

**IRL-North Project Delivery Team Meeting #8
December 16, 2003**

To: Attendees

From: ADA Engineering, Inc. & HDR Engineering, Inc. (ADA/HDR)

Subject: United States Army Corps of Engineers (USACE) and St Johns River Water Management District (SJRWMD) Indian River Lagoon (IRL) North Restoration Feasibility Study
Project Delivery Team (PDT) Meeting Summary – December 16, 2003

Attendees: See attached sign-in sheet

Handouts: Meeting Agenda

The Eighth Project Delivery Team (PDT) meeting for the Indian River Lagoon-North (IRL-N) Feasibility Study was held at the St Johns River Water Management District (SJRWMD) Field Office in Palm Bay, Florida on December 16, 2003. The meeting began at approximately 10:05 am.

WELCOME, INTRODUCTION, AGENDA, AND FACA REMINDER

Debbie Peterson, Planning Technical Leader for the United States Army Corps of Engineers welcomed the PDT members. She stated that the meeting was being recorded if no one objected. She requested that all attendees introduce themselves and the agency they are representing. As an icebreaker, Debbie requested that each individual answer the following question: “What’s the best or most unusual Christmas gift you’ve ever received (that you can talk about in public)?”

Paul Tritaik, U.S. Fish and Wildlife Service, made a presentation to SJRWMD’s Troy Rice and Bob Day for their efforts in assisting with the Pelican Island Centennial celebration. Certificates for Florida Inland Navigation District (FIND) will be given to them at a later date.

Debbie provided an overview of the agenda (Attached) and used a Microsoft PowerPoint presentation to highlight the key points. The agenda included the following items:

- Team Member Roles (Federal Advisory Committee Act -FACA)
- Public Comment/Presentation – Geographical Information System (GIS) Mapping to ID Land Acquisition & Restoration Strategies for IRL-N– Doug Shaw, The Nature Conservancy
- Sediment Management Strategy Scope of work – Steve Schropp, Taylor Engineering
- Feasibility Scoping Meeting (USACE Requirement) – Debbie Peterson

- NOAA Turbidity Monitoring in IRL – Dr. John Proni, National Oceanic and Atmospheric Administration (NOAA)
- Public Comment
- Problems and Opportunities – Debbie Peterson
- Breakout Groups
- Breakout Group Reports
- Public Comment
- Next Steps
- Adjourn

Debbie indicated that breakout groups may or may not be utilized, depending on what happens in the Problems and Opportunities segment of the meeting.

PUBLIC COMMENT/PRESENTATION

GIS MAPPING TO IDENTIFY LAND ACQUISITION AND RESTORATION STRATEGIES TO BENEFIT IRL-N (DOUG SHAW)

See attached Powerpoint Presentation.

This project is a GIS mapping project for internal use by the Nature Conservancy (TNC) to identify potential for any restoration opportunities, agricultural lands that may be out of use and can be turned into water quality opportunities, and unprotected natural lands that contribute to water quality.

The study area includes all of IRL-N, with a Northern Zone and a combined Central/Southern Zone based on hydrology, tidal influence, differences in pre-drainage land, and land use.

A similar project was done in the Kissimmee, Okeechobee Valley looking at wetland restoration on private land that may have conservation and water quality value.

The Central and Southern Zone Analysis focuses on the historic flatwoods landscape west of the Atlantic Coastal Ridge.

The process consisted of:

1. Identify restorable freshwater wetlands (RFW).
 - Define historic flatwoods landscape (search area)
 - Identify degraded drained wetlands from Soils Maps
 - Overlaid that information over low intensity agricultural lands (cattle grazing, etc.)
2. Used a process to rank them based on:
 - Hydrologic benefit
 - Conservation value
3. Identified clusters of RFWs

Doug Shaw presented a series of generic maps of the region using a GIS database to identify hydric uplands, which are wetlands that are historically present because they are located on hydric soils but are no longer identifiable as wetlands. From there, “drained wetlands” were added, which are wetlands that are identifiable in the wetlands inventory but are somehow labeled as “drained” in the dataset.

He presented an example of a wetland footprint that had diminished over time. Following, an analysis was developed to determine if any of the wetlands that still exist are functional.

