CECW-SAD 13 December 2011

MEMORANDUM FOR RECORD

SUBJECT: Central and Southern Florida Project, Comprehensive Everglades Restoration Plan, Biscayne Bay Coastal Wetlands (BBCW), Phase 1, Ecosystem Restoration Project, Final Integrated Project Implementation Report and Environmental Impact Statement, Civil Works Review Board (CWRB).

1. The subject meeting was held 27 September 2011 from 1300 until1550 EST. The Chair and Board Members (Board) for the BBCW CWRB were Major General (MG) Grisoli, CWRB Chair and Deputy Commanding General for Civil and Emergency Operations; Mr. Theodore (Tab) Brown, Planning and Policy Division Chief; Mr. James Dalton, Engineering and Construction Community of Practice Chief; MG Michael Walsh, Mississippi Valley Division Commander; and Ms. Karen Durham-Aguilera, Director of Contingency Operations and Homeland Security.

2. The purpose of the meeting was to gain approval of the CWRB to release the final integrated Project Implementation Report (PIR)/Environmental Impact Statement (EIS) and the draft Report of the Chief of Engineers for State and Agency (S&A) Review and final NEPA review.

3. The meeting was opened by CWRB Chair MG Grisoli who offered welcoming remarks and provided an overview of the meeting purpose for the benefit of the Study Sponsors and others in attendance. The CWRB is a corporate checkpoint to ensure that documents are ready for S&A Review and to provide an opportunity for learning and sharing within the organization. MG Grisoli encouraged an open and transparent discussion of issues.

4. MG Semonite, Commander, South Atlantic Division (SAD), opened the briefing of the BBCW Study, with an introduction of the key partners and the Project Delivery Team.

5. Colonel Alfred Pantano, Commander, Jacksonville District (District), provided the briefing of the BBCW Study, including a description of the project location, affected habitats, ecological processes, and threatened and endangered species; compliance with Executive Order 1357; review of the project authority; description of historic, existing and future without project conditions; outline of study objectives; description of the plan formulation process; defining the Recommended Plan and recreation features; description of project monitoring, project assurances, risk and uncertainty, sea level rise analysis, and public involvement; outline of the study peer review process, compliance with the Campaign Plan and Environmental Operating Principles; and review of the schedule.

6. The Recommended Plan, Alternative O Phase I, would provide ecosystem restoration and recreation. The Recommended Plan would improve the ecological function of Biscayne Bay coastal wetlands by redirecting freshwater, currently

discharged through man-made canals directly to the Bay, to sheet flow across coastal wetlands adjacent to the Bay. This will provide a more natural and historic flow and restore healthier salinity patterns in Biscayne Bay. The Recommended Plan encompasses a footprint of approximately 3,761 acres and includes features in three of the project's four sub-components (hydrologically distinct regions of the study area): Deering Estate, Cutler Wetlands, and L-31 East Flow Way. There are no features in the fourth region, Model Land Basin. A description of the features recommended for the sub-component areas is as follows:

- Deering Estate: This region is in the northern part of the project area and includes an approximately 500-foot extension of the C-100A Spur Canal through the Power's Addition Parcel (Power's Parcel), construction of a freshwater wetland on the Power's Parcel and delivery of fresh water to Cutler Creek and ultimately to coastal wetlands along Biscayne Bay.

- Cutler Wetlands: Features in this region, which is in the central portion of the project area, include a pump station, a conveyance canal, a spreader canal, culverts and mosquito control ditch plugs. The pump station, located on the C-1 Canal, will deliver water to a 6,900-foot lined conveyance canal that will run under SW 97th Avenue, SW 87th Avenue (L-31E Levee), and across the L-31E Borrow Canal via concrete box culverts and deliver water to the spreader canal located in the saltwater wetlands. The spreader canal is divided into four segments.

