St. Lucie River and Estuary Basin Management Action Plan

Technical Meeting Summary
Wednesday, February 12, 2014
9:30 AM – 12:00 PM
Martin County Building Department - Building Department Conference Room
900 Southeast Ruhnke Street, Stuart, Florida 34994

Attendees

Jack Andrews, Fort Pierce	Dianne Hughes, Martin County
Jim Angstadt, Port St. Lucie	Kerry Kates, Florida Fruit and Vegetable Association
Carmela Bedregal, SFWMD	Rhett Keene, Captec Engineering
Jason Bessey, St. Lucie County	Kathy LaMartina, SFWMD
Vanessa Bessey, FDACS	Steve Madden, Conestoga-Rovers & Associates
Tiffany Busby, Wildwood Consulting	Dale Majewski, Port St. Lucie
Lorrie Bush, St. Lucie West Services District	Susan Martin, SFWMD
Kevin Carter, SFWMD	Amanda Peck, FDEP
Terry Clark, Staff Connections	Marcy Policastro, Wildwood Consulting
Deb Drum, Martin County	Luke Polk, Florida Farm Bureau
Amy Eason, AECOM	H.M. Ridgely, Evans Properties
Rebecca Elliott, FDACS	Gerard Rouse, St. Lucie West Services District
Rachel Espinosa, E Sciences	Brian Sharpe, FDEP Aquatic Preserves
Stan Ganthier, FDEP	Michael Tompkins, SFWMD
Bill Griffin, Stuart	Pam Wade, SFWMD
Katie Hallas, FDEP (*by phone*)	Yongshan Wan, SFWMD
Bill Hayden, St. Lucie West Service District	Don West, St. Lucie County
Janet Hearn, ATM	Ming Ye, FSU
David Heuberger, FDEP IRL Aquatic Preserve	

Welcome and Opening Remarks

Tiffany Busby welcomed everyone to the St. Lucie River and Estuary Basin Management Action Plan (BMAP) meeting. Tiffany noted that Katie Hallas, the basin coordinator for this BMAP (Florida Department of Environmental Protection), could not attend the meeting because she is ill, but she is listening in by phone. Meetings are being held periodically on the BMAP to discuss implementation, model updates, projects, and funding for the next BMAP cycle. The participants introduced themselves and the entity they represent.

St. Lucie Watershed ArcGIS-based Nitrate Load Estimation Toolkit (ArcNLET)

Ming Ye stated that ArcNLET is a Geographic Information System (GIS)-based toolkit. This model includes several functions to simulate nitrogen transport as it moves from the septic tank to drainfield to the soils where nitrification and denitrification processes occur. Florida State University (FSU) created the VZMOD model to simulate nitrification and denitrification in the soils. For this area, nitrification is stronger because of the oxygen in the soils. There is also the ArcNLET model that simulates the groundwater processes, and the ArcNLET-MC model that quantifies the uncertainty associated with the ArcNLET simulations.

Ming stated that FSU developed this software because there was no good tool to estimate load reductions from septic tank phase outs to support the BMAP process. The existing software is either too

complex or too simplistic. The goal was to create a model that was user-friendly so that the public could use the model to help with planning. The ArcNLET simulations are all done within GIS. All of the data for the model are prepared in GIS, the model is run in GIS, and the results are analyzed in GIS. The model uses septic tank locations to simulate nitrate plumes from the tanks to surface waterbodies. Ming noted that this is a simplified model because as the model becomes more complex, it has less understandability. Therefore, the model only considers the key hydrogeological processes. The model simulates groundwater flow to show how water moves from a septic tank to a waterbody. In addition to the flow path, the model can simulate the flow velocity and travel time. ArcNLET also simulates nitrate transport through advection, dispersion, and denitrification. Denitrification is important because if the effect is strong, the nitrate plume from a septic tank would not reach a waterbody. If denitrification is weak, then the plume would reach a waterbody. The tool can then be used to estimate the load to the waterbodies. The model simulation provides an output that shows the total load to each waterbody to determine which is receiving the most loading from septic tanks. The ArcNLET model is available at http://people.sc.fsu.edu/~mye/ArcNLET, and the VZMOD model is available at http://people.sc.fsu.edu/~mye/VZMOD.

Ming stated that the inputs to the model include the septic tank locations, waterbody locations (more detailed local coverages are helpful), topography to obtain the water table information, and hydrogeological and transport parameters. These parameters include a smoothing factor for the topography, hydraulic conductivity from the Soil Survey Geographic (SSURGO) database, porosity from SSURGO, dispersivity, decay coefficient for denitrification, source load, and concentration.