From there, they took the hydrograph dataset (1:24,000 dataset), pulled out ditches/canals and overlaid it on existing wetland data coverage. The dataset includes a 100-meter buffer. Finally, they selected the wetlands located within the 100-meter buffer. The GIS analysis displayed possible wetlands for potential restoration.

The analysis was overlaid with land use information for low intensity agricultural lands and open space areas as a filter. The final mapping set displayed restorable freshwater wetlands in the Historic Flatwood Search Area.

Doug provided further explanation of the process and its purpose. He explained that the analysis shows the wetlands that are no longer there as well as the wetlands that have been degraded. Since, they are trying to identify wetlands that are restorable, they looked at places in the landscape where they believe they can perform wetland restoration.

The question arose regarding the difference between blue and red on a display map. Doug explained that the blue area represents the wetlands that have been degraded.

The rest of the analysis included a weighted average approach. They used attribute tables to rank based on the following categories:

- Water quantity benefits
- Water quality benefits
- Land Use Ranking

The analysis was applied to the following scenarios:

- Lands for acquisition scenario – considers only lands in private ownership
- Potential for water storage – An estimation of the acreage of freshwater wetland as a percent of the sub-basin was used as a surrogate for storage potential

The water quantity benefits were demonstrated through a series of slides showing the areas of resulting RFWs.

Water Quality Benefits were analyzed using:

- Land Use Ranking - based on empirical method published in a St John's District report. This measure relates land use type to a loading rate for each benefit. This was used to determine the qualitative ranges.
- Drainage Density – estimates the local density of ditches and canals. It is a measure of the total length of waterway per unit mile. For water quality purposes, the assumption is that higher drainage density lands are harder to restore. On the other hand, higher drainage density lands are correlated with higher nutrient loads. Therefore, they created compromise ranking for both categories where a low score was given to very high drainage densities or very low drainage densities. Middle ranges yielded higher scores.

The analyses for habitat, species, and adjacency ranking followed standard methods. They used a 3-km buffer around the conservation data layer that was composed of the following:

- Florida Natural Areas Inventory (FNAI) conservation managed areas
- Peninsular Florida Ecoregional Plan
- Conservation targets identified locally for the IRL project

Higher scores were given to properties that were at close proximity to any of the conservation features identified.

Finally, the weighting of the categories was based on weighted averages. They displayed a graph of the total acreage of wetlands with varying scores. Over 6000 impacted acres scored 3 and above. Greater than 500 acres scored 7 and above. Therefore, the total area of RFW wetlands was around 8000 acres. They also looked at historic wetlands.

Question: How far back does the historic data go?

Answer: The data was based on soil surveys from the early 50's. The assumption is that if the soils are denoted as hydric then the area is part of the long term pattern of wetlands. At the planning scale, it is an acceptable estimate.

The Northern Zone Analysis focused on two factors for water quality: Protection of riparian zone and non-point source reduction.

The protection of riparian zone buffer areas refers to the degree of protection of riparian zones. Unprotected riparian zones were considered to be located in very small tributaries, primarily in agricultural lands. They also identified specific agricultural lands by using similar weighted averages to determine if there were any water quality benefits in taking some of those lands out of production. The top land uses included: citrus grove, brush lands, and various open space lands approximately 1,000 acres each.

The analysis consisted of three fields:

- Land Use Ranking –similar to Southern portion of the study
- Drainage Density Ranking – similar to the Southern portion of the study
- Water Quality Ranking (highest score – most polluted)

Additional factors included acreage of deciduous contributing area. The conservation factors were similar to Southern portion.

They applied two separate weighting schemes: equal weighting scheme and water quality only weighting scheme.

In summary, the Central and Southern Zone identified four clusters of highest ranked Restorable Freshwater Wetlands (RFW) with potential for increasing water storage and wetlands habitat and reducing pollutant loads. The Northern Zone identified three clusters.

Doug displayed a map with layers showing existing conservation areas, statewide conservation priorities and critical linkages, the wetlands restoration areas identified from analysis (connectors between existing conservation areas), and finally with active conservation projects. They observed overlap and similarities with existing plans.

Questions and Answers:

Question: What would you do differently?

