

LOWER ST. JOHNS RIVER TECHNICAL ADVISORY COMMITTEE (TAC) MEETING
St. Johns River Water Management District – Jacksonville Service Office
7775 Baymeadows Way, Suite 102, Jacksonville, Florida 32256
July 26, 2012

Participants

Towns Burgess, ERC	Tom Mallett, COJ
Robert Burks, SJRWMD	Jeff Martin, FDEP
Derek Busby, SJRWMD	Lori McCloud, SJRWMD
Tiffany Busby, Wildwood Consulting	Steve Miller, SJRWMD
Dean Campbell, Citizen	Megan Morgan, Georgia-Pacific
Stuart Chalk, UNF	Jeremy Parrish, FDEP
Ed Cordova, JEA	Marcy Policastro, Wildwood Consulting
Betsy Deuerling, COJ	Cicely Pontiflet, NPS
Anthony DiGirolamo, FWC	James Richardson, COJ
Timothy Gross, ERC	Geoff Sample, SJRWMD
Kevin Hayes, COJ	Vince Seibold, COJ
John Hendrickson, SJRWMD	Kelly Smith, UNF
Mike Hollingsworth, USACE	Lucy Sonnenberg, JU
Stewart Holm, Georgia-Pacific	Austin Stark, SJRWMD Intern
Don Jacobovitz, Putnam County	Steve Swann, ATM
Tom Kallemeyn, FDEP	Scott Tingle, Georgia-Pacific
Tracey Kelley, Georgia-Pacific	Amy Tracy, ETM
Pam Livingston Way, SJRWMD	Scott Turner, DCHD
Steve Lopez, Southern Sportsman	Gary Weise, COJ
Jim Maher, FDEP	

Welcome and Introductions

Jim Maher welcomed everyone to the Lower St. Johns River (LSJR) Technical Advisory Committee (TAC) meeting. The participants introduced themselves and the entity they represent. Jim noted that there is a fisheries emphasis for the meeting agenda. John Hendrickson added that he would like to modify the TAC meetings to make them thematic so that there is not as much of a crossover of disciplines. If anyone has ideas for future themes, they should let John or one of the TAC chairs know.

Jim stated that the last meeting summary was emailed to the TAC and edits should be provided to Tiffany Busby or Marcy Policastro. During the last meeting, there was a discussion about the Mile Point project and the Florida Department of Environmental Protection (FDEP) has the application for this project in house for review.

Establishment of the LSJR Environmental Events Database and River Report Digital Archive

Lucy Sonnenberg stated that during the 2010 events on the river, people were trying to gather information about what was occurring from multiple agencies and individuals. A TAC meeting was held to discuss the available data on the event to try and figure out what was the cause. During this meeting, Lucy began to see the value of being able to transfer data quickly and efficiently. About this same time, Stuart Chalk was thinking about the need for a database to help with the River Report that the University of North Florida (UNF) and Jacksonville University (JU) develop. The goal of this database was to create a tool for scientists to share data quickly and efficiently. Lucy stated that they would like feedback from the TAC on whether this tool is useful and if the information and files already included in the database are accurately represented.

Stuart stated that he is still tweaking the database but he will send the link to Tiffany to distribute to the TAC once it is ready. The database requires a username and password to log in because not everyone wants their data available to the public. The site includes a welcome tab with background information. There is also an activities tab where people can add information about their activities on the river such as sampling results, pictures, and manatee counts. Files can be added to the database so that they are associated with an activity. These files can be Word documents, PDFs, or maps. The current year activities come up on the activities tab; however, past years' information is also available.

