

**Indian River Lagoon – North Project Delivery Team Meeting #10
March 30, 2004**

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 – March 30, 2004

Attendees: See attached sign-in sheet

Handouts: Meeting Agenda

The tenth 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) Service Center in Palm Bay, Florida on March 30, 2004. 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 (USACE) 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 Peterson requested that individuals introduce themselves and: “Tell about an April Fool’s joke that didn’t quite go as planned.”

Debbie Peterson 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)) – Debbie Peterson
- Action Items from Last Meeting – Debbie Peterson
- Sub-Team Updates – Debbie Peterson
 - C-54/St Sebastian River Management Measures
 - Ecological
 - Modeling
 - Shoreline Performance Measures
- Sediment Management Strategy Update – Mitch Granat
- Regional Restoration and System Improvement – Bob Ulevich, St. Johns Water Control District (SJWCD)/Sebastian River Water Control District (SRWCD)
- Public Comment

- Lunch
- Treasure Coast Regional Planning Council (TCRPC) Projects- Peter Merritt, TCRPC
- Future Without Project Condition 101 – Debbie Peterson
- Formulation of Alternative Plans 101 – Debbie Peterson
- Break
- Prepare for Breakout Groups – Debbie Peterson
- Breakout Groups (Formulate Alternative Plans) - All
- Public Comment
- Next Steps/Adjourn – Debbie Peterson

Sub-team Updates

C-54/St Sebastian River Management Measures: This sub-team met October 9, 2003 to discuss existing data and pertinent work underway in the sub-basin. Much of the pertinent work underway was not scheduled for completion until the end of December 2003. Therefore, the sub-team planned to meet again in conjunction with an early 2004 PDT meeting.

Ecological: At the February 4, 2004, meeting, Eric Reyier (contractor for National Aeronautics and Space Administration (NASA)) presented results from a recent two year study on “Spatial Distribution of Larval Fishes in the N. Indian River Lagoon Complex, Florida”. It was determined that the causeways have not impacted the ability to transport for larvae included in the study. Rich Paperno presented an evaluation of Florida Marine Research Institute (FMRI) fisheries data that looked at species richness versus distance from the inlet, which did not indicate a “break” in species richness at causeways. Rich Paperno, FMRI, and Chris Harnden, Florida Fish and Wildlife Conservation Commission (FFWCC) have also evaluated FMRI fisheries data with regard to species abundance versus distance from the inlet. Several species were evaluated including species that spawn inside and outside the Lagoon. There was no overwhelming evidence that the causeways were affecting any of the species evaluated. The abundance of species tapers off further away from the inlet, an expected occurrence. This evaluation supports the conclusion that fishes are variable and the abundance of fish is more an indication of habitat quality in the vicinity of causeways than distance from inlet. This evaluation will be discussed in greater detail at the 31 March 2004 Ecological sub-team meeting.

Further study to investigate whether causeways have a definitive negative impact on biological resources in the study area would require more funds; therefore, does the PDT feel more study is needed? It was concluded that the PDT would have a hard time justifying through a cost/ benefits ratio any further study expenditures since there is an abundant fish population. There doesn't appear to be an impact due to causeways. Dana Fike, Florida Department of Environmental Protection (FDEP), stated that their agency has developed a study proposal for further evaluating effects of causeways on the IRL.

Performance measures for hard clams and oysters were also discussed at the last Ecological sub-team meeting. It was suggested by Bill Arnold, FMRI, that hard clams were not good candidates for performance measure targets. Oysters are better since they

don't move, while clam beds do move. The PDT noted the oyster modeling performed by Dan Haurert, SFWMD, for IRL-South, and that information and the model should be considered for IRL-N. Dan Haurert will be invited to the next Ecological sub-team meeting.