Answer: They are not completely happy with the level of complexity of the analysis. It is in-line with the preferred methodology but they are not completely comfortable with the land use loading analysis. They want to also redefine the land use/loading relationship.

Question: Can the file be provided electronically?

Answer: They can provide a computer file to Debbie.

Feedback from the Florida Department of Agriculture concerns two items: Recently, they reached a memorandum of agreement with St Johns River and South Florida Water Management Districts (SJRWMD, SFWMD) about implementation of the Conservation Reserve Enhancement Program (CREP) which concentrates on low intensity, range and pasture lands and how to keep them out of development. Also in effect is the Indian River Area Citrus Project Management Plan (PMP) with the Best Management Practices. This is for Citrus Growers and addresses nutrient loadings, water quality and water conservation issues. It was adopted by rule in June 2002. Currently, 90% of citrus acreage has been enrolled and addresses the issue as it relates to Total Maximum Daily Loading (TMDL). This approach makes agriculture (# 2 industry in the state) responsive to environmental concerns. Other areas are trying to set up CREP-like programs with funding coming from within the respective basins. This relates to the areas where conservation restoration programs are being developed. Purchasing an easement for

controlling potential agricultural lands has good and bad points. Water quality methodology and the land use relationships may have some difficulties. Some of the source information comes from SJRWMD documents. However, the best management practices (BMP) do seem to be effective.

Question: Issue concerning future land use and conservation easements.

Answer: Some farmers have concerns about conservation of wetlands. Farmers and ranchers want to keep wetlands out of urban development because this relates to market development. However, the conservation easements are in perpetuity and this limits their future ability to change strategies. They want to keep options open and it relates to future growth, development and change in development.

SEDIMENT MANAGEMENT STRATEGY SCOPE OF WORK (STEVE SCHROPP)

Debbie introduced Steve Schropp of Taylor Engineering. Steve gave a presentation (Attached) on a scope of work concerning sediment management strategy (non-field work), which although not in effect at the moment is about to be issued early next year. It consists of two major components:

Upland sediment management – prevent/reduce loading of sediment to waterways
Sub-aqueous sediment management- mitigate sediment/muck deposits to reduce resuspension of sediment, etc.

Upland Sediment Management

- Data collection/literature review of SJRWMD. Water Control Districts. USACE, FDEP, etc
 - Land use (historic, existing, future)
 - Soil coverages (GIS)
 - SJRWMD Hydrological Simulation Program--Fortran (HSPF) sediment loading model results
 - Topographic information
 - Sub-basin boundaries
 - Reports on the latest BMP technology and effectiveness
 - Aerial photography
 - TMDL and Pollutant Load Reduction Goals (PLRGs)
 - National Pollutant Discharge Elimination System (NPDES) databases
 - Sediment loading measurements

- Identification of Upland Sources of Sediment Erosion and Loading
 - Estimate sediment loading rate for each sub-basin modeled (historic, existing, and future conditions)
 - Rank the sub-basins according to their potential for sediment delivery to the IRL-N to assist with developing an understanding of the general causes of erosion and with developing erosion management strategies

- Close coordination with the SJRWMD

Question: Can that sediment loading qualify for 'without' project conditions?

Answer: Yes to a certain degree.

- Identification of Shoreline Sources of Sediment Erosion and Loading
 - Assess the general areas of shoreline erosion
 - Compare available SJRWMD GIS coverage of historical (1943) baseline shorelines and existing conditions
 - Also consider hydrodynamic modeling results, bathymetric surveys, aerial photographs, and other collected data/reports such as the Pelican Island Environmental Ecosystem Restoration study
- Identify Appropriate BMPs and Other Erosion Control Systems
 - Identify priority sub-basins and appropriate BMPs and other erosion control systems
 - Build upon in-place BMP strategies/priorities
 - Consider Pollution Load Reduction Goals (PLRG) established by SJRWMD
 - Access SJRWMD and local water resource databases to identify existing BMPs
 - Collate and evaluate priority local government and water control district stormwater management needs, consistent with PLRGs
 - Develop GIS database of available inventories of the stormwater BMPs, retrofits, and monitoring data already completed by the local governments
 - Coordinate with water control district managers to identify priority sub-basins and appropriate BMPs
 - Develop GIS databases of available inventories of in place in-canal and upland BMPs related to water quality improvements and water quantity discharge reductions including nutrient and soil management practices.
 - Evaluate, in general terms and limited detail, the relative cost-effectiveness of the proposed BMPs, including land acquisition or right-of-way/easement costs, based upon estimated load reductions.
 - Estimate the overall percent reduction of sediment loads for each watershed to be gained from prioritized BMPs in relation to the overall pollutant load reduction
 - Evaluate the relative contribution of the proposed stormwater BMPs by the local government/water control districts toward meeting the pollutant load reduction (PLR) targets for each watershed.