The database is designed to require the minimum amount of information to make adding information quick and easy. To add an activity, each person must have an account. When logging into the database using this account, the personal information required for an activity will automatically be filled out, although this information can be changed if a person is adding information for someone else. There is a preliminary list for types of activities but Stuart asked the TAC to provide feedback on what other activity types should be included. The activity information also includes location information, if the user wants to add it. The location section includes a list of stations from STORET, as well as the option to add other stations. This portion also includes a list of all the waterbody identification (WBID) numbers, and the option to add Global Positional System (GPS) coordinates. Stuart stated that he is working to include a mapping feature in the database so that information can be selected by location. The mapping feature will be part of version 2 of the database. The database also has a search function that searches both the activity names and files for keywords. Lucy stated that one of the great features about the database is the option to attach files and photographs to an activity. If there are no supporting files, an activity can still be added to describe the event. Stuart stated that when he sends the link to the database to the TAC, he will also include information on how to set up an account to access the database.

Vince Seibold asked if the database includes the ability to link to other websites or if it is limited to files. It would be useful to link to the City of Jacksonville (COJ) website so that the city does not have to enter their data on two separate sites. Stuart responded that the database currently does not include this option but it could be added. Jim asked if the next version of the database would include Geographical Information Systems (GIS) capabilities. Stuart responded that he was thinking of using Google maps in the next version but this does require transforming GIS shapefiles into something that Google maps can read. This can be done but he is working on figuring out the best way to accomplish this. Amy Tracy suggested linking to the FDEP online mapping portal as an interim measure until a map could be added directly to the database. Stuart responded that the link to the FDEP mapping portal could be easily added. Robert Burks asked if the database is set up so that a search on "foam photographs" would pull up associated photographs. Stuart responded that a search for "foam" could be run and it would pull up any files with reference to foam. Unless the file caption says it is a photograph, the files would need to be opened to determine what they include. Lucy added that the ability of the search function is only as good as the title of the uploaded information. Information can be uploaded quickly and the activity can be modified later to add more information.

Stuart stated that he is also working on the River Report Digital Library, which will be available to the public in August when the fifth annual River Report is released. Currently, it is unlikely that funding will be available for another report next year so he wanted to make use of the resources they had found for past reports. This database includes all the resources cited in the report, and the link to the database will be included on the River Report website. The final database will have over 500 resources in it.

Pre and Post Georgia-Pacific Pipeline Biological Community Monitoring

Towns Burgess stated that the purpose of this study is to evaluate biological communities found near the new Georgia-Pacific facility discharge location. The facility is currently discharging to Rice Creek but the pipeline is almost completed and the discharge will be relocated in the near future. The relocation of the discharge was authorized by an Administrative Order from FDEP if the facility could not achieve

water quality standards for Rice Creek after the upgrades. The main water quality issues were color and conductivity. The permit also required that if the discharge had to be relocated, Georgia-Pacific had to monitor the biological community in the main stem of the river to ensure there were no impacts. FDEP was involved in the development and approval of the monitoring plan.

The goal of the monitoring is to delineate differences in natural conditions of the biological communities versus impacts to the communities caused by the discharge relocation. Towns stated that they decided to conduct the monitoring at the population to community level. The monitoring could have been done at the molecular to cellular level, which has good response to sensitivity; however, there would be questions about the greater applicability of this information. At the other end of the spectrum, they could have focused monitoring at the ecosystem level, which would have provided information with good ecological relevance but not for response and sensitivity. The population to community level provided a good balance in the information that could be provided and would help to answer more questions about the impacts of the discharge.

The monitoring includes phytoplankton and zooplankton, epiphytic algae and periphyton, submerged aquatic vegetation (SAV), macroinvertebrates, and fish. In addition, information was collected on water chemistry and photosynthetic pigments. The sampling is conducted in zones up to 10 kilometers, both north and south, of the relocation point and focused on near shore and channel habitats. The channel habitats are fairly homogeneous, but the near shore habitats fell into two main types: (1) snag, which includes a natural bank, mucky soils, and minimal anthropogenic impact; and (2) mast, which includes manmade structures, sandy soils, and adjacent manicured lawns.