The historical significance of oysters in the Lagoon was discussed. Is there any significance to the thought that the Indian middens had alternating layers of clams and oyster shells? Areas south of St. Sebastian Inlet have large deposits of oyster shells. In the past, the Lagoon was more of a freshwater environment. St. Lucie Inlet was opened by early settlers to increase the flow of marine resources into the Lagoon. An historical overview of the IRL-N study area, including the history of the inlet openings and historical significance of oysters, would be beneficial for the PDT and will be requested from Grady Caulk, USACE cultural resources PDT member.

Dean Luethje, Fellsmere Water Control District (FWCD), suggested that anecdotal information indicates that in the early 1900's, there were not as many mangroves in Indian River County, there were more salt marshes than mangroves. The PDT is using 1943 as a baseline for Performance Measure targets. It was noted that the inlets were constructed prior to 1943. The PDT will need to include in the feasibility report the pre-drainage condition and pre-inlet condition for the study area.

Question: What is the southern boundary of IRL-N?

Answer: The southern extent of IRL-N is Ft Pierce Inlet. It was also noted that this project would overlap with the study area of the Indian River Lagoon - South (IRL-S) Feasibility Study that is within the jurisdiction of the South Florida Water Management District (SFWMD).

Modeling: This sub-team last met on February 3, 2004. Criteria for selecting the nominees for the Model Evaluation Group (MEG) were established. A matrix for use in ranking the MEG nominees was developed and is under review by the modeling sub-team. The criteria include: independent of model to be evaluated, USACE, SJRWMD, and east central Florida interests; knowledge of estuary issues; and knowledge of IRL-N issues. Selection of the MEG and developing a scope of work for their review of the Pollutant Load Reduction Goal (PLRG) model will be completed next.

Shoreline Performance Measures – This sub-team last met on February 3, 2004. The significant action item was the competition of the ground-truthing of spoil islands included in the 1980 Spoil Island Management Plan. Currently, the sub-team is working on location of existing data sources (Geographical Information System (GIS) and/or aerial maps) that will enable the determination of shoreline developed and removed from the ecosystem inventory, which will aide in developing a shoreline restoration performance measure. The next meeting will follow today's PDT meeting.

Sediment Management Strategy (SMS) Update – Mitch Granat

Task Order with Taylor Engineering has been signed. Tasks include:

- Task 2.1 – Collection and Review of Literature and Data
 - GIS Coverages / Maps
 - Available Data Sets
 - Upland Soils Information
 - Landuse (Historic, Existing and Future)
 - Sub-Basin Boundaries
 - Topographic Information
 - Aerial Photography / Shoreline Information
 - Available Data Sets
 - HSPF Information (Input and Output). Maintain HSPF and SMS Consistency
 - Water Use Permit Databases
 - Total Maximum Daily Loads (TMDLs) and PLRGs
 - NPDES Databases
 - Sediment Loading Measurements
 - Dredged Material Management Plans
 - Muck Studies and Maps
 - Latest Reports on Best Management Practice (BMP) Technology and Effectiveness
 - Inventory of Existing Stormwater BMPs and Retrofits
 - Associated Monitoring Data Collected for Implemented BMPs
- Task 2.2 – Identification of Upland Sources of Sediment Erosion and Loading
- Task 2.3 – Identification of Shoreline Sources of Sediment Erosion and Loading
- Task 2.4--Identification of Appropriate Best Management Practices and Other Appropriate Erosion Control Systems
- Task 2.5—Evaluation of Long-term IRL-N Sedimentation and Dredging Needs
- Task 2.6 – Development of Sediment Management Strategies

The Contractor will be looking for existing BMP's and other related information. This task order will also include identification of muck locations (mapping), general cost estimates, and muck removal performance measures. The PDT was requested to assist with identification of possible data sources.

A Kick-off Meeting was held March 10, 2004 with the Brevard and Indian River County Intergovernmental Stormwater Working Group with a presentation to introduce SMS efforts and requirements. Also, contact with a Volusia County Representative (Ms Nancy Christman) has been established.