A meeting will be set up with water control districts and local governments to discuss information sources.

Questions: As you look at sediment loading, can you look at sediment loading categories?

Answer: Finer sediments will come out of tributaries. Included with the HPSF modeling, we will identify the fraction analysis. There is no field data collection in this scope of work. We will collect from existing data sources.

Questions: What about information/data gaps?

Answer: Missing data will have to be brought before the PDT to find a funding source.

Sub-aqueous Sediment Management

- Data collection/literature review
 - Muck maps/reports
 - “Muck Deposit Assessment and Management Project” BCI Engineers & Scientists, Inc
 - Bob Day and Joel Steward
 - FIND dredged material management sites/plans

- Evaluation of Long-term IRL-N Sedimentation and Dredging Needs
 - Summarize existing dredged material management plans for the study area and provide applicable study related fundings or updates
 - Review available data and literature to estimate location and quantity of undesirable muck deposits in IRLN including major contributing tributaries
 - Identify key long-term sedimentation load sources
 - Estimate the corresponding sedimentation rates (existing and future conditions)
 - Estimate the associated dredged material management requirements
 - Identify and summarize existing dredged material management plans for the study area and describe their impacts on the IRLN feasibility study
 - Identify possibilities for working with these plans to implement more cost-effective solutions to the IRLN sediment management strategy
 - Estimate costs, impacts, and possible funding sources for muck management strategy alternatives

Question: How far up will the analysis go?

Answer: As far as the data will support it.

Question: What do you mean by impacts?

Answer: Various ways to assess effects of management practices

Question: Any look at natural muck in the system (fine sediment) as apposed to gross concentrations of muck? Is all muck bad? Content of the muck? Pollution Loading?

Answer: It is possible if we can locate undisturbed areas. However, there may not be data available to analyze. We will not do any biological assessments. We will have to look at location of the muck. Shoreline erosion has a play in this also.

- Development of Sediment Management Strategies
 - Develop strategies and priorities for implementation of both upland reduction of sediment runoff (BMPs and other erosion controls) and mitigation of IRL-N sedimentation
 - Close coordination with all study team members to consolidate and avoid duplication of efforts
 - Incorporate both existing and future rates of estimated sediment loading and accumulation

- Identify sources of muck and sediment and develop recommendations to reduce these sources
 - Develop options for disposal or reuse of sediment and muck already accumulated in the Intracoastal Waterway (ICWW), major tributaries, and other sediment traps within IRL-N (consider salinity of sediments, beach quality, appropriate for wetland, etc)
 - Consider creation of sediment traps and settling basins within the tributaries and canals
 - Consider muck removal and improved engineered channels within or directly leading to the IRL-N to reduce sources of resuspended sediments/turbidity during storm events, waves, etc.
 - Address potential impacts of recommended sediment management strategies on the existing level of flood protection
- Muck Removal Performance Measures
 - Develop Performance Measures for muck removal in certain vicinities of IRL-N, including rationale
 - Coordinate draft muck removal performance measures with the Performance Measure PDT subteam

Questions: For planning purposes, we have to provide HSPF output – what is the timeframe that you need information about modeling from the District? Has some data already been provided?

Answer: We expect Notice to Proceed (NTP) for this task order in January 2004, and we don't anticipate any new data runs; however, it may be needed for the future. We will follow the four C rule of: Coordination, compilation, consolidation and communication for full involvement of the PDT

Debbie requested that she be sent the presentation and the PDT will start the process of providing data to Taylor Engineering.