The data for different parameters are collected at different timelines including monthly, eight times per year, quarterly (most of the parameters), and annually. Tiffany asked if the eight times per year sampling occurs on a seasonal basis. Towns responded that the sampling is evenly distributed to provide better information about those parameters. From October 2008 through September 2010, they conducted preliminary efforts including habitat characterization, site selection, and sampling technology selection. The two years of pre-relocation monitoring started in October 2010 and will go through September 2012. The permit also called for additional sampling in the case of any extreme events, such as extreme drought, hurricane, algal bloom, or fish kill. The post-relocation monitoring will start in October 2012 and will continue through September 2014. The exact dates will be determined based on when the discharge is relocated. The permit requires additional monitoring for one to three weeks after the discharge is relocated and additional monitoring 30 days after relocation. The permit also includes the same provision for extreme events as part of the post-relocation monitoring.

Towns stated that phytoplankton and zooplankton are the base of the food web, can form blooms, may produce toxins, and respond more quickly to changes in the environment than the other communities in the monitoring. The pre-relocation monitoring found that the zooplankton diversity is consistent across the monitoring sites but not across seasons. SAV is a primary producer, food source, critical habitat, and important nutrient sink. The focus of the SAV monitoring was on bed size, diversity, and density. Most of the mast sites have larger SAV beds than the snag sites. Steve Miller asked if the depths are the same in each of the habitat locations. Towns responded that the depths are similar. Tiffany asked if the snag sites are shadier, which would affect SAV growth. Towns responded that the trees are closer at the snag sites, which creates more shade. The mast sites have more sandy bottoms, which is conducive to SAV growth whereas the snag sites have muck bottoms. Jim stated that the graphs show that no SAV was found at the mouth of Rice Creek. He asked if the transects are designed to pick up SAV beds if they come back when the discharge is moved. Towns responded that the site called "Rice Creek Mouth" is still within the creek, just closer to the river. This is not the estuary, and this area is channelized and very deep, so SAV will not grow there.

Macroinvertebrates are the link between the primary producers and consumers. They do not move around much so they cannot escape pollution. Different taxa show different levels of tolerance to pollutants. Quarterly sampling is conducted of both the nearshore and channel habitats, with additional sampling in the area closest to where the discharge will be. For the channel habitats, the highest abundance was found in the winter and spring, and the north and south sites are similar overall. For the near shore locations, there were both site and seasonal differences in abundance. Summer 2010 had the highest abundance in the main stem and spring and summer 2011 had the highest abundance in Rice Creek. For the additional sampling near the discharge location, abundance data going back to January 2009 were used. Two of the four sites looked different until about June 2010 and, since that time, all four sites have had similar abundance. Robert asked how long they leave the Hester-Dendy equipment in the water. Towns stated that they tested varying times from one to four weeks to determine the ideal amount of time to collect information without problems with sloughing or stolen devices. Based on these tests, they now deploy the Hester-Dendy sampler for two weeks for sample collection.

Fish are the highest trophic level used in the monitoring and they show the combined effects on the ecosystem, are good indicators of long-term health, and have high social and economic values. They found that there is a higher abundance of fish in the spring and summer, the north and south sites are similar, and there is no strong seasonal trend in diversity. For the photosynthetic pigments sampling, they did not find a strong site differences in chlorophyll-a concentrations, which were represented by phytoplankton. The phycocyanin concentrations had similar abundance across sites and seasons. Tiffany asked why the chlorophyll-a concentrations were found to be fairly consistent across seasons because phytoplankton usually dominate in the summer. John responded that cyanobacteria do dominate in the summer and pigments are not always a reliable measure. Towns added that this is also only two years of data so there may be more variability than was captured in those two years. The frequency of data collection also affects what the data look like. For phycoerythrin, the concentrations were similar by season. The minimum monitoring requirement was quarterly; however, they sampled eight times per year, which allowed for the sampling to capture a bloom in February 2011.