Debbie Peterson acknowledged Mitch Granat for his efforts at getting this Task Order with Taylor Engineering fully negotiated and executed. There will be draft report prepared and given to the PDT for review.

It was noted that the Total Suspended Solids (TSS) data from SJRWMD may not be correct and steps are underway to correct it.

Regional Restoration and System Improvement—Bob Ulevich

Dana Fike, Carrie Kelly, and Greg Graves (FDEP), SFWMD and SJRWMD were acknowledged for their contributions to the presentation (attached). Bob Ulevich began the presentation by describing the project area through reference to a map and the identification of political boundaries and water control structures.

Issues include:

- Water Quality: Reduce Discharges and Sediments
 - Reservoirs and STA's
 - Sediment Fallout/Trapping
- Water Quantity
 - Supply and Storage / Banking
 - Deposit Surplus
 - Withdraw as needed
- Positive Groundwater Influence
 - Less Withdrawal
 - Positive Recharge

Information Timeline/Highlights:

- December 19, 1947—Comprehensive Report on Central and Southern Florida (C&SF) for Flood Control and Other Purposes—House Document (HD) No. 643, 80th Congress
- June 30, 1948—Flood Control Act—Public Law (PL) 858 (Authorization)
- 1954—Authorization as part of HD 643, 83rd Congress—PL 780 Flood Control Act
- August 1956—Preliminary Engineering Study (PES) (Clawson; Telfair—C&SF Flood Control District (FCD))
- January 23, 1957—USACE General Design Memorandum (GDM)—Supplement I Part III—Upper St. Johns River Basin and Related Areas
- March 20, 1957—USACE Proposed Plan of Improvement
- 1962—Establishment of St. Johns Drainage District (Plan of Reclamation)
- February 1962—Modification of Plan of Improvement—Removal of S-98 Structure / Conservation Area
- March 1969—Modification to Plan—Sunshine State Parkway (TPK) Proposed Path Change
- 1973 / 1974 – Chapter 373—Establishes Water Management Districts
- 1975 to 2003—Intermittent Dialogue Amongst Stakeholders
- 2003 – Stakeholders Discussion –Project Re-commencement

The United States Congress authorized “A Preliminary Engineering Study of Flood and Water Control Problems in the Upper St Johns River Basin, Florida” as part of the C&SF Flood Control Project. In August 1956, the Central and South Florida FCD and USACE completed this PES and companion GDM, dated March 20, 1957, which proposed viable solutions to water resource needs.

An excerpt from the PES, referencing page 9, described the historic pattern of water flow: “Water has piled up in the marsh, to find its way seaward, either through the sinuous St. Johns some 300 miles northward, or (formerly) to spill over through low swales or notches through the Atlantic Coastal Ridges into the Indian River basin, only a few miles eastward; or in times of extreme high stages to spill southward and eastward across the Allapattah Flats into St. Lucie River or Taylor Creek drainage basins.”

The PES discussed the need to store water during surplus and release as needed. The proposed plan in the PES included a reservoir in Indian River and St. Lucie counties (Indian River / St. Lucie Reservoir) to provide irrigation for surrounding areas, indicating that the primary purpose of the reservoir is water conservation and flood storage. The proposed plan included utilizing the Florida Turnpike borrow pits for conveyance canals and a water control structure (S-98) at the south end of the reservoir. This proposed plan was never implemented.

The Regional Restoration and System Improvement proposes implementing the plan proposed in the 1956 PES and 1957 GDM, with modifications. This proposal would benefit Indian River Lagoon-North by improving water quality and reducing sediment deposits. It was indicated that key people in Tallahassee are now discussing the feasibility of implementing this plan. It was emphasized that timing is essential for the acquisition of the property required for this project. See PowerPoint slides with reservoir footprints, indicating water flow direction and the ideal control of the canal systems.