Question: Will you look at spoil Islands?

Answer: They will be reviewed to determine whether they are a contributing factor.

Break: 1200 to 1215

FEASIBILITY SCOPING MEETING (FSM)

Headquarters, USACE (HQ,USACE) requires quality assurance/quality control (QA/QC) overview of feasibility studies. One milestone in the QA/QC process is the FSM. HQ,USACE and South Atlantic Division (SAD) meet with the USACE and SJRWMD PDT and provide guidance about how the team is doing as it relates to the USACE planning process. (See handout Exhibit G-4)

Using Microsoft PowerPoint slides, Debbie reviewed the USACE Six Step Planning Process shown below as it relates to FSM and Alternative Formulation Briefing (AFB).

Six Step USACE Planning Process:

- **FSM: Specify Problems and Opportunities** (Deals with identification of problems and opportunities, including performance measure work underway, which is mostly complete except for shorelines. Goal is to finish this step today.)
- **FSM: Inventory and Forecast Conditions** (Future without project conditions are forecast. These are the conditions against which alternatives are compared.)
- **FSM/AFB: Formulate Alternative Plans** (Some studies have as many 19 alternatives. This many alternatives can become very cumbersome.)
- **AFB: Evaluate Effects of Alternative Plans** (Use models and other sound plan formulation methodologies for the evaluations.)
- **AFB: Compare Alternative Plans**
- **AFB: Select a Recommended Plan**

Since IRL-N is part of the Comprehensive Everglades Restoration Plan (CERP), we want to make sure that HQ,USACE is often reminded that IRL-N is a continuation of the IRL-South Feasibility Study. Further, the Yellow Book (CERP Report) has different funding requirements than currently planned and USACE, Jacksonville District, should begin asking HQ,USACE how to deal with the funding shortfall due to the large amount of money committed to IRL-S. The sooner we establish relationships with SAD and HQ,USACE, the better the QA/QC review process will work.

Questions/Comments/Observations from PDT on FSM

Question: Not sure of how early we should contact HQ,USACE?

Answer: A quantified 'without project' condition will put us in position to start making contact with USACE leadership (Jacksonville District, SAD, HQ,USACE). It is not a public meeting. A year from now (January 2005), we want them involved and we want their buy-in on IRL-N assumptions and process since it was a very complicated process for IRL-S. We need to get the blessing from HQ,USACE early on to prevent wasted effort.

FSM requirements:

- Preceded by Independent Technical Review (ITR)/PDT meeting
- Pre-meeting documentation (see handout Exhibit G-4)
- HQ, USACE/SAD/SAJ/SJRWMD/resource agencies attend
- Usually held in study area with site visit

Relationships with the vertical team are critical to making the entire process work well.

An initial screening of management measures will be done during the problems and opportunities step. For example: one management measure was to pave all roads in order to reduce turbidity. This management measure did not pass initial screening because the real answer should be to handle the source (non-point erosion).

The following will be discussed at the Feasibility Scoping Meeting:

- Steps 1 & 2:
 - Goals/objectives/constraints
 - Describe the existing conditions
 - Describe/quantify the problem
 - Describe/quantify with and without project conditions, including any key assumptions
 - Results of initial public involvement

- Step 3
 - Identify management measures
 - Evaluation of management measures

- Other Issues:
 - Fitting in to CERP

As we move through the year, we will be moving toward preparation for FSM.

Questions: What role will the PDT perform during the FSM?

Answer: During the course of the year, we need to identify what the PDT will do during the meeting. The FSM is a very formal process.

Question: Who and how many will be involved in the FSM? Can we combine the PDT and the FSM?

Answer: We can't combine the two meetings because the FSM is a very formal process and will take at least one full day and also, logistically, because a larger meeting room would be needed

NOAA TURBIDITY MONITORING IN IRL (John Proni)

NOAA has a program of evaluating turbidity. What is the implication for future infrastructure development with and without this project? NOAA has found that we need to do physical and biological (environmental) measurements. We need to understand the flow of water in the lagoon. In association with SJRWMD, NOAA will locate where to take turbidity measurements and identify specific physical measurements in the lagoon and how it impacts the infrastructure development. The review of the turbidity conditions in the lagoon and adjacent to the lagoon will need to be made. There exists a need to sample at much higher rates and for longer periods of time. NOAA will start monitoring next year and for the duration of the project. An acoustic image of pollution/sewage plumes was passed around. It showed a graphic image of a sediment concentration boil (60' in diameter) and the results of a passing vessel and its impact on the vertical plume. This monitoring has no cost to the study and can be used to help to better understand turbidity in the lagoon.

Questions/Comments/Observations from PDT on Turbidity Monitoring

Question: What type of infrastructure development?

Answer: Water, wastewater and energy development. Desalination is a possible example.

Question: How available is the data?

Answer: NOAA will take measurements real-time and allow adaptive control to monitor long-term with continuous review to look at residential growth needs and impacts.

Question: How do you anticipate measuring stressors?

Answer: In the case of coral analysis in the past, it has taken specific stressors and their impact on specific cell growth to determine patterns of impact by salinity and other factors.

Kathy LaMartina, SFWMD made an announcement concerning “Watershed in Transition” Symposium in Martin County, January 7-9, 2004 for the St Lucie Estuary and Southern Indian River Lagoon Watershed Symposium at Hutchinson Island. The purpose of the Symposium is to bring together representatives from government and private entities working on watersheds and water bodies in Martin and St Lucie Counties. Reports and status information will be presented about watershed water quality protection and enhancement, the link between land use and impacts to the Estuary and the Lagoon and understanding the long term goals of the program. It would be beneficial for the PDT to attend the Symposium (cost of \$60). It is sponsored by SFWMD, Florida Department of Environmental Protection (FDEP) and others. Lots of good information will be presented. Flyers will be left on the adjacent table.

Debbie discussed the “Waterways and Byways of the Indian River Lagoon” Book (\$55 value) and its benefit of being a good book for reference.

PUBLIC COMMENT (MORNING SESSION)

There were no public comments presented during the morning public comment period at the meeting.

AFTERNOON SESSION

The afternoon session of the IRL-N PDT meeting began at approximately 2:05 PM with a handout of Problems and Opportunities. There will not be breakout sessions today since we need to resolve these statements.

PROBLEMS AND OPPORTUNITIES – PERFORMANCE MEASURES

July 30, 2003, was the last time the PDT discussed the problems and opportunities in any detail. In the past, breakout groups made comments on the following statements:

Group 1 – All 20 Statements

Group 2 – Statements 5-8
Group 3 – Statements 4-16
Group 4 – Statements 6-14

The goal is to finish these today. There were 19 problems and opportunities statements, after input at the July 30, 2003, PDT meeting, which must be tempered with reality that we will probably not be able to solve all the problems due to budget and time restraints.

Problem statements 1 – 4 (pollutant loading, turbidity, muck deposits, salinity) have similar performance and management measures and if grouped together, would have a significant impact on restoring the Lagoon.

- Problem Statement Number One and Potential Management Measures required no further change per the PDT.
- Problem Statement Number Two, the Performance and Potential Management Measures:
 - Item b.vii – Stabilization of eroding shorelines (source reduction) was questioned on where it should be included since the other issues are centered on muck removal.
 - Sediment could be a problem; however, does it contribute to turbidity problems for this measure. It needs to be defined. What about “soft stabilization of existing shorelines”? What about vegetative stabilization of eroding shorelines
 - Remove muck deposits in Problem Statement since it is covered in Problem Statement Number 3.
 - Turbidity to correlate with muck deposits is problematic. Therefore, change Item a.iv for Performance Measures to *Reduction in turbidity*.
 - Change Item b.i for Potential Management Measures to *Reservoirs (reduction of volume and velocity discharge downstream)*.
 - All others were accepted as written.
- Problem Statement Number Three, the Performance and Potential Management Measures:
 - Change Problem Statement to read: *Muck deposits in the IRL-N are excessive. Disturbance of these deposits by wind wave activity may result in extensive areas of turbid water and the release of nutrients and other pollutants.*
 - Delete Item b.ix from the Potential Management Measures.
 - Change Item b.v to read: *Erosion control at construction sites, ditch banks, canal banks, etc (source reduction)*
- Problem Statement Number Four, the Performance and Potential Management Measures:
 - Discussed changing the Problem Statement concerning the “widely and rapidly” wording. Rewording: *Freshwater discharges in many areas of the IRL-N may result in undesirable fluctuations of salinity. Large and rapid salinity fluctuations can adversely impact a wide variety of important estuarine species.*

- Add Item iii for Performance Measures to read: *Meet established salinity targets, where applicable.*
- Discussed salinity problems and where it impacts the system.
- No monitoring of shellfish is in the program.
- Diseases may have an impact on seagrasses.
- Need a commitment on long-term monitoring for water quality, seagrasses and fishes.
- Plans need to be within capability and budgetary constraints.
- Change Item a.ii to read: *Extent, coverage and diversity of indigenous flora and fauna e.g. seagrass and fishes.*
- Discharges are related to flood conditions and system exceeds existing storage capacity during a rain event.
- Change Item b.v to read: *Timed release of freshwater discharges to meet 4.a.iii.*
- Add Item vi: *Reduce interbasin diversions from St. Johns River to IRL*

Break 3:05pm

- Problem Statement Number Five, the Performance and Potential Management Measures:
 - Circulation improvement in the lagoon for seagrasses isn't the problem. Circulation may not be as serious a problem as originally thought.
 - The issue is to prevent and remove the pollution in the water. Pollution impact may be reduced by exchanging water with the ocean.
 - Change Problem statement to read: *Ecosystem function and water quality may have been adversely impacted by alterations in circulation e.g. construction of causeways in the IRL-N. This has been exacerbated by anthropogenic loadings.*
 - Public perception is important for the project. Seagrass impacts cannot be easily seen by the general public, but trash floating in the water can be easily seen.
 - Change Item a.i to read: *Exchange rates – residence time and flushing.*
 - Change Item a.ii to read: *Water quality.*
 - Eliminate Item a.iii: *Velocity.*
 - Delete Item v: *Improve models and modeling data.*
- Problem Statement Number Six, the Performance and Potential Management Measures:
 - Problem Statement Number One is more general in nature.
 - Problem Statement Number Six is more specific about point sources.
 - Change Problem Statement to read and move to the end: *The extent other sources of pollutants affect the IRL-N is unclear. These sources may include septic tanks, wastewater and waste management, industrial discharges, etc. Information on these sources needs to be gathered and analyzed to clarify the role and importance of these pollutant sources. Should any of these sources prove to be significant sources of pollutant loadings, management measures will need to be developed.*
 - Change Item a.iii to read: *Atmospheric deposition (wet and dry), rainfall on lagoon and stormwater runoff (direct) and groundwater (indirect) loads.*
 - Change Item b.iv to read: *Reduce local atmospheric deposition sources.*

- Problem Statement Number Seven, the Performance and Potential Management Measures:
 - No Performance or potential management measures listed for this problem statement.
 - Make the Problem Statement a footnote.

- Problem Statement Number Eight, the Performance and Potential Management Measure:
 - Change Problem Statement to read: *Submerged Aquatic Vegetation (SAV) coverage has declined in some segments of IRL-N.*
 - Change Item a.i to read: *Seagrass coverage (extent to target water depth)*
 - Delete Item a.iii, v,vi: *Sediment level. Salinity. Temperature.*
 - Change Item b.i to read: *See water quality potential alternatives (1.b).*
 - Delete Item b.iv: *Maintenance or increase of SAV habitat.*

Discussion truncated at problem statement number nine.

Debbie will revise statements with National Atmospheric and Science Administration (NASA) and SJRWMD comments and then distribute to the PDT with a cutoff comment period. These will be reviewed at the next PDT meeting.

PUBLIC COMMENT

There was no public comment during the afternoon public comment period at the meeting.

RECAP/NEXT STEPS/ADJOURN

Debbie stated we are nearly complete with the Problems and Opportunities and will finish at the next PDT meeting. Sub team updates will be provided in the future.

Debbie thanked the PDT for their attendance and participation in today's meeting. The next full PDT meeting will be held February 3, 2004 from 10:00 am – 4:00 pm at the SJRWMD Palm Bay Service Center. The meeting adjourned at approximately 4:05 PM.