The graphical user interface (GUI) makes the model easy to use as long as the user has a good understanding of GIS and a basic knowledge of hydrogeology. Ming stated that ArcNLET is a tool to help organize the user's thinking and data. Model calibration is needed to help with the parameters that do not have available data. The calibration is used to compare actual data with the model to determine if there is a good match. If there is not a good match, then the model must be calibrated. For the ArcNLET model, the calibration is a manual process, and this process can be iterative as more data are collected. This model calibration was done for the City of Jacksonville and also for the entities in the St. Lucie River and Estuary BMAP area, who had septic tank phase out projects for which they wished to receive credit.

The modelers made the assumption that ground water follows the topography. However, the water table is always continuous, so a smoothing process was used to modify the topography to simulate the water table. Ming stated that as long as the simulation results are within 50% of the data, the results are reasonable because the model cannot be expected to simulate the actual fluctuation of nitrate concentrations in the ground water. The conductivity and dispersivity parameters in the model can be adjusted to determine how they affect the load to a waterbody. The load estimation in the model has a large uncertainty; however, this uncertainty can be reduced with more data to limit the possible results.

Ming stated that he prepared a technical report for the Department on the modeling he did for the City of Port St. Lucie, City of Stuart, and Martin County for the St. Lucie River and Estuary BMAP. He thanked the stakeholders for providing information for the modeling. FSU spent a lot of time looking for data, but there were only limited data available for this area. Once the data were collected, the modelers selected the calibration data (hydraulic head and nitrogen concentration), calibrated the model,

simulated nitrogen transport and estimated load, and conducted a Monte Carlo simulation to determine the uncertainty in the model parameters.

Ming stated that water level data were available from 1988-1995 in the BMAP area. Although these are old data, the ground water conditions have not changed much, so the data are still representative. In addition, average values are used in the model, so the available data can work. For nitrogen concentration, only four data points were available in Port St. Lucie, and one data point was available in Martin County. One of the Port St. Lucie data points was collected in 1976-1977, and the other four data points were measured in 2008. Therefore, there is really only one snapshot of ground water quality in this area. The other input files for the model include the waterbodies, and FSU used the National Hydrography Dataset (NHD). However, this file did not include details on the local canals, so this information was provided by Port St. Lucie. Ming noted that this local information is important so that the septic tank load to the canals are included. The measured water table information and the smoothed Digital Elevation Model (DEM) matched closely for Port St. Lucie and Stuart. Therefore, the flow model reasonably simulates the water level. In the transport model, there was reasonably good agreement with three data points (two in Port St. Lucie and one in Martin County). The other two data points in Port St. Lucie were overestimated by the model because they were located in plumes.

Ming noted that since limited data were available, the modelers tried to make sense of the results using the available information. The nitrogen concentration in some surface waterbodies is known from the monitoring stations, and there is a good correlation between high measured concentrations in the waterbodies and where the model is showing high nitrogen loads from septic tanks. There is a spatial variability in the nitrogen plumes that corresponds to the model results. For example, Seagate Harbor has septic tanks close to the canals whereas the tanks in Hobe Sound are further away from a waterbody. A higher loading from septic tanks is expected in Seagate Harbor, and this is reflected in the model. The modelers also looked at the mean flow paths for different areas. Areas with longer flow paths have smaller loading because more denitrification is occurring. Areas with higher flow velocities have a higher load because there is less time for denitrification. In talking with Rick Hicks (Department), they found that the drainage conditions in the area affect the loading because areas with excessively drained soils have a higher velocity, so the loading is higher than poorly drained soils. Ming noted that while the results make sense in a qualitative sense, it would be good to have actual data to confirm the results.

The modelers also looked at literature values as a comparison to the model results. A Florida Department of Health (FDOH) study in 2008 in the Wekiva area found a 70% nitrogen reduction ratio. A study in Massachusetts found a 57.1% nitrogen reduction ratio, and a study in Georgia had a range of 65%–85%. For this study in the St. Lucie River and Estuary Basin, the modelers found a range of 11.7%–79.1%, which is consistent with the literature values.

Ming stated that looking at the basin overall, removing septic tanks would achieve 85.75% of the required load reductions in the North Fork; 81.02% of the load reductions in Basins 4, 5, and 6; and 25.76% of the reductions in the South Fork.

