Lower St Johns Technical Advisory Committee (TAC)
Meeting Summary
Host: SJRWMD
Orangedale, FL
June 20, 2006

Attendees

Alex Ainza, CCUA
Ray Bowman, UNF
Russell Brodie, FWD
Richard Bryant, National Park Service
Robert Burks, SJRWMD
Tiffany Busby, Wildwood Consulting
Dean Campbell, SJRWMD
Cindy Cosper, DEP Watershed Monitoring
Barry Cotter, COJ-EQD
Betsy Deuerling, City of Jax
Dean Dobberfuhl, SJRWMD
John Hendrickson, SJRWMD
John Higman, SJRWMD
Amy Kalmbacher, CAMA
Tom Kallemeyn, FDEP
Dan Littles, Clay County Engineering
Pam Livingston-Way, SJRWMD
Mike McManus, The Nature Conservancy
Jim Maher, FDEP
Kraig McLane, SJRWMD
Dana Morton, COJ-EQD
Patrick O'Connor, FDEP
Alan Obaigbena, FDOT
Ying Ouyang, SJRWMD
Nicole Robinson, DEP/CAMA-Northeast FL Aquatic Preserves
Vince Seibold, FDEP
Alicia Steinmetz, SJRWMD
Joseph Stewart, SJRWMD
John Woolschlager, UNF

Welcome and Introductions

The meeting began at 10:10 am. John Hendrickson, Co-Chair, welcomed everyone. The participants introduced themselves.

No comments were made on the February 8, 2006 meeting summary.

John noted that there is a Natural Resources Monitoring Subcommittee meeting scheduled on July 6th at the Jacksonville Main Library to discuss the monitoring plan for the basin management action plan (BMAP) for the main stem/nutrient TMDLs. All are welcome to participate. Contact Tiffany Busby for further information.

Presentation: "Treatment of Phosphorus Enriched Sandy Soils in Agricultural Land Prior to Conversion to a Constructed Treatment Wetland"

Pam Livingston-Way reported that the St Johns River Water Management District (SJRWMD) has been monitoring at the farm-level for best management practice (BMP) implementation and effectiveness. Phase I of the Tri-County Ag Area (TCAA) plan just ended with 52 percent of potato farmers participating. Potato growers use more fertilizer than many crops so they were targeted for BMP implementation. There may be up to 90 percent participation now, since many potato growers are shifting crops to pasture, hay, sod and horticulture crops such as spinach, collards, and melons. The District has also looked at other management alternatives to improving water quality in the TCAA. Alicia's presentation will focus on the regional treatment efforts.

Pam has been working with Chad Hutchinson, Institute for Food and Agricultural Sciences (IFAS), on controlled release fertilizer (CRF) development for potato production. They are showing 60-80 percent load reductions during storm events. The research is being continued at the research farm for nitrogen and phosphorus reductions and expanding to other crops. Also, they are looking into conveyance BMPs.

Alicia Steinmetz reported that they have been studying converted wetlands in the TCAA which includes areas in Putnam, Flagler, and St Johns Counties. Alicia noted that to achieve a 30 percent reduction in load, they need 90 percent participation in BMPs. To achieve additional load reductions, two regional treatment facilities are being built. The Dog Branch treatment area is under construction and the Deep Creek West facility is completed.

They have calculated a P-saturation ratio (PSR) for soils. Once saturation is achieved, they would expect some phosphorus contribution from the soils through either sheet flow or subsurface flow. The have a way of calculating the soil phosphorus storage capacity (SPSC) and it is possible that the top 12 inches of soils could become a phosphorus source. They have, therefore, developed a treatment method for soils to bond the phosphorus.

The objection is to apply alum water treatment residual (WTR) to bind the existing phosphorus in the top 12 inches of soil to reach equilibrium. Alicia outlined the methods they used to integrate the WTR into the soils. The results, after one month, when they re-sampled was that they found a significant difference in aluminum and iron (both decreased). They had expected the change in aluminum levels but not the change in iron.

The aluminum amount reduced soluble phosphorus by 95 percent in the top six inches with an overall average of 83 percent in the top 12 inches. However, equilibrium was not reached and phosphorus may continue to react with aluminum over time.

The conclusions were:

- Using inexpensive agronomic tests and calculating the SPSC appears applicable;
- The SPSC appears applicable as a basis for determining application rates and aluminum treatment effectiveness;
- This method provided a cost savings of approximately $17,000 compared to the alternate scientific method/laboratory process to calculate phosphorus flux.