An open discussion took place regarding the proposed project benefits, costs, and plan of execution. The Indian River Lagoon-South project will be targeting \$100Million to build reservoirs and 4,000 acres were acquired for \$10Million. Bob Ulevich acknowledged that there would be a cost difference to construct the 1957 water system project with the new modifications. It was estimated that the water system project would require the acquisition of ten to fifteen thousand acres of land, mostly citrus lands.

There's a short time period (2 year window) to accomplish this due to land requirements and costs. SJRWMD and SFWMD leaders are discussing the feasibility of this concept and are looking to include partnerships with the counties in the vicinity and other private-public multi-party relationships.

Public Comment

No public comment was provided for the morning session.

Lunch

Treasure Coast Regional Planning Council Projects – Peter Merritt, TCRPC

Peter Merritt presented the current and future development plans of the region surrounding St. Lucie County (see attached Powerpoint presentation). The TCRPC is involved in the review of large projects that meet certain criteria. Typically there are very few that meet this criteria. However, there are several small projects, that when evaluated by their cumulative effect, can be significant.

Discussion items included:

- Population Growth
- Regional Hotspot for Development
- Waterway Village
- Calpine Blue Heron Energy Center
- North St. Lucie County Charrette

Population projection for Indian River and St. Lucie Counties follow:

County	2002	2030
Indian River	118,149	177,500
St Lucie	203,360	314,000

Population for Indian River and St. Lucie Counties, as of 2000 was as follows:

- **Indian River County** **112,947**
- City of Vero Beach 17,705
- City of Sebastian 16,181
- City of Fellsmere 3,813
- Town of Indian River Shores 3,448
- Town of Orchid 148
- **St. Lucie County** **192,695**
- City of Port St. Lucie 88,769
- City of Fort Pierce 37,516
- Town of St. Lucie Village 604

Port St Lucie is very pro-development. Most of the farmlands to the west have been purchased or will be purchased by developers. Over the last two years they have added 20,000 units per year. It is very frustrating to planning agencies. There is no regional planning. It is very haphazard and resulting in a poorly planned countryside. Overall, permit conditions are being met but this system of development is not beneficial.

Blue Heron Energy Center is located at the boundary of Indian River and St. Lucie Counties. It is currently on hold due to lack of a client. The plans are re-submitted each year. Pertinent facts include:

- 47-acre parcel
- 1,058 Megawatt
- Natural gas fired
- Four combustion turbine generators
- Water supply for cooling towers

- Indian River Farms Water Control District
- Indian River County Reclaimed Water (supplemental source)

Waterway Village is a gated community located near Vero Beach. The North Relief canal is located on the northern edge of the parcel. Endangered species currently residing on the parcel include scrub jays, bald eagles and gopher tortoises. Pertinent facts include:

- 700-acre parcel
- 1,740 dwelling units
- 5,000 square feet of retail
- 20,000 square feet of community space
- Build-out date--2012

This project is not consistent with the TCRPC guidelines. The TCRPC would like to see a town-center approach with a grid system to help with traffic flows. The TCRPC has limited authority on these types of projects. Primarily, they will provide a recommendation, but ultimately the County has final decision-making authority.

The study area included in the North St Lucie County Charrette is 28 square miles (18,000 acres). Most of the region is agricultural. Urban Service Areas have been requested for the western portion of the study area. Residents are concerned about the loss of their rural lifestyle. The TCRPC held the North St. Lucie County Charrette, a public process, on February 7, 2004, to develop a Citizens' Master Plan for the area. Key components of the Citizens' Master Plan include:

- Striking a balance
- Retains large areas of countryside
- Central backbone system for water management
- Interconnected system of greenways, open spaces and parks
- New interconnected network of streets
- Public, institutional, service infrastructure
- Reorganization of land use entitlements
- Accommodates the next 50 years of growth

St. Lucie County has accepted the Citizens' Master Plan and is currently incorporating it into their Comprehensive Master Plan.

Question: How do you get the landowners to transfer the rights when developers offer more money?