Dianne Hughes asked if the Department is looking to gather additional information for the model. Marcy Policastro responded that the Department is not planning on collecting additional data since the results are reasonable. However, if the stakeholders would like to gather more data, the Department would use this information to refine the credit estimates. Amy Eason asked what the 85.75% and

81.02% reductions in the table meant. Ming responded that these would be the reductions if all the septic tanks in that basin were removed. Amy asked if the model takes into consideration the age and function of the tanks. Ming responded that this information could be added to the model but was not included in these results. Terry Clark asked how the local government officials should interpret this information. Ming responded that for Port St. Lucie, 33.67% of the total reductions required in the basin were achieved by removing septic tanks. Rhett Keene stated that he is working on a study for Martin County on septic tank to sewer conversions. He asked if Ming could help make recommendations for prioritization of septic tank areas. Ming responded that if the county provides information on the areas of interest, the modelers can calculate the load for those areas.

Overview St. Lucie Estuary Watershed Model (WaSh) Overview

Yongshan Wan stated that when modeling the hydrological and water quality processes across a huge landscape, the variability between space and across time must be considered. The St. Lucie Estuary and watershed models started out with what was used for the Indian River Lagoon (IRL) about 15 years ago. At the time, the Hydrological Simulation Program – FORTRAN (HSPF) model was used for the watershed. For the estuary, the RMA-2,4 model was used to look at salinity and oysters. There was also a reservoir model, OPTI, which was used to optimize the water target. Water quality was missing from this suite of models. Therefore, WaSh was added to simulate watershed water quality and the Environmental Fluid Dynamics Code (EFDC) model was added for the estuary water quality. Yongshan noted that these models are now fully calibrated for the St. Lucie River and Estuary Watershed.

Yongshan stated that in the past, the CREAM-WT watershed model was used. This is a simple water budget model for surface water, which is no longer used. The HSPF model was updated about 15 years ago to simulate south Florida hydrology because surface water and ground water are closely linked in this area. The high water table condition in the HSPF model is imbedded in the WaSh model. Other capabilities were added to the WaSh model including coupled surface and ground water, more complex hydraulics for surface water since water can flow both directions here because the ground is flat, and water quality. There is spatial variability in basin, with more urban land uses along the river and more agriculture in the west. Rainfall varies significantly in the watershed. There is also a series of canals in the basin in which primary canals branch out into secondary canals and then tertiary canals. There is two-way flow in these canals: (1) to move water where it is needed for water supply, and (2) to send water to the canal for flood attenuation. Adjustments are also made in the canal levels so that the citrus groves are not standing in water.

The WaSh model uses GIS technology to include information on land uses, soils, and hydrology into each of the model grid cells. Yongshan noted that the model uses ArcView 3.2, which is no longer supported by ESRI; however, there is a long history of using ArcView 3.2 in the watershed. The model does the computations for 10- or 30-year simulations, and the post-processing shows the fluctuations in the data. The model can provide output for each grid cell, sub-basin, or entire basin. The current model domain includes the C-44 Basin; C-23 Basin; C-24 Basin, Basins 4, 5, and 6; North Fork; and South Fork. Yongshan noted that the C-25 Basin is not included in the St. Lucie model. The watershed is partitioned into a grid system with land use, soil, rainfall, and slope information. The WaSh model includes a cell network to represent the land surface and a reach network to represent the major conveyance canals. Together, these two networks represent how water and nutrients are moved around the watershed. If there is a major canal in a cell, this is called a reach cell. Canal cells include either a secondary or tertiary canal. There are also free cells, such as wetlands, and water from these cells flow

to the nearest reach or canal cell. Each cell also includes ground water. The water table moves in response to rainfall, and the model allows the water level to rise when it rains so that the ground water will interact with the surface waterbodies.

The reach network includes nodes to represent structures so that water movement between and within canals can be simulated. A basin outlet structure is also added, which opens and closes based on the water level in the canals. To route water in the channels, the model includes information on the surface elevation, bed elevation, and water elevation. The model simulates surface runoff but point sources can also be included. The ground water and canal have a dynamic interaction. When there is an irrigation demand, the model can simulate water coming out of the canal system. Downstream structures and tailwater can also be modeled in WaSh.