- L-31 East Flow Way: Features in this region, which is in the southern portion of the project area, will isolate the L-31E Borrow Canal from the major discharge canals (C-102, Military Canal and C-103) and allow freshwater flow through the L-31E Levee to the saltwater wetlands. Gated culverts and inverted siphon structures will isolate the L-31E Borrow Canal from these canals, allowing L-31E Borrow Canal to maintain higher water levels. Two pump stations and a series of culverts will move fresh water directly to the saltwater wetlands east of L-31E. Two more pump stations and a spreader canal will deliver water to the freshwater wetlands south of C-103. Recreational opportunities will also be provided at the site within the project footprint.

The Recommended Plan also includes post-construction monitoring and adaptive management for a period of ten years to ensure project performance. Since the Recommended Plan would not cause any significantly adverse effects on the environment, no mitigation measures (beyond management practices and avoidance) or compensation measures would be required. The Recommended Plan is the National Ecosystem Restoration plan. All features are located in Florida.

The total estimated cost of the project, including all costs for construction, lands, easements, rights-of-way, and relocations (LERR), recreation facilities, and pre-

construction, engineering and design (PED) and construction management costs and sunk PIR costs ($23 million), is approximately $191,018,000.

7. The following is a summary of the questions/comments from the Board (in bold) and responses during as well as after the briefing by Colonel Pantano.

a. **What is the focus of the monitoring and how is it cost shared?** The monitoring focuses on water levels, water quality, and effects on indicator species of flora and fauna. Monitoring will typically be conducted through contracts and/or resource agencies. The monitoring is 50/50 cost shared with the non federal sponsor during construction.

b. **How has the monitoring information been used?** There are two levels at which the monitoring information is used: the system wide (across the entire CERP area) and project specific level. The system wide level examines indicators of overall system functional improvement, such as total water made available, improvements in flows and stages in the whole region. The project specific level examines the restoration in the project area with targets defined by the performance measure for the BBCW project.

c. **What are habitat units and how are they calculated?** Habitat units are a measure of the ecosystem restoration benefits of a project. The habitat units are typically calculated using improvements in a suitability index, as compared to Future Without Project index, multiplied by acreage improved to estimate benefits.

d. **How is the decline in Threatened and Endangered species in the Future Without project condition measured and how will it improve as a result of the project?** Threatened and endangered species populations are generally estimated over their entire habitat, by the Federal agency responsible for stewardship of the individual species, whether U.S. Fish and Wildlife Service or the National Oceanic and Atmospheric Administration. This is because large and mobile species' populations (such as those of marine turtles, manatees and large fish) have to be estimated over a much larger area than the project area (their total range). If the habitat continues to decline on the project area, these species' populations will decline overall or they will move to other areas with more suitable habitat, decreasing species' population in the project area, and further imperiling the species. Generally we utilize habitat surrogates for threatened and endangered species populations, which may be too rare to "count." If project area habitat suitable for these species improves with the project, it is expected that the overall probability of survival of the species will increase. However, we also monitor common species that are more suitable for measurement, as a surrogate for the least common or more sensitive species. If restoration is successful, the habitat quality, measured by sampling the indicator

species (in the case of this project, oysters, sea grass cover) will improve, sustaining the species in the project area and allowing them to thrive.

e. **Is there a range or total number that can be calculated?** Estimating species populations in such a proportionately small fraction of the total species range is not realistic, as mentioned by Biscayne National Park Superintendant. It is generally better to count or measure more common indicators of habitat. An educated guess based on the limited habitat can be calculated, but it is not definitive.

f. **Why should this continue to be a federal investment? In other words, how does the project adhere to the authorization language of "identify the appropriate quantity, timing, and distribution of water dedicated and managed for the natural system"?** The hydrologic characteristics of the project area are analyzed through modeling and the outputs of the model are related to the biological impacts in the project area.