Answer: Not all of the land has been purchased by developers; further, many developers have already agreed to do this. Counties will need to change zoning and comprehensive plans to allow this approach.

Questions: Are planning councils trying to get small communities to control development.

Answer: The idea of compacting development and minimizing sprawl helps services / infrastructure and in the long run is more cost effective.

In Indian River County, they are moving toward concentrating development with green space in between and then providing support to the commercial/residential concentrations.

Question: What is the status of major development projects in Northeast St Lucie County?

Answer: No major development at this time.

Future Without Project Condition 101 – Debbie Peterson

See attached presentation.

The USACE Six Step Planning Process includes:

- Specify problems and opportunities – completed
- Inventory and forecast conditions
- Formulate alternative plans
- Evaluate effects of alternative plans
- Compare alternative plans
- Select recommended plan

The PDT is now working on step 2, inventory and forecast conditions. Inventory identifies the current condition of the project area and significant resources. The forecast of the future without project condition estimates the condition of the project area and significant resources at some point in the future if no action is taken. Both should be meaningful to the study objectives and problems and opportunities (Step 1).

The reasons to inventory and forecast include:

- All alternative plans are compared against future without project condition (no-action plan)
- Determines the extent to which alternative plans meet the study objectives
- A sound future without project condition is essential for sound decision-making

Items to inventory and forecast is guided by the problem and opportunity statements and the study objectives and includes:

- Land use
- Climate (rainfall – (wet, dry, average years), evapotranspiration)
- Water resources (hydrology, water supply, flooding, freshwater releases / flow criteria)
- Water quality (salinity, light, total phosphorus, total nitrogen, total suspended solids)
- Physical facilities and operations (C&SF, St. Johns River Upper Basin, C-1 Re-division, local stormwater projects)
- Land acquisition
- Natural environment (run-off, habitat)
- Threatened and endangered species
- Socio-economic setting (economic, population)

- Recreation (qualitatively)

The period of analysis will be 50 years, defined as the effective life of the project, and will begin when the project is operational (2015), since Indian River Lagoon-North is targeting the Water Resources Development Act of 2008 for authorization. Therefore, future without project condition must be forecast for 2015 – 2065.

The recommended approach for IRL-N is to have USACE and SJRWMD personnel inventory and forecast future without project condition. The Feasibility Scoping Meeting is scheduled for early 2005 and the ‘future without project condition’ has to be completed prior to that meeting.

Formulation of Alternative Plans 101—Debbie Peterson

Formulation of alternative plans, an iterative process, is the third step in the USACE six-step planning process. No action, or future without project condition, is always the default plan. Any plan must be better than no action. Management measures are a single feature or activity that address one or more study objectives. The PDT has developed conceptual management measures during identification of problems and opportunities (Step 1 of the USACE 6-step planning process). An alternative plan is one or more management measures. Alternative plans must address one or more of the study objectives.

The process of formulating alternative plans includes:

- Develop appropriate management measures
- Screen out less promising measures. Can any be eliminated? If so, why?
 - o Severe and obvious adverse impacts
 - o Dominated measures—same output for less cost or greater output for same cost, etc.
 - o Constraints—don’t do / can’t do, e.g. statutory (Endangered Species Act, Clean Water Act, authorized navigation project, etc.)
 - o Federal formulation criteria
 - Completeness
 - Effectiveness
 - Efficiency
 - Acceptability
- First iteration: management measures combined into plans using a formulation strategy. Where to start?
 - o With screened management measures
 - o Mutual exclusion
 - Location—can’t occupy the same physical space
 - Function—measures that would work against each other
 - Overlapping—smaller scale or subset of another measure
 - o Combinability—measures that are not mutually exclusive
 - o Dependency—a measure that may be necessary for the function of another measure
 - o Apply plan formulation strategy

- Subsequent iterations where plans are reformulated to better meet objectives and avoid / mitigate adverse impacts
- Select alternative plans for evaluation

Plan formulation strategy examples include:

- All possible combinations
- Start small and add increments
- Start large and eliminate increments
- Start with the most cost-effective
- Others

IRL-N plan formulation strategy will utilize lessons-learned from IRL-S. IRL-S alternative plans included:

Alternative 1: Future without project condition

Alternative 2: Comprehensive Everglades Restoration Plan (CERP) (above ground storage for salinity control)

Alternative 3: Combined single purpose plans:

Water Quality (WQ)

Watershed

Ecological

Alternative 4: Refine 3. Improved WQ and diversion

Alternative 5: Refine 4. Additional improvements to WQ and diversion

Alternative 6: Refine 5. Screened for cost effectiveness / significant increase in benefits

Upon review of these alternatives for IRL-S, Headquarters, USACE (HQ,USACE) required an additional Alternative 7, which was broken down into Alternative 7a (Single Purpose Estuary Only), Alternative 7b (Single Purpose Watershed Only) and then Alternative 7 (Combination of Estuary Only and Watershed Only). In retrospect, HQ,USACE was looking for IRL-S to begin with the single purpose plans (WQ, watershed and ecological) as stand-alone alternatives, prior to combination into the multi-purpose alternative defined by Alternative 3. In other words, HQ,USACE desired to “bridge the (large) gap” between Alternative 2 and Alternative 3. Therefore, the IRL-N plan formulation strategy will include:

Alternative 1: Future without project condition

Alternative 2: CERP (Note: CERP does not include an alternative plan for IRL-N. Therefore, this may change as USACE determines whether this is an appropriate alternative.)

Alternative 3: Single purpose plans

Water Quality/Watershed Only

Ecological (Estuary Only)

Alternative 4: Combine single purpose plans

Alternative 5: Refine 4

Alternative 6: Others

Discussion followed on impact of the removal of causeways on the lagoon. It may help ecology issues but may have a significant impact on transportation, hurricane evacuation,

and other roadway related storm water projects. These impacts should also be considered. Additional work on storm water retention for interstate highways requires significant funding already. If removal or modification of causeways will require matching funds from local governments, there will be less money for storm water retention projects along U.S. 1 and Highway A1A, which are in closer proximity to the IRL. The PDT requested a presentation of future highway projects in the region for an upcoming PDT meeting.

Break – 1415-1425

Breakout Groups

Two breakout groups were formed (C-54 / St. Sebastian River Management Measures Sub-team and the Ecology Sub-team) to begin formulation of alternative plans. A copy of the Problems and Opportunities statements were provided to the breakout groups for their use in the breakout sessions.

The charge for the C-54 / St. Sebastian River Management Measures Sub-Team included:

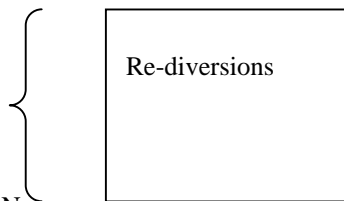
- Provide Water Quality/Sediment Quality management measures (Problem Statements 1 – 4)
- Rename to Water Quality/Watershed sub-team?
- Other sub-basin watersheds need to be included?
- Table causeways until problem identification complete
- Muck removal PM's and mapping from SMS
- Screen out any management measures?
- What do you need for plan formulation, e.g. sizing and siting management measures? (e.g. GIS Mapping, modeling, etc.)

The sub-team was instructed to table management measures for causeways until problem identification is complete and table management measures for muck removal until the SMS mapping is complete. Management measures should be screened based on criteria presented earlier today. It was decided that this group would be renamed as the Watershed Sub-team.