Yongshan noted that in modeling, the hydrology always needs to be correct before the water quality component is added. For instance, when the C-44 is open and freshwater is going to the estuary, if the model only accounts for flow velocity there would be a sharp front of water coming into the estuary. However, water is dispersed from the turbulence of its movement, so no sharp front of water occurs. For the water quality portion of the model, there is a simple option and a more sophisticated option. For the more sophisticated option, enough data are needed to simulate the biogeochemical processes. Since this information was not available, the simple option was used. This option is a storage function in which the watershed will continue to accumulate nitrogen and phosphorus, but the storage will be depleted over time. This is why the first flush of rainfall always results in a spike in nutrient concentrations.

Another approach in the WaSh model is the event mean concentration (EMC) or land use-specific concentration. The model includes different land use types that represent different types of hydrology and land management practices, which result in signature nitrogen and phosphorus concentrations. The in-stream processes use a simple approach of advection and dispersion. The model can also simulate in-stream total suspended solids (TSS) or sediment transport processes. If the water flow is slow, then TSS settles out of the water column. However, if the water flow is fast, TSS are resuspended. Nitrogen and phosphorus concentrations will reduce as the water residence time increases.

The model can also simulate best management practices (BMPs), such as for irrigation supply. In this case, the model keeps checking the soil moisture in the vadose zone and if water is needed, the model will first take water from a canal. If the canal water is not enough, the model will use the Floridan aquifer. For detention or retention ponds, the model will capture water, and there will be a first order decay of the nutrients before the water is discharged to the canals.

Yongshan noted that the South Florida Water Management District (SFWMD) has used the WaSh model for different applications over the years. The model has been used to simulate the ungauged areas in the basin where actual monitoring data are not available. The model can also be used to evaluate watershed land use changes that occur in the basin. In addition, the model has the flexibility of using different temporal and spatial scales. This model was used for the IRL – South project in the Comprehensive Everglades Restoration Plan (CERP), the Northern Everglades Program for the St. Lucie River Watershed Protection Plan, to support the total maximum daily loads (TMDLs) development, and to create the spreadsheet allocation model for the BMAP.

Yongshan stated that SFWMD is working to update the model including revising the boundary to include the Mid Coastal and South Coastal sub-basins, changing the graphic user interface (GUI) to ArcGIS 10, using the latest land use data, and additional calibrating and validating of the model with new data. SFWMD also plans to integrate the watershed model with the EFDC model for the estuary, and this integration will help to analyze the response in the estuary from BMP implementation.

Terry asked for the status of the modeling efforts and the relationship of this model to the BMAP. Yongshan responded the SFWMD is already in the process of making the updates noted in the presentation so that the model can make better predictions. Marcy added that the Department would like to use the WaSh model for the next iteration of the BMAP, and the Department and SFWMD have been discussing the resources necessary to update the model for the BMAP. An update on the model and additional details about the schedule should be provided at the next meeting. Amy asked how each entity would be able to verify the model information. Yongshan responded that there will be close interaction with SFWMD, the Department, and the entities. The goal is to ensure that the land use and land management are taken into consideration in the model. Amy asked if topography is included in the model. Yongshan responded that DEM is used for topography. Amy noted that there was a margin of error between the BMAP spreadsheet and WaSh model that needs to be addressed with this update.

H.M. Ridgely noted that about 90% of the total phosphorus (TP) and 88% of the total nitrogen (TN) loading is attributed to agriculture in the basin. It is important to note there is no one agriculture entity in the basin. The model data will not be enough to get all the producers to sign up for BMPs. Actual monitoring data and observations of where the pollution is coming from will be needed. A different way of thinking will be needed to achieve reductions in future BMAP iterations.

BMAP Project Funding Opportunities

Amanda Peck noted that a handout was provided that includes additional information on the funding sources that she will discuss. One funding option is the U.S. Environmental Protection Agency (EPA) Section 319 grant, which is included in Section 319(h) of the Clean Water Act. This grant is EPA-funded and is awarded annually. For fiscal year (FY) 2014, about $164.5 million is available nationwide. Florida receives about 4% of the total funds, which is typically about $5–$6 million each year. If stakeholders are interested in applying for the FY 2015 grant cycle, they need to start planning now. Between February and March 2014, the Department will send out the solicitations for the grant. Amanda noted that it is important to read the information closely because a lot has been updated. The project applications are due to the Department by May 23rd. The Department will then review the proposals against each other. The selected projects will be sent to EPA by September 30th and letters will be sent to notify people if their project was picked. In fall 2015, EPA will approve the projects and the selected projects should start construction immediately. Amanda stated that the project design and permitting should be done before this time. All projects must be completed by September 30, 2020.