Towns noted that they found three main, non-native fish species during the sampling: blue tilapia, brown hoplo, and sailfin catfish. All three of these species are sensitive to temperature changes and the populations were greatly affected by the cold winters in 2010 and 2011. However, both the blue tilapia and sailfin catfish are finding their way back into the system. The pipeline is nearing completion so the post-relocation monitoring will start soon.

Tony DiGirolamo asked what native fish species they caught. Towns responded that they caught sunfish, bass, and catfish. Tony asked if they did any comparisons of their fish data to the information that the Florida Fish and Wildlife Conservation Commission (FWC) has collected because these data would provide a good picture of the normal fish community. Towns responded that he has not looked at this dataset yet but he has looked at other fish population information. Amy asked if they found correlations with salinity. Towns responded that they have a huge dataset and he can provide information on salinity if anyone is interested. Pam Livingston Way asked if the two years of post-relocation monitoring shows that there are impacts from the discharge to fisheries and habitat, what would be the consequences. Towns responded that feedback is provided throughout the monitoring so that two years do not go by if harmful impacts are occurring. Jim added that the purpose of including the monitoring in the facility permit is to ensure that a water quality violation, which includes biological integrity, does not occur. If there is evidence of a water quality violation, there is a process to reopen the permit and add provisions to fix the problem. The monitoring is evaluating both what happens in Rice Creek when the discharge is removed and in the main stem when the discharge is added. If a problem is detected, it will be corrected.

Robert asked what type of coring was used in the benthic analysis. Towns responded that a petite ponar was used. Mike Hollingsworth asked if there was any consideration to using qualitative or semi-

qualitative techniques to better capture species that would be impacted. Towns responded that they did look at other techniques and they started by reviewing bioecon protocols. However, they did not find natural substrate at all the sites, which was required to use the bioecon protocols. While the methods used may not capture all the species, the goal is to compare pre- and post-relocation data. Austin Stark asked if the amount of discharge from the facility is the same throughout the year or if it changes. Towns responded that he is unsure if the discharge changes on a daily basis or if the discharge is dependent on rainfall. However, the facility did go through a process modification, which greatly reduced the amount of water used. Jim added that the discharge does not come directly from the plant but from treatment ponds, whose discharges are dependent on rainfall. John asked if the monitoring of the chemical compounds from the facility in fish tissue would continue. Stewart Holm responded that this fish tissue monitoring continues as part of a separate effort.

Effects of Freshwater Discharge on the Relative Abundance and Distribution of Fishes in the St. Johns River

Steve Miller stated that the information in his presentation is from a joint effort between the St. Johns River Water Management District (SJRWMD) and FWC. This evaluation was conducted as part of a larger study to look at the potential ecological effects of surface water withdrawals. Freshwater inflow is an important component for the estuaries because the flow exports nutrients and detritus that are recycled and contribute to fish production, and because inflows chemically and physically modify the estuary to provide critical nursery habitat. Even though salinity is a major factor that influences the distribution and abundance of estuarine organisms, fish can move in response to salinity changes and many species have a wide range of salinity tolerance. In addition, the salinity in LSJR varies widely over a 24-hour period. Therefore, instantaneous salinity at capture is not necessarily a good predictor of abundance or distribution for many fish species. They believe that freshwater inflow provides a better metric for predicting changes in fish abundance and distribution than changes salinity alone because it influences a number of other factors (e.g. nutrient and detrital input to the estuary) in addition to salinity itself. Also, relationships between fish abundance and distribution and freshwater inflow could be applied directly to the question of potential freshwater withdrawal effects.