Dean Campbell asked how much over the percentage of aluminum is needed.
Alicia answered that we had given ourselves some room above equilibrium to increase the sites for phosphorus binding.
Joe Stewart asked about the chemical process occurring. He noted that applying aluminum may drag your iron down through the interaction with oxygen.
Alicia replied that yes, they may not want to include iron in the calculations to compensate for the iron that will be lost in the treatment process.
Dana Morton asked if they have sampled water quality yet.

Alicia answered that they started sampling the pond but not at the wetland yet.
Dana asked at what frequency they are sampling.
Alicia responded that they are taking monthly grabs and are planning to install storm auto samplers.
Alan Obaigbena asked what the residence time is for the pond.
Alicia answered that it is 30 to 38 days.
Pat O'Connor asked about maintenance.
Alicia asked that the primary maintenance issue is maintaining the pumps.

John Hendrickson thanked both Pam and Alicia for their presentations.

Legislative Funding Update

Tiffany Busby explained that Kraig McLane was unable to attend the meeting but asked that the legislative update be provided and a summary of funding available for fiscal year 2007, which begins in October 2006. Tiffany reported that $10 million in *ad valorum* dollars are available for reuse projects. $10 million in special legislative funds were received for TMDL related reductions and reuse. For reuse, $5 million is available from the fiscal year 06 budget and $2 million in additional special funds for a total of $17 million for reuse and $10 million for reuse and wastewater treatment upgrades (total funding of $27 million).

The number one priority for funding projects is to target nutrient reductions from point sources. There will be an announcement on July 27th by the City of Jacksonville Mayor's Office about funding and additional details will follow. Tiffany briefly explained that an optimization model had been developed to evaluate the reductions, reuse opportunities and costs associated with wastewater upgrades and reuse projects. The local utilities were involved with developing the information in the optimization model.

There was a question about the scientific funding (restoration tools) usually funded through the Initiative, and whether the restoration tools program was fully funded. Dean Campbell replied that it has been funded but through a different source. The Committee asked Dean to report on the scientific/restoration tools projects that are planned and funded in the upcoming year at the next TAC meeting and he agreed.

Presentation: "Statewide Water Quality Status Report Based on Group 1 Basins in 2005"

Cindy Cosper, Florida Department of Environmental Protection (FDEP), gave a presentation on water quality in the Group 1 Basins. The State's 305(b) report is done every two years. The information then goes into the national report on water quality issued by U.S. EPA. The FDEP is staring the individual basin reports and the Ocklawaha will be next. The evaluations are based on the designated uses. In summary (statewide), fifty percent of the water areas are fine; 25 percent are improving; and 25 percent are declining in quality. Cindy reviewed some of the results of the Group 1 basins from the report. If TAC members would like to review the entire 305(b) report, it can be accessed on-line at http://www.dep.state.fl.us/water/tmdl/docs/2000_Integrated_Report.pdf . Cindy noted that only FDEP status data or their contractor's data are used in the report. All data collected for the report goes into the STORET system.

Report: Indicators of System Health Proposed Project

Ray Bowman and John Woolschlager reported that there is now an environmental center at University of North Florida (UNF). They hope to serve as a contact point in the community. UNF and Jacksonville University (JU) have been approached to product a scientifically accurate report and distribute it over time to help the public make judgments on the health of the river. They are pursing funding from the City of Jacksonville's Environmental Protection Board (EPB) and they are targeting a July 10th presentation to the full Board. They would like to ask the TAC's help and guidance on the annual reports. They want whatever is produced to be respected. They have been asked to create a report along the lines of the *State of the Bay* report. The initial idea is to have a "report card." They would ask for comments from the community and then produce an annual report and a report summary that would focus at first on the Lower Basin and then hopefully expand geographically. There appears to be a heightened level of public distrust now so it would be good to have an independent entity produce the report. The production of the report would include a rigorous review process. The original idea for such a report came through Mark Middlebrook and the Riverkeeper.

Ray and John identified several ways the TAC could help with the annual report/report card such as: 1) Helping to identify data to be analyzed; 2) Identifying how data could be obtained; 3) Setting up some meetings for early input to the report; 4) participating in the review process; and 5) Supporting the projects at the EPB public hearing.

The timetable for the project is as follows: If funding is confirmed in July, the project will start in September. A draft report would be produced in Spring 2007 with a final report issued next summer.