Projects eligible for this grant are mainly stormwater retrofits but BMP demonstration and development projects, septic tank pollutant abatement, sediment and erosion control, low impact development, and nonpoint source education and BMP training are also eligible. At least 50% of the funding received must go towards projects, but Florida typically uses about 80% of the funding for projects. Local and state agencies, colleges, universities, non-profit organizations, public utilities, and state water management districts can apply. Emphasis is placed on monitoring for project or BMP effectiveness, implementing EPA approved watershed plans or BMAPs (BMAPs are new this year), addressing the

pollutant of concern in an impaired waterbody, cost-effectiveness per pound of pollutant removed, cooperative projects, innovative BMPs or use of treatment trains, and project-related public education. Construction, project-related monitoring, and project-related project public education are eligible for use of the funds. The funds cannot be used for design, engineering, land acquisition, or for an activity that is required by a federal or municipal separate storm sewer system (MS4) permit. The match for this grant is a minimum of 40% non-federal funding. In-kind services such as design, engineering, monitoring, and public education can be used for match.

Another option is the TMDL Water Quality Restoration Grant, which is funded by the state legislature and is used by the Department to implement BMPs that reduce pollutant loads in verified impaired waters from urban stormwater. The Department typically receives about $3 million per year, which is distributed to three funding cycles. Application deadlines for the cycles are March 1st, July 1st, and November 1st. Amanda stated that applications can be submitted at any time, and a stakeholder can submit multiple applications. Applications will be evaluated as part of the next grant cycle and if a project is not selected, it will continue to be evaluated for a year. If the project is not selected after a year, the entity can submit a new application. The eligible project types include urban stormwater retrofits or urban research and demonstration BMPs. Amanda noted that projects that receive this funding are intended to be shovel ready. Therefore, they must be at least in the 60% design phase, must be permitted, or have the permits scheduled to be approved at the next meeting of the governing board or Department, include monitoring to determine the actual load reduction, and construction must be completed within three years of the funding appropriation.

The same types of entities as the Section 319 grant can apply, and many of the same evaluation criteria are used. Some additional criteria for the TMDL grants include areas with TMDLs are eligible, the cost effectiveness is based on the cost per pound of TN and/or TP removed per acre treated, and there should be dedicated stormwater management funding such as a utility. At least 25% of the match must be from local funding, and water management districts are not considered local governments for match funding. Amanda noted that the stakeholders can contact her to ensure they are on the list to be notified of the funding cycles. Marcy added that Katie will be sending the TMDL grant information to the distribution list within the next week. Amanda stated that the stakeholders should ensure they are using the correct application form and should follow all instructions provided.

Carmela Bedregal asked what is considered a competitive cost effectiveness for pound of nutrients removed. Amanda responded that there is not a set number because the applications are compared to the pool of projects received. Based on past information, a treatment train approach provides more benefits.

Amanda stated that the Clean Water State Revolving Fund (SRF) is another funding option. This fund provides low interest loans for stormwater and wastewater facilities. SRF has about $200 million each year with a $25 million segment cap to make sure everyone can get a share of the funding. This is a revolving fund because it uses state and federal appropriations, loan repayments, investment earnings, and bond proceeds to maintain the funding. The interest rates are below market rates and vary based on the economic wherewithal of community. The interest rate is adjusted quarterly until an agreement is set, and then the rate is fixed. The program focuses on protecting public health, water quality, and promoting alternative water supply. The eligible project types include wastewater, reuse, stormwater, nonpoint source pollution control, and estuary facilities. In addition, some agricultural BMPs may qualify. The loans are generally given to local governments although non-governmental entities can

receive funding. A local government has 20 years for loan repayment. Kathy LaMartina asked if the loan could be used as a match for a TMDL grant. Amanda responded that this question has not come up before, but it could count as local funding since the local government has to pay back the loan. A TMDL grant could be used as a match for a Section 319 grant. There is an opportunity to mix and match funding sources and the stakeholders can contact the Department to determine what is most appropriate.

Another funding option is the Small Community Wastewater Facilities Grants Program. This is a smaller program, but it goes hand-in-hand with the SRF program. The Drinking Water SRF Loan Program provides low interest loans for local governments and certain private utilities. About $70 million is available annually with $20 million segment cap. Discounted assistance for small communities may be available. Other funding sources include a Community Budget Issue Request, which is a way to get a project into the state budget through a legislative request.

