Florida Keys Reasonable Assurance Documentation
Technical Working Group Meeting 4
March 23, 2007
Meeting Minutes

This is a summary of the fourth Technical Working Group (TWG) Meeting held March 23, 2007 at the Marathon Government Center with the Florida Department of Environmental Protection (FDEP) and representatives of stakeholders that comprise the TWG. The purpose of the meeting was to discuss FKRAD progress, FKRAD management goals, and stakeholder information. The meeting was attended by representatives of City of Layton, City of Marathon, United States Department of the Navy (USN), Monroe County, City of Key West, Florida Department of Transportation (FDOT), and FDEP. A copy of the meeting agenda and sign-in sheet are appended to this memo along with a copy of the PowerPoint presentation.

DISCUSSION

Recent Consensus Items – Assessment of Living Resources Data

Scott McClelland presented the consensus items from the last meeting. Decisions on management actions should be based on sound data and accepted science. Preliminary assessment of the status of living resources in the water quality target setting should be based on available data and science.

- Water in the Florida Keys is impaired; however, there are currently no statistically significant linkages of impaired water quality to living resources. The Keys experience impaired water quality on a spotty basis which changes based on tides, season and location, and it has been difficult to figure out a regional approach to impairment.

- After the rainy season, algae blooms can become problematic in some canals. The current monitoring efforts are not focused enough to clearly identify the problem.

FDEP described the Assessment of Living Resources for the Florida Keys. The water quality target settling process is based on available data and science; however, there are little or no data nor statistically proven water quality and living resources linkages. The following topics were addressed in the presentation and discussion on the agenda item regarding the linkages between Florida Keys Water Quality and Living Resources.

- *Queen Conch* - Certain heavy metals concentrations in Queen Conch tissues, were found to be lower in the near shore than offshore populations. For copper this may actually be a concern since the primary oxygen carrier in the Queen Conch is copper based. There were no conclusions offered with these data.

- *Seagrass and algae*
    - Aerial photo shows that algae aerial extent of seagrasses has not changed significantly for the last 40 years.
    - A eutrophication model predicts a change in species dominance as the amount of nutrients increases. Nutrient availability causes increases in seagrass biomass and growth rate. If the amount of nutrients in the water increases the amount of algae increases as well.
    - Regional-scale changes in nutrient availability will eventually cause a shift in species dominance in seagrass beds over wide portions of the FKNMS. These changes are not instantaneous and species replacement may take place on a time scale of a decade or more.
    - Some changes in seagrass communities have been noted at nearshore sites of the middle and lower Keys. Nutrient addition to aquatic environments shifts the competitive balance to faster growing primary producers.
    - Around 30 permanent level 1 seagrass monitoring stations are located closer to the shoreline in the middle and lower Keys. Macroalgae increased at four sites, no decreases in seagrass dominance were noted.
    - The goal was to predict the tendency of the system to undergo changes in species dominance before it occurs so that management actions can be taken.
- *Little Venice Study* – Seagrasses were absent at sites closest to the canal mouth. The same sites showed abundance of green algae, which is a strong indicator of increased nutrients in water. Brown algae were also found at the near shore area which indicates low amount of dissolved oxygen (DO) in water.
- *Lapoint, Tomasko and Matzie (1994)* – assessed nutrient concentrations and the productivity, biomass and epiphyte levels of the seagrasses Thalassia and Halodule. Halodule was the dominant seagrass within the closer inshore hypereutrophic strata, whereas Thalassia was dominant in eutrophic, mesotrophic and oligotrophic strata further offshore. Seagrasses at the hypereutrophic and eutrophic strata had high levels of attached epiphytes and mat-forming macroalgae. Seagrasses at the oligotrophic strata had the lowest epiphyte levels of all strata. Nutrient metabolic analyses of the macroalgae and seagrass blade epiphytes in the hypereutrophic and eutrophic strata indicated they were phosphorus-limited due to high available concentrations of total nitrogen relative to total phosphorus.
- *Lapoint and Matzie (1997)* – indicates that percolating stormwater forces out accumulated wastewater nutrients to surface waters which can initiate algae blooms in the near shore waters of the Florida Keys.

- *Reef Building Corals* -Declining trends in stony coral are noted FKNMS-wide. Even in the Dry Tortugas, where there is good water quality, stony coral are in decline. This is a regional phenomenon throughout the greater Caribbean. No identified water quality limits or thresholds were directly linkable to declining stony corals cover.

- *Fish*

    - Reduction in fishing mortality inside regulated reserve areas resulted in a reduction of macro algae growing on the coral. This is due to grazing by parrot fish, which can increase in number if protected from being harvested by fishermen.

    - Parrot fish have become the dominant algae grazers since the decline of sea urchin populations starting in 1983.

    - FDEP has not located studies linking the relationship between nutrients and Florida Keys fisheries.

    - No identified water quality limits or thresholds were directly linkable to fish resources.

Without better data, science and linkages of water quality to the health of these living resources, scientifically robust water quality based targets will not be available for the identified living resources that will be able to withstand scientific scrutiny and legal challenges. Although there are no statistically established linkages and no standards, this does not exclude the fact that there have been loses in living resources in the Florida Keys.