Presentation: "Lake George—Hydrodynamics, Nutrient Budgets and Productivity"

Joe Steward, St Johns River Water Management District (SJRWMD), gave some background statistics on Lake George. Its average depth is three (3) meters, it covers an area of 189.1 km^2, and is the second largest lake in Florida. Lake George resource issues include pollutant load reduction goals (PLRGs)/total maximum daily loads (TMDLs) in the Lower and Middle Basins; the Ocklawaha and potential affects of the Rodman Dam removal; and future consumptive use of waters in the Middle Basin.

Joe reviewed the following information about Lake George: State information; discharge and salinity; bathymetry; average turnover rate (84 days); and nitrogen fixation. Up to 600 tons of nitrogen is fixed in Lake George.

Current work on Lake George includes development of a water quality model to assess the effects of the removal of the Rodman Dam. Joe ran a simulation that estimated the percentage of Ocklawaha water in Lake George and the Lower St Johns and how hydrodynamic flow from the Ocklawaha affects Lake George.

Joe showed the heat budget of the Lake and the model has quite good agreement with observed data. Future work planned includes the integration of the model with the Lower Basin model; model re-colonization of aquatic vegetation; drifter study; and model development of the rest of the Lake George basin and the Middle Basin.

John Hendrickson presented information on the water quality of Lake George. John is looking to develop a crude nutrient budget for the Lake. The location of the Lake is the head of tide for the St Johns River estuary. It is the switch point for autochthonous influence. Historically, there was a 1947 study of Lake George done by E. Lowe Pierce. There has been a ten-fold increase in

chlorophyll since 1947. The Lake has transformed form a macrophyte-dominated system to an algal-dominated system.

Water quality sampling studies have been performed:

- The period of record is from 1989 to the present.
- 400 water quality samples [not including the recent Integration Water Resources Monitoring (IWRM) survey data].
- USGS continuous gage at CM 4-5;
- Sediment composition survey and sediment oxygen demand surveys (1999-2001);
- Primary production and N-fixation evaluated by University of North Carolina (UNC); and
- Historic data from E. Lowe Pierce from 1947.

There is also a long-term phosphorus trend. The nutrient budget includes the following findings: Lost in the Lake are PO_4 and inorganic nitrogen. Gained in the Lake (where the concentration is greater in the outflow than it was in the inflow) are non-PO4-P, organic nitrogen, chlorides, and total dissolved solids (TDS).

The finding here is that a lot more nitrogen is coming out of Lake George than is going in and it appears to be generated by cyanobacteria N-fixation.

Technical Updates and Announcements

LSJ Nutrient TMDL/Fecal Coliform TMDL Update-Vince Seibold

Vince Seibold provided an update on the site specific alternative criterion (SSAC) for dissolved oxygen. A public workshop was held in April, the SSAC went before the Environmental Regulation Commission (ERC) in May and is scheduled to be submitted to EPA for their review. No challenges have been filed at the State level. There is another opportunity for legal challenges at the federal level. The next steps include developing a new TMDL based on the SSAC and the allocation for a new TMDL. A basin management action plan (BMAP) will be developed that will include the detailed allocations. The model is being updated to see what reductions are needed to achieve the SSAC. We will complete the BMAP process and it is possible that a new TMDL will be sent to EPA for consideration in September. To achieve the TMDL, the following actions are needed: 1) Wastewater facilities upgrade to advanced wastewater treatment; 2) Reuse, reuse, reuse; 3) Development of tributary TMDLs and BMAPs; 4) Development of pollutant trading; and 5) Permit issuances.

Tiffany Busby noted the upcoming meeting schedule including a meeting of the Tributary BMAP Working Group to discuss fecal coliform TMDLs on July 28th. All are welcome to attend.

Alliance Update

Vince Seibold reported that the Alliance Board recently met on June 16th in Palatka.

Member Updates

Nichole Robinson noted that CAMA has been working with The Nature Conservancy, Florida State Parks, the Timucuan Preserve to focus on coastal marshes and their boundaries, including the watersheds of the preserves. Their focus is getting more water quality information on getting that information out to stakeholders. TAC members can contact Nicole for more information. Mike McManus was also present and has been working with the data.

Next Meeting
It was determined that the next meeting would be in August with the City of Jacksonville as host [Editor's note: Subsequently, the next meeting date was set for August 17, 2006 at Jacksonville City Hall from 10 am to 2 pm].

Adjournment
The meeting adjourned at 1:15 PM.

Meeting summary prepared by Tiffany Busby. Please send comments to busbytl@bellsouth.net or call 904-797-2721.