Kathy asked if the presentation would be made available. Amanda responded that it would be posted to the file transfer protocol (FTP) site with the other presentations. Brian Sharpe stated that septic tanks keep coming up as an issue, and he asked if local governments can use any of these funding sources to help subsidize the connection of tanks. Amanda responded that the Section 319 grant is designed for nonpoint sources, and many times septic tanks are a direct source. It would be better to go through a loan program or legislative appropriation for conversion from septic to sewer. Brian asked if there was a way for the homeowner to get funding, similar to funding for conversion to solar power. Amanda responded that these funding sources are for a local government or state agency, not individual homeowners. If the homes could be consolidated into one project there would be more funding options.

H.M. asked if the Department has information on the costs for TN and TP removed both from the funding application and the reported monitoring. Amanda responded that this information is available, and the Department is building a database to track this information. For the TMDL grant, the cost per pound removed from the past year projects is used to evaluate the next set of projects. H.M. noted that since the Section 319 grant is federal funding, there is a requirement to use a minority- or women-owned business. Amanda responded that this is a goal for federal funding.

Next Steps

Marcy reviewed the tentative proposed schedule and noted that Katie also provided this information at the last meeting. The goal is to meet quarterly, so the next meeting would be held on May 14th, if needed. The following meeting would then be in August to review the annual report. Since the BMAP was adopted in June, the annual report requests will be sent to the stakeholders in June and due back in July so that the report could be prepared for the August meeting. Another meeting would be held later in the fall, if needed. This cycle of meetings will continue for the next few years. The schedule proposes to have the modeling complete by fall 2016. However, this timeline could change based on the Department's discussion with SFWMD on the resources needed to update the WaSh model. More details about the timeline for the modeling should be ready for the May meeting. In spring 2017, which is four years into BMAP implementation, the Department and stakeholders will begin planning for the next five-year BMAP iteration, using information gathered from the quarterly meetings during the previous years. This will allow one year for BMAP development so that next BMAP iteration will start after the current iteration is complete.

Planning for projects in the next iteration is an important step in the process. Although the stakeholders are currently working on implementing the projects included in this BMAP iteration, discussions on future projects is needed so that projects will be ready for implementation once the second BMAP iteration begins. Discussions on future projects started in 2013 and will continue through about January 2017. The Department and stakeholders will work together to identify collaborative projects starting this year and going through about 2016. The stakeholders should also brief their upper management on the identified future projects by the end of 2016. Throughout the first iteration, the stakeholders should work with the Department to discuss items such as funding needs. The new list of projects will then be adopted in the second phase of the BMAP in June 2018. To help with the project planning, Katie would like to hold one-on-one meetings with the stakeholders in March and April. Marcy asked that the stakeholders provide Katie feedback on good meeting dates by February 28th. In addition, proposed project information should be sent to Katie by April 1st to help with planning.

Marcy noted that there are also several changes to the BMAP boundaries that will be made before the next BMAP phase. There are several parcels owned by the City of Stuart that are located within Martin County. The allocations to these stakeholders may be revised in the future to reflect these areas. There was also a neighborhood (Beau Rivage) that was located in St. Lucie County but transferred to Martin County last summer. The boundaries for the counties will be revised to reflect this change. The Department will also continue discussions with Port St. Lucie about the community development districts (CDDs) within their jurisdiction. CDDs were assigned a separate allocation in the BMAP if they met the following criteria: (1) there is development (roads and infrastructure), (2) the CDD does not discharge to the city's MS4, and (3) the CDD pays a stormwater fee and receives a refund of this fee. However, changes to the CDDs that receive an allocation may occur as part of the second BMAP iteration. H.M. noted that another important boundary consideration is the inter-basin and inter-BMAP transfers.

Amanda stated that EPA does include all of the Section 319 grant information on their website, so the stakeholders could use this site to look at the costs and pound reductions from Florida projects.

Adjourn

The meeting was adjourned at 11:50 AM.

Action Items

- Ming Ye offered to assist Martin County in identifying priority areas for septic tank phase out using the ArcNLET model.
- The Department and SFWMD will continue discussions about updating the WaSh model for the BMAP, and an update will be provided at the next meeting.
- Katie Hallas will send the TMDL grant information to the distribution list. – *Completed*.
- The stakeholders should contact Katie by February 28th with options for meeting times during March and April to discuss potential project ideas.
- The stakeholders should send Katie proposed project ideas by April 1st.
- The Department will consider inter-basin and inter-BMAP transfers when revising the boundaries for the second BMAP iteration.