Stakeholders Data Acquisition Meetings

- In order to identify the data needed from stakeholders for the FKRAD, the EPA Reasonable Assurance Guidance has been used. This document requires documentation of management activities and a schedule to meet water quality targets.

- Based on the data acquired from participants, stakeholder summaries will include specific community information including:

    - Stakeholder adopted water quality targets and management goals;

    - FKCCS benchmark conditions data;

    - Identified management practices being planned, constructed and operated by individual stakeholders;

    - Established implementation schedules;

- Anticipated benefits (nutrient load reductions) and monitoring programs; and
- Monitoring programs – water quality and living resources, and effectiveness of pollution controls.

- By generating a list of funded activities and anticipated activities in the FKRAD, stakeholders can establish a realistic schedule with management actions and target goals.
- Through the information obtained from the data acquisition meetings, FDEP creates a draft summary of the information provided. These draft summaries are sent to the stakeholders for their review and comments. Once the summaries are finalized, they are included in the RAD document.
- As of the date of the meeting, the general status of data provided by stakeholders is as follows:
  - Comp Plans – these plans have been provided by participants except Marathon.
  - WW Master Plans - these have been provided by all participants except Marathon and the US Navy.
  - Stormwater Master Plan - these have been provided by all participants except Marathon and the US Navy.
  - Other Plans and Data – these have been provided by Islamorada, Key Colony Beach, Key West and State Parks.
  - Implementation – provided by Key Colony Beach, Key West, Layton and KLWTD.
- FKRAD Scenarios:
  - New millennium baseline – 1999/2000 FKCCS loadings
  - Scenario A – Current Conditions, only for facilities in operation on June 2007
  - Scenario B – Target date of 2012, based in compliance with 99.395 for fully operational facilities and planned facilities with likely funding
  - Scenario C – Target date 2020, current operational facilities and all currently planned facilities
  - Clarification was made that the State deadline is year 2010.
- The first drafts of the Stakeholder Summaries were distributed.

- Current work in progress includes:
    - FKCCS Data has not been included in the drafts of the summaries.
    - Some management practices are incomplete and additional information is needed to complete them.
    - Some stakeholders' documents still need to be provided.
- Stakeholders Actions - The stakeholders were asked to review summaries for interpretations; call to discuss issues and concerns; edit documents and provide needed documents.

Assessment of Selected Management Activities

- The WBID model estimates comparative nutrient concentrations. FKCCS loadings provided a baseline which can be reduced through implemented management practices and after achieved then the reduced loading should be modeled to provide the alternate concentration.
- The WBID models and the Canal models provide a quantitative basis for comparing the relative impacts of the stakeholders' management practices on the halo zone and nearshore WBIDs from the existing baseline.
- Net Assessment Goal
    - Estimate comparative water quality changes that consider stakeholder WW and SW management practices and marine water quality adjacent to the near shore WBIDs
    - Compare estimated water quality changes – identifying water quality targets and living resource requirements and linkage between them.
- Options
    - Shallow effluent disposal wells
    - Deep effluent disposal wells
    - Stormwater infiltration best management practices for Peninsular Florida inland BMPs and near water BMPs and the Keys.

If 100 percent of the runoff gets in the device used as a BMP, then the near shore waters of the Keys will experience improvements.

A concern was indicated concerning the water quality of the water going into the BMP device. It was indicated that there were cases were the water going into the device was of better quality than the water going out from the device. If vegetation was to be used for BMPs, it was clarified that the vegetation to be used should be local vegetation as indicated in the Stormwater Management Master Plan.

Another concern was raised about the interaction of fresh water and salt water through injection wells.

Information Requests

- Living Resource Studies and Data – Available data should be provided; however, it is not expected that additional information will be forthcoming so the TWG will be moving on to concentrate on the management actions.
- The TWG members should concentrate on:
    - Community Management Goals
    - Management Actions – adopted, implemented, in operation and anticipated
    - Community issues and concerns (water quality management and impacts of pollutants on aquatic resources in impaired WBIDs)
    - Identify Resource Management Goals – looking for what is the current operations that may be affecting the water quality conditions in the Keys
    - Identify resource management goals from local living resource concerns, wastewater plans, stormwater management plans, conservation and marine resource management plans, and community concerns
    - Identify management activities from adopted plans, completed design plans, operational projects, funded CIP projects, unfunded CIP projects and program elements, and enhanced regulations

Schedules

- Technical Working Group Meetings
    - Meeting 5 - April 26, 2007
    - Meeting 6 - May 24, 1007
    - Meeting 7 - June 29, 2007 – changed from June 13, 2007

  - Meeting 8 - July 26, 2007

- FKRAD Document Target Dates
  - Completion of initial stakeholder reviews: April
  - Delivery of final stakeholder summaries: May
  - Digital release of draft FKRAD document: June
  - Digital release of interim document: July
  - Digital release of final document: September
  - Distribution of final printed document: End of September
- Stakeholder Agreement Target Dates
  - Release of initial draft agreement: April
  - Release of interim draft agreement: June
  - Distribution of final agreement: August
  - Execution of final agreement: September

Next Meeting

- Technical Working Group Meeting 5: Anticipated Benefits of Implemented Management Actions and BMPs
- April 26, 2007 at the Marathon Government Center, 2796 Overseas Highway, Conference Room 104, Marathon, FL.