The Florida Independent Fisheries Monitoring Program (FIMS) collected monthly samples from May 2001 to December 2010. They conducted 7,467 sampling events and collected 186 different species. The LSJR was divided into eight zones for sampling. The catch was dominated by open water pelagic fish, and 52 new species were added to the river list. The FIMS data indicates that fish recruitment to the estuary occurs throughout the year and suggests that there is no particular season in which freshwater withdrawal effects would have no potential effect on recruitment of an important species. Because of ontogenetic differences in salinity tolerances, feeding habits and habitat usage, individual species were divided into size classes, gear in which the different size classes were collected, recruitment period of the size of class to the gear, and FIM zones in which the size classes occurred to create what was termed “pseudospecies.” Through a screening process, 444 pseudospecies representing 57 individual species qualified for an in-depth analysis of freshwater inflow effects.

For each pseudospecies, they looked at the center of abundance and the monthly and annual abundances. The inflow was determined using U.S. Geological Survey (USGS) gauges at DeLand and the Ocklawaha River. Mean inflows in 30-day increments from 30 to 360 day periods were used to evaluate relationships between freshwater inflow and abundance of each pseudospecies. For the annual abundance evaluation, they also included the period prior to recruitment. This resulted in 354 combinations of center of abundance versus inflow and 3,912 combinations of abundance versus inflow that were analyzed. They used Spearman’s Rho to further screen the data to so that the 354 combinations became 32 and the 3,912 became 191. For 82% the species that qualified for analysis, there was a significant abundance or distribution change in response to inflow for at least one size class. The 191 combinations were transformed and the best fit of the data were used to cut the dataset down to those species that are most

influenced by water withdrawals. All species that had a strong distributional response to freshwater inflow moved upstream with decreasing freshwater inflow and moved downstream when water inputs increased. There were several species that had no or only minimal movement in response to changes in inflow. Responses to freshwater inflow were presented for only a few species including striped mullet, southern flounder, and white and channel catfish.

Steve stated that striped mullet is one of the most abundant species in the LSJR Basin estuary. This species consumes a lot of detrital material and is one of the most important forage species in the river. January through April is the major recruitment period. Striped mullet spawn offshore in the winter, and the eggs and larvae are transported to the estuary by currents. There is no relationship between the abundance of new larvae and freshwater inflow. When they reach >40 mm in length, young striped mullet require lower salinities and they move to salt marsh habitat where they switch to a detritivorous diet. Data indicate a significant decline in abundance of 31-50 mm striped mullet with decreasing freshwater inflow along with a significant upstream shift in their distribution. This suggests that increased salinities in the salt marsh habitat due to reduced freshwater inflow may force upstream movement of juvenile striped mullet away from preferred structural habitat and result in increased mortality. There was no flow response by larger size striped mullet (>50 mm) but fish above this size are harder to catch and because of their increased tolerance to freshwater and may move upstream of the sampling area.

The southern flounder spawns offshore in the winter, and juveniles less than 25 mm are transported to the estuary by currents. Recruitment occurs from January through April and the young also have increased freshwater tolerance with increased size. Fish less than 50 mm in February through May in the estuary decline significantly in abundance with decreasing freshwater inflow, indicating wintertime discharge is important to their recruitment success. Reduced flows may affect the ability of the larvae to enter the estuary, or cause young to be subject to increased predation from marine predators.

Channel and white catfish tolerate intermediate salinities, and it appears that many of their young-of-year migrate to the LSJR estuary in the fall and use it as over-winter nursery habitat. It appears that the channel and white catfish spawning does not occur in the estuary. Both like flowing water so spawning probably occurs upstream. The abundance of young catfish in the estuary in the fall strongly correlates to summertime inflow. Relationships between catfish spawning success and freshwater flows in the upstream spawning areas need further investigation. Additional information relating abundance of young catfish in the estuary to adult abundance in future years is also needed to further quantify potential water withdrawal effects on this economically important species.

Spatio-Temporal Patterns of Recruitment, Abundance, and Habitat Utilization of Southern Kingfish in the Estuaries of Northeast Florida

Tony DiGirolamo stated that FWC conducts normal stratified random sampling in four main zones: Zone A is the St. Marys River, Zone B is the Nassau River, Zone C is the LSJR to Trout River, and Zone D is the LSJR to Doctor's Inlet. There are other sampling locations south in Zones E and F that are part of a grant sampling with SJRWMD. The focus of this presentation is on Zones A-D because FWC always samples these areas since they are not grant dependent.