g. **Why was it stated that there is no 'other social effects'?** Relatively speaking there are none. Benefits of the project will be realized locally and in adjacent coastal waters. There are no anticipated adverse effects on socially important resources. The project would not provide a significant increase in this system of accounts, because in comparison to the total area that serves as a fish nursery or invertebrate habitat, the geographic extent of proposed project lands is small. **The Board suggested that there is a strong argument for other social benefits and they should be highlighted.**

h. **Although this is an Ecosystem Restoration project, where qualitative NED benefits examined for the fishery industry?** The improved habitat will lead to an increase in fish, therefore providing benefits to the fishery industry. Commercially important species that utilize mangroves and adjacent marine grass beds for developmental habitat include many species of snappers and groupers, pink shrimp and lobsters. However the overall size of the habitat proposed for restoration is a small fraction of the total of mangrove and sea grass habitat available to provide these benefits. More important is the fact that a considerable portion of the improved habitat is inside a National Park, the second largest such marine park in the Nation, and ecosystem benefits in this area are especially significant for non-economic reasons. A calculation was not established for the commercial fishery and the recreational benefits were determined to be minimal since the project area is only a small portion of the entire FL recreational fishery.

i. **Let's make sure we are using and referencing the correct vertical datum for the Sea Level rise analysis, because there is a 1 ft difference between vertical datum's. The report states there is a loss of more than 20% of the benefits with sea level rise, when do we start counting for the loss in**

benefits? The loss in benefits, annual benefits, due to sea level rise is zero at year zero, and around 40% at year 50. The 20% figure is the approximate average annual benefit reduction due to sea level rise. These estimates were made under the assumption of the high rate of SLR (per the EC 1165-2-211). Benefit loss begins around year 10 after construction but really becomes more significant after year 20.

j. **Will the knowledge gained from monitoring in phase I be used for phase II? And is there enough water for phase II?** From the monitoring of phase I, we will learn a lot about the benefits and impacts and can apply that to phase II. However, implementing the full increment, phase II, will be a challenge because we will not have additional water from the north until we implement the rest of the Comprehensive Everglades Restoration Project. At the moment implementation of phase II is not feasible, however phase I does not rely on phase II to achieve its benefits.

k. **Is the project providing water to the Homestead Air Force base?** No. The Military canal provides drainage, but does not supply water, to Homestead base. The siphon feature is a part of the project to maintain the level of flood protection that exists for the Air Force base. No additional water or benefits are provided to the Homestead Air Force base as a part of the project.

8. The Study briefing was followed by statements and a presentation from the Sponsor, represented by Ms. Melissa Meeker, Executive Director of the South Florida Water Management District (SFWMD). Statements were made to emphasis the strong and positive relationship between the agencies and commitment to the project as illustrated by the expedited construction, even though it's at the Sponsors own risk. The Sponsor also tried to address some of the earlier questions/comments from the Board, by stating that the high degradation of habitat is due to the freshwater pulses, therefore it is important to manage point source discharges to create a more natural sheet flow in the highly urbanized area. Then the Sponsor briefed their presentation, including the importance of the project, their commitment and support of the new Agricultural Residual Chemical guidance and requirements. Then Ms. Meeker, opened up the floor to questions/comments. The following is a summary of the question from the Board (in bold) and response.

a. **What benefits are we seeing from the 2009 constructed project?** We are seeing a freshening of water in the near shore moving in areas were remnant tidal creeks used to exist, according to Biscayne National Park scientists. Reestablishing flow in tidal creeks restores and improves the habitat. We expect to see more robust mangrove growth in areas where this is observable. A two year period is still too early to see significant or measureable biomass improvements.