The re-named Watershed Sub-team report out included:

- St. Sebastian / C-54 watershed includes North Prong, SRWCD, Fellsmere WCD, South Prong, Vero Lakes Estates, City of Sebastian
- Other Sub-basins need to be included?
 - o Indian River Farms Water Control District
 - o Indian River / St. Lucie Reservoir
 - Needs tie in with IRL-S and SFWMD
 - Would benefit IRL – “narrows” South to Ft. Pierce
- Turkey Creek 206 and C-1 Re-diversion should be included in FWOPC, so didn't include as sub-basin

- Crane Creek
- Eau Gallie River



- Goat Creek
- Trout Creek
- Kid Creek
- Sub-basins north of Eau Gallie River are small and appropriate management measures would include BMP's and local retrofits only.
- Weed out (screen) management measures
 - Reword "education", use term "non-structural BMP's". Note: PDT discussion expanded this to "non-structural BMP's, e.g. education".
 - No management measures deleted
- What's needed for plan formulation?
 - SJRWMD and USACE can provide what is needed
 - Programmatic flexibility

The charge for the Ecology Sub-team included:

- Provide Living Resources management measures (Problem Statements 6 – 11), i.e. Estuary / Lagoon
- Screen out any management measures?
- Some Performance Measures (PMs) needed, what do you need to develop these?
 - Statement 7. Drift and macroalgae – PMs = relative abundance of macroalgae to seagrass within seagrass beds and total abundance and extent of macroalgae in IRL-North.
 - Statement 9. Oysters & clams – PMs = improve shellfish density, increase of harvestable shellfish waters, reduction of shellfish closures, improve commercial/recreational shellfish landings.
 - Statement 10. Exotic species – PM = decrease acreage or population.

The Ecology Sub-team report out included:

- Problem statement 6 (Seagrass coverage decline):
 - Change "SAV" to Seagrass
 - Remove b.ii. Boater Education & b.iii. Study to determine boating related practices and place in additional study recommendations (non-structural BMP's, e.g. education) to address problem statements 2 and 6.
- Problem statement 7 (Excessive drift and macroalgae):
 - Replace "...replacing beneficial seagrass" with "impacting seagrass".
 - Move b.i. "Identify reasons / conditions conducive to algae growth" to recommendations and add to footnote.
 - a.iv. "Nutrient reduction" should be "nutrient loadings".
- Problem statement 8 (Impoundments): Add to end of b.ii. (Long term management regimes):..."to optimize natural ecological function and sustainability."
- Problem statement 9 (oysters and clams):
 - a.i. (shellfish density): Include "health and extent where appropriate".
 - Move b.vi. (Additional research to id limiting factors) to additional study recommendations.
- Problem statement 10 (exotic species): Include green muscle

What's Next for PDT

Step 1 of the USACE 6-step planning process, specify Problems and Opportunities is complete. The remaining steps need to be completed:

- Step 2--Inventory and forecast conditions
- Step 3--Formulate alternative plans
- Step 4--Evaluate effects of alternative plans
- Step 5--Compare alternative plans
- Step 6--Select recommended plan

What's Next for Study?

Complete models	Dec 03
Future without project condition quantified	2004
Complete alternative plans (formulation/detailed design)	2004
Feasibility Scoping Meeting	2005
Evaluate and compare alternative plans	2005
Select and optimize recommended plan	2005
Alternative Formulation Briefing	2006
Draft report / public review	2006
Division Engineer's public notice	2007
Water Resources Development Act (WRDA)	2008

PDT Comment

It was noted that Indian River Lagoon-South Feasibility Study is about to submit their final report. The Division Engineer of the South Atlantic Division (SAD) will sign the report on March 31st, which will begin the final public comment process.

Public Comment

There were no public comments.

Next Steps/Adjourn

Debbie Peterson thanked the PDT for their attendance and participation in today's meeting. The next full PDT meeting will be held April 29, 2004 from 10:00 am – 4:00 pm, the next Shoreline PM sub-team meeting will be held Thursday, April 29, 2004 from 4:00 pm - 5:30 pm, and the next Ecological sub-team meeting will be held Friday, April 30, 2004 from 9:00 am - noon, all at SJRWMD Palm Bay Service Center. The meeting adjourned at approximately 4:05 PM.

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