The southern kingfish, also known as whiting, live on the water bottom. The adults prefer sand bottoms and juveniles can be found in both mud and sand bottoms. In terms of the fishery, 74% of the southern kingfish catch is recreational. Duval County and Brevard County dominate the commercial portion because the southern kingfish is a by catch of shrimp. Lucy asked how big southern kingfish are. Tony responded that they could be up to 300-400 mm in length. However, as they get bigger, they move offshore so the larger fish are typically not found inshore. The southern kingfish grows an average of 22cm/month in the first year, and maturity occurs at about one year. The smallest fish caught at maturity

was 135 mm long. The fish were placed into four growth classes: early young in the year (EYOY), juvenile, late young of the year (LYOY), and one year and older.

The sampling data for 2001-2009 were evaluated just for captures of the southern kingfish. They evaluated what times of the year certain sizes are most common to determine when recruitment is occurring. FWC also conducted an index of abundance analysis, evaluated habitat data associated with abundance, and conducted a hotspot spatial analysis to determine where different size fish are found. The gear used in the sampling was seines, trawls, and haul seines. They found that the St. Marys and Nassau rivers have more of this species than the LSJR. There are not many fish caught in the seines; there are much higher numbers in the trawls. It seems that the fish are recruiting on the edge of channels because the seines and trawls have the same size mesh but are used in different habitats. There were not many LYOY and fish one year and older that were caught, and this is because they start moving offshore and these are inshore data.

Tony stated that the habitat association evaluation was focused on EYOY and juvenile since there were not much data on the older two classes. The highest associated factor with depth was seines, and the mean depth was 3.7 meters for all zones and gears. The highest associated factor with the zones was trawls. The Spatial HotSpot Analysis is GIS-based and it looks for significant values of a certain parameter. In this analysis, they focused on areas with significant southern kingfish catches and looked at the data by size class. For EYOY, there was high clustering in the mouths of the St. Marys and Nassau rivers. In the LSJR, there was a good cluster of EYOY but it was much further upriver, which is likely due to the high current velocity that is flushing them further into the river. For the juveniles, there was a little bit of segregation that was spread out from the EYOY cluster in the St. Marys River. The Nassau River has a cluster upriver. In the LSJR, the juveniles were clustered more down river than where the EYOY were located. From 2001 to 2005, there was an increase overall in EYOY and juvenile populations, which dropped off in 2007, and are now increasing again. Tony stated that this pattern could be due to an unregulated fishery near Mayport during this time. A sink gillnet fishery came to the area in 2002 and was fully integrated in 2004, which had a major increase in catch per unit that affected the southern kingfish population. In 2006, there was a right whale mortality that was tied back to the fishery so it was closed in 2007. The population seemed to come back after the fishery was closed.

The evaluation of the southern kingfish is part of a larger statement of work that includes similar evaluations for red drum, spotted seatrout, spot, and croaker. Red drum is the highest recreational value species in the area, and these are more dominant in the LSJR compared to the St. Marys and Nassau rivers. Spot and croaker are the dominant sciaenid in the LSJR region. FWC recently had a good enough dataset to look at trends for individual species, and they can also compare this information to fisheries in other parts of the state.

Lucy asked if the sink gillnet fishery had any by catch populations that were also affected. Tony responded that it was an offshore fishery and these data were inshore. The paper on the fishery might have information about any by catch. John asked if the EYOY were found further up the river in the LSJR due to the channel modifications. Tony responded that he thinks the difference may be because of how the St. Marys and Nassau rivers function at the mouth versus the higher velocities at the mouth of the LSJR. Lori McCloud asked if salinity decreases may harm growth or interfere with development. Tony responded that the southern kingfish is a very tolerant species so the salinity concentrations further upriver in the LSJR are within their range. They do have a preference for salinity but Tony stated he was unsure how they could be affected by salinity by being pushed upriver.