9. The Sponsor's briefing was followed by statements from U.S. Department of the Interior (DOI), represented by Ms. Shannon Estenoz, Director of Everglades Restoration Initiatives. Ms. Estenoz conveyed the sense of family within the Everglades Restoration community and highlighted DOI's unqualified support for the recommended plan, Alternative O Phase I and stated that both phases are keystone to saving the bay and the flora and fauna by restoring hydro patterns and connectivity to improve habitats. By moving forward with phase I, the benefits are stand alone, achieving improvements earlier. With the Sponsor moving forward with implementation of features, benefits are achieved even earlier. Biscayne Bay is a treasured resource for local and universal visitors and the identity of the Florida culture and economy in the local area. Lastly, Ms. Estenoz acknowledged the SFWMD governing board for coupling ecosystem restoration with their regulatory mission.

10. The DOI statements were followed by statements from the Biscayne National Park (BNP), represented by Mr. Mark Lewis, Superintendent. Mr. Lewis related the problems within the project area to changes in groundwater and seasonal surface flows due to urbanization. In this area wetlands used to be the most productive habitat and now resources are severely diminished due to the lack of water. Although the lack of water is not the only reason, we do have an ability to effect change by providing the water to help increase the number of species and individual fish in the bay. The risk of not going forward with the project equals loss of species, negatively impacting one of our most unique national parks and economy. It is important to restore the Park to sustain the purpose of establishing Parks, and managing lands for future generations.

11. The BNP statement was followed by statements from U.S. Fish and Wildlife Service, represented by Mr. Bob Progulske, Assistant Field Supervisor, US Fish and Wildlife Service, Vero Beach. Mr. Progulske conveyed support for the project, then provided statements to address some of the earlier questions to Colonel Pantano. The organisms monitored include some at the base of the food chain, such as oysters, sea grasses and other simpler organism, to show direct and indirect impacts based on the relationship to the top of the chain. Ms. Estenoz commented again to support Mr. Progulske's response to earlier questions/comments by stating that there is empirical proof in monitoring reports on other ecosystem restoration projects that justifies this approach to measure restoration benefits, as shown by the Kissimmee River Restoration program. This program has shown dramatic improvements and provides a tremendous amount of confidence in the underlying principle of measuring restoration success by restoring the water. The National Academy of Science has confidence in our underlining principle and is in support of getting projects in the ground to further prove getting the water right works for restoration. The following is a summary of the question from the Board (in bold) and response.

a. **The Board asked about the source of funds from the Sponsor for the project**. Ms. Meeker responded that the main source of funding is ad valorem tax supplemented with other funds.

12. MG Semonite, Commander, SAD, presented a briefing of the statements of SAD support, review of legal and policy compliance, quality assurances and SAD recommendations to approve the BBCW phase I report for release for S&A Review and complete the Chief's Report.

13. Ms. Jodi Creswell, Operating Director, Ecosystem Restoration Planning Center of Expertise, introduced the Agency Technical Review (ATR) lead, Mr. Scott Miner. Mr. Miner presented an outline of the different reviews for the BBCW report documents and reviewed 6 main comments from the various reviews, which were all resolved leaving no outstanding comments from the ATR review. These 6 comments included: (1) Ecosystem model certification/metrics/outputs (elevated at AFB); (2) Concise statements of problems, opportunities and objectives (AFB); (3) Real estate needed to ensure project benefits/real estate maps (Draft PIR); (4) Compliance with NEPA/other environmental directives (Draft PIR); (5) Correct and consistent presentation of project costs in report (Draft PIR/Final PIR); and (6) Consistent description of the recommended plan (Final PIR). The following is a summary of the question from the Board (in bold) and response.

a. **The Board asked for clarification on comment 5's reference to project cost.** The ATR comment relates to ensuring consistency throughout the document in cost tables and statements, making sure the different means of representing the cost still represent the same total project cost. The comment does not relate to concerns with the development of the cost, but how they were represented. The development of cost was reviewed through the Cost Engineering Certification process.

14. Ms. Karen Johnson-Young, Program Manager; Ms. Corey Wisneski, Project Manager; and Mr. Brian Bledsoe, Hydraulic Engineer of Battelle Memorial Institute, presented a summary of the Independent External Peer Review (IEPR) team, review process, level of comments and responses and highlighted a comment about the importance of an expanded monitoring plan and its coordination with an adaptive management plan to ensure the success of BBCW. The presentation was followed by questions/comments from the Board. The following is a summary of the questions/comments from the Board (in bold) and responses.

a. **How has the accelerated design and construction accounted for the USACE planning process?** The Sponsor and the USACE team have been working together in the formulation of design to back check with the plan formulation process. The design effort has occurred parallel to the plan formulation effort allowing modifications to design as a result of plan formulation analysis. The Sponsor also emphasized that the real estate in Florida is limited and efforts were made to acquire property under intense development pressure to secure lands for the BBCW Phase I project. The Sponsor has a good start on acquisition; however parcels still remain to be acquired. **The Board stated that it is important to note that the design and plan formulation were integrated.**

b. **What is the enhanced ecological monitoring plan in current PIR?** The monitoring plan, which was originally limited by cost and a 5 year plan, was expanded after new guidance on duration of monitoring was issued. The current plan in the Final PIR shows a10 year timeframe. The revised monitoring plan was based on the new guidance (31 August 2009: WRDA 2007 Section 2039 – Monitoring Ecosystem Restoration and CECW-SAD Memorandum, 27 May 2010, CERP- Requirements for PIRs and Other Implementation Documents). This plan was coordinated with the RIT to obtain guidance on application of the new policy. The IEPR process had been completed prior to this extension of the monitoring period, but the actual indicators to be monitored did not change.

c. **Did the IEPR process result in a cost savings to the project?** The IEPR comments did not lead to a reduction in project cost. IEPR reviews were concentrated on the science behind the project design and formulation.

15. Ms. Jeanette Gallihugh, Review Manager, HQ Office of Water Project Review (OWPR), presented a summary of the various study reviews, policy and legal concerns from AFB and Draft PIR/EIS reviews and two areas of significant policy concern as well as the resolution. Ms. Gallihugh indicated that the HQ policy review team has been working on the concerns with the District and believes that a plan has been reached for resolution. The remaining concerns were: (1) The need to properly reflect the planning process and analyses that were done in order to select the NER plan. This includes the need to better describe why we selected the features that are included in Phase I. As the report is now written, it appears that these were simply based upon Sponsor preference and not proper analyses. This was a previous comment that was not resolved for the final report; and, (2) Residual Agricultural Chemicals: Corps policy is that response actions are 100% non-Federal responsibility. In other words, we get clean lands for Federal projects. The ASA(CW) very recently issued guidance that applies only to residual agricultural chemicals and specifically to CERP project lands. The guidance allows, under specific conditions, for soils with agricultural chemicals to remain onsite in project features and permits the Corps to handle the materials, but not cost-share any actions to address agricultural chemicals. The final PIR is not written in accordance with the new CERP policy nor is it written in compliance with normal Corps policy. The PDT and sponsor are working on report revisions and HQ is reviewing the guidance and revisions for proper implementation. It is important that the final PIR be reflective of the new guidance and also that the interpretation and implementation of it is understood by everyone including the sponsor. The following is a summary of the questions/comments from the Board (in bold) and responses.

a. **How long will it take to address concern 1?** If HQ is able to provide comments to the District by 7 October 2011, the District should have a revised version for review by 21 October.

b. **Is the sponsor willing to accept responsibility for the Residual Agricultural Chemicals?** Ms Meeker, Executive Director of the South Florida Water

Management District, stated that it was their understanding that they have always been responsible; this new guidance has not changed responsibility of the sponsor to provide lands the USACE can use for the project. However, it has allowed additional cost savings by eliminating the need for an additional contract. **The Office of Counsel also commented that implementation of the new policy is not only a requirement for additional language in the PIR, but that we have all the information required as per the guidance. MG Grisoli commented that he did not desire resolution of the two issues above to cause a significant impact to the HQ project review schedule.**

16. OWPR recommended approval to release the final PIR/EIS and the draft Report of the Chief of Engineers for S&A review and final NEPA review contingent upon HQ review of a revised final PIR which will provide additional discussion of Alternative O Phase I formulation as well as Residual Agricultural Chemicals remediation per the ASA (CW) policy letter of 14 September 2011.

17. MG Grisoli then opened the floor for questions and general discussion from the Board (in bold). Following is a summary of questions and issues raised.

a. **Mr. Doug Lamont, Deputy, ASA Project Planning and Review, commented on the lack of emphasis on the justification (environmental benefits) for each feature of the project in the Chief's Report and suggested including language to highlight the benefits for the cost. Mr. Brown supported this comment.**

b. **The Board stated that a lesson learned from the cost engineering is the confidence in the estimates.** The BBCW costs were reviewed through the Center of Expertise Cost Certification process. The project has outlined 3 years for construction, which was reviewed and approved. The Board verified that he 80% confidence level was adhered to.

c. **The Board suggested strengthening the Chief's Report, taking into consideration the current economic climate of the nation: flood mitigation is a priority due to human safety risk, high recent past flood damages, a high budget deficit, and lack of earmarks. Mr. Lamont stated that it is his perception that Congress may feel the nation may be over investing in environmental restoration and spending too little in flood damage reduction missions (the source of many of the Board's questions related to benefits). The team will have to make a strong case to justify the environmental restoration benefits of this project to prove its worth as a continued investment over the national economic development benefits of other projects nationwide.**

d. **The Board suggested improving the forecast of benefits to include biomass of species.** Ms. Estenoz stated that the performance measures used by

environmental restoration projects are proxies for ecosystem health which biological experts are comfortable with using as a measure of ecosystem restoration success. Performance measures capture the appropriate vectors by which to measure success. However, the performance measures do include, for example, monitoring of the endangered Crocodile population. In general biomass collection and estimation is an extremely costly and labor-intensive measurement that may not provide the fastest or most useful indicator of whole ecosystem function.

e. **The Board asked if there are any stakeholder concerns that should be noted.** Colonel Pantano assured the Board that everyone was comfortable with the Recommended Plan and documentation for the BBCW Phase I PIR.

18. Mr. Brown moved that the Board adopt the HQ policy review team's recommendation: Approve release of the final PIR/EIS and the draft Report of the Chief of Engineers for S&A review and final NEPA review contingent upon HQ review of the revised final PIR including discussion of Alternative O Phase I formulation and Residual Agricultural Chemical remediation per the ASA(CW) policy. The study will be updated to reflect:

- The reasoning behind alternative formulation screenings and analyses , including the split of Alternative O and the rationale for features in Phase I, in a logical and comprehensive manner.

- All necessary language and data to revise the PIR in accordance with requirements of the ASA(CW)'s 14 September 2011 guidance on Residual Agricultural Chemicals.

19. MG Walsh moved to amend the recommendation by OWPR to include a contingency of approval based on a schedule for completion of the required revisions through the signing of the Chief's Report. MG Grisoli added that the schedule be provided within 24 hours and seek approval from the Board via a Virtual Meeting. MG Walsh recommended that if the schedule to resolve outstanding concerns slipped beyond November (or another agreed upon date) then a requirement to conduct a virtual CWRB meeting would apply.

20. The Board agreed to the recommendation for approval to release the final PIR/EIS, and the draft Report of the Chief of Engineers for S&A review and final NEPA review contingent upon satisfactory completion of modifications related to the two issues described by OWPR and timely resolution of concerns consistent with MG Walsh's proposal for a schedule and as amended by MG Walsh's recommendation.

21. The meeting concluded with a presentation by MG Semonite on the following lessons learned:

- Importance of continuous coordination with SFWMD when they are advancing design and construction activities.

- Participation by other agencies