the initial samples, but TP levels are elevated. The TP values could result from a local, natural source.

Julie added that she will be posting all the data and the presentation to the meeting website, so if anyone wishes to further review the data, they are available.

Marisa Carrozzo asked about the septic tank loading modeling discussed at the previous meeting, and whether that model (ArcNLET) would be used to estimate the nitrogen loads from OSTDS. Sara responded that the Department has contacted the stakeholders about using the ArcNLET model in their basin, as the model is freely available. She also noted that she would be happy to put stakeholders in touch with Ming Ye, who developed the model. [Editor's note: More details about the ArcNLET model were provided at the January 25, 2015 meeting and the PowerPoint presentation is posted at http://publicfiles.dep.state.fl.us/DEAR/BMAP/EWC/Meetings/2014_Annual_Meeting/.]

Next Steps

Sara reported that the Department intends to continue work on SSAC development in this basin. As previously discussed, the first step is to compare the current water quality conditions to the NNC for both nutrients and DO. Another action item is to continue the ground water observations underway and to continue to evaluate the ground water influence on the DO impairment. The third item Sara noted is that the Department plans to hold the next meeting in the June 2015 timeframe. There was discussion about what dates should be avoided in June. Stakeholders asked the Department to avoid the Florida

Lake Management Society (FLMS) (June 8 – 11) and the Florida Stormwater Association (FSA) (June 17-19) conferences in June.

Jackie Albert asked if the Gordon River ground water data will also be available for review. Julie responded that she would be happy to make it available.

Karen Bickford noted that reuse water can be a source of sucralose. Karen offered to help the Department identify where the reuse areas are in Lee County. Tiffany asked if Lee County has geographic information system (GIS) coverage of their OSTDS and reuse areas available. Karen responded that there is an OSTDS coverage and she will check to see if there is a reuse coverage and share what is available with the Department.

Tim Denison asked if there is work being done to minimize reuse water as a nutrient source. Tim stated that the level of treatment for reuse water varies, and providing further treatment may be a good opportunity for a load reduction. Kevin responded that the Department has been hearing concerns about reuse as a source and this is something we can consider as we move forward.

Adjourn

The meeting adjourned at 10:45 AM.

Action Items

Ken/Sara--Assess whether the EWC waterbodies are currently meeting the NNC. Kevin stated that the BMAP staff will work with Ken to get this assessment process going and report back on the results at a future meeting.

Ken/Sara-- Ken offered to share some information to help the EWC stakeholders understand more about the mechanics of the SSAC process. Sara offered to help distribute this information.

Sara--Post both the presentation and the Hendry Creek and Imperial River surface water quality analyses data on the website, so that everyone has access to the data collected to date.

Julie Neurohr--Follow up with Anura directly, particularly to provide him the TMDL document that provides a lot more detail about how the DO and TN targets were set and to provide him further contacts within the Department's TMDL group, if the TMDL document does not answer his questions.

Sara/Julie--Further investigate ground water site MW-HC2, where the ammonia at this site is elevated but the nitrite/nitrate is undetectable. This dichotomy needs further analysis.

Sara/Department--Continue the ground water observations underway and continue to evaluate the ground water influence on the DO impairment.

Sara--Notify the stakeholders when the next meeting is scheduled; the plan is to hold the next meeting in the June 2015 timeframe. Please avoid the FLMS and FSA conference dates.

Julie--Post the ground water data, including the Gordon River data.

Karen-- Check to see if there is a reuse distribution system coverage on file at Lee County and share what is available with the Department--either the OSTDS coverage, a reuse coverage, or both.