Technical Updates and Announcements

Environmental Events Coordination Update

Jim asked if the event database is linked to STORET. Lucy responded that it is not, but a link could possibly be added in version 3 of the database.

Fisheries

Tony stated that FWC has continued their routine monthly inshore sampling. SJRWMD has renewed the sampling contract for Zones E and F through the end of 2014. FWC is participating in the cooperative east coast red snapper tagging program. They have provided about 4,000 tags, of which about 2,000 have been placed on snapper by anglers. There have been 106 recaptures, with six fish that have been recaptured twice. The average days at large were 128, and most fish were caught within two miles of their original location. FWC's cooperative research grant ends in September and this effort began in April 2012. Sampling occurs from Daytona to Fernandina Beach, and includes seven to nine offshore sampling events per month. There were recent catfish kills that occurred south of Palatka into Central Florida. FWC took fish samples and they are waiting on the analysis results to determine the cause. This summer, there have also been reports of sick grouper offshore, which are lethargic and have sores. FWC recently collected the first grouper sample, so it will take some time to determine what is going on.

Jim asked how does FWC's ongoing mercury in fish tissue monitoring tie back to the mercury total maximum daily load (TMDL). Tony responded that mercury is analyzed as part of the standard parameters FWC collects. He is not sure how the data were used for the TMDL, but if there were any concentrations of concern, FWC would report them.

SJRWMD

Pam provided an update on activities in the Tri-County Agricultural Area (TCAA). Terry Pride (Florida Department of Agriculture and Consumer Services [FDACS]) is leading the Water Management Partnership, which involves state agencies, growers, and agricultural organizations. The goal of the partnership is to implement water conservation and management projects as a demonstration, with the ultimate intent of getting the growers to convert from seepage irrigation to more efficient systems such as drip, overhead, or subsurface irrigation. Managing water better will also reduce the runoff of nutrients to the river. The partnership also includes a technical support team that reviews the integrity of the proposed projects. There have been five applications for projects and five projects have been approved. The funding for this program comes from the SJRWMD and FDEP. They also submitted for and received federal funding from the Natural Resources Conservation Service (NRCS). The NRCS has been very involved and the partnership is using their conservation practices. Jim asked if there is basin management action plan (BMAP) credit associated with these efforts. Tiffany responded that the BMAP does require significant agricultural reductions from best management practices (BMPs) and beyond. Some of these efforts could result in credit towards the additional agricultural reductions needed. Pam added that they will be conducting extensive monitoring to compare these practices to traditional agricultural BMPs. In addition, growers can apply for funding through the partnership only if they are already implementing standard BMPs.

Derek Busby stated that there is a lot of work that goes into determining how to put the practices into place. It appears that many of the growers are hanging back to see how the process goes for the first few projects. However, fertilizer banding equipment has been popular because it provides a more efficient placement of fertilizer for use by the plants. The legislature provided additional funds for purchasing this equipment. The partnership is a well-funded program and they working to get more growers involved. Lucy asked if the project ideas come from the growers. Derek responded that it is a team effort. The growers typically come up with an idea and the technical advisory team works with them to further develop the project. When the project goes to the design stage, they may need engineering support for larger projects. Pam noted that a lot of these practices have already been implemented in other parts of

the country and in other countries. However, these practices have not been used on sandy soils and for potatoes. The growers are given funding for three years to test the practices so that they have confidence in the technology. The partnership is also evaluating the Irridrain system, which must be managed properly to reduce nutrients in runoff.

John stated that they are doing a lot of work now on the LSJR water quality model to include a greater time period and more data. He may have more information on the simulations for the next TAC meeting.

Robert stated the SJRWMD still has four full-time field staff for sampling, and their area has been expanded south to Orlando, west to Orange Creek, east to the Intracoastal Waterway, and north into the St. Marys. SJRWMD is collecting 75% of the FDEP trend and status monitoring data for the LSJR Basin. SJRWMD is also working with the National Oceanic and Atmospheric Administration (NOAA) on satellite imagery for chlorophyll tracking. They are also looking to add more meters with telemetry on the LSJR for long-term monitoring.

COJ

Betsy stated that since the last meeting, Dana Morton has left COJ. Dana did a lot for the city and Terry Carr has taken over a portion of Dana's previous responsibilities and Betsy is in charge of the ambient monitoring program. With the upcoming budget, about four positions will be lost in the water group, which will affect the monitoring program. The city will continue to their routine river and tributary monitoring, as well as their BMAP monitoring stations. COJ is working on a project in the Trout River to determine if the low dissolved oxygen (DO) is natural or caused by anthropogenic impacts. The city put out a DO sonde in Trout River last week, and they are working with a consultant and FDEP on the project. COJ is also conducting the Cedar River stormwater pond efficiency study. The purpose of this study is to show that the pond is removing nutrients, as expected, so inflow and outflow data from the pond will be collected. Jim noted that this information would be useful because there are not a lot of available data on the actual removal efficiencies of stormwater ponds.

Lucy asked if there were plans to monitor particulate removal because of the heavy metals found in Cedar River. John responded that the SJRWMD does have sediment sampling for Cedar River. Robert added that SJRWMD and COJ also collect monthly water quality data. Betsy noted that the focus of the stormwater pond study is on storm events and includes nutrients, solids, and bacteria data collection.

U.S. Army Corps of Engineers

Mike stated that the Corps was told to expedite the Jacksonville Harbor deepening project. This requirement should not affect the modeling efforts because a lot of tools have already been developed for this area, mainly by other TAC members. The Corps is four months into its six-month contract with Taylor Engineering for the modeling. However, an official project depth has not yet been determined and is not expected from the federal government until January 2013. In the meantime, they are modeling depths of 45, 47, and 50 feet and additional modeling will occur if one of these is not the selected depth. The Corps is supposed to have a final report ready by April 2013, but this will likely be when the draft report will be ready. The report then needs to go through public and Corps review so it will likely be final in mid-2014. They hope to save time in the chain-of-command review process. However, by the time the project has been reviewed, congressionally authorized, and funded, it will likely be 2015/2016 before the dredging can start.

The Mile Point project will involve removing the existing training wall and restoring Great Marsh Island up to 50 acres. The final alignment should be available soon and the project will remove erosional forces and restore some of the marsh area to a more natural condition. The project application was submitted to FDEP last week, and the Corps is waiting for final funding authorization from Congress. The Port may lend the Corps the funding to help move the project forward. The Mayport deepening project is almost

completed, which took almost two years due to issues with historical debris in the area. The Big Fishweir Creek project is awaiting Corps district office approval, and then the project can be submitted for funding.

Other Updates

Tiffany stated that the COJ Environmental Protection Board Symposium will be held on August 17th at UNF. Registration is now open on the COJ website. The Florida Stormwater Association workshop will be held on September 14th on stormwater BMPs and changes to the Environmental Resource Permit process.

Next Meeting Date

John suggested holding an Environmental Events subcommittee meeting to discuss the database and any observed events. Tiffany stated that the next TAC meeting would be held in October at JU. The SJRWMD Governing Board meeting will be held during the second week of the month and SJRWMD staff requested that the TAC meeting not be held early that week. Tiffany stated that a notice will be sent once the meeting date has been determined. Lucy asked if the Hogan Creek presentation by the Environmental Protection Agency (EPA) could be rescheduled for the October meeting. Tiffany responded that she will contact EPA but the presenter is a field person so it is difficult to coordinate with his schedule.

Adjourn

The meeting was adjourned at 2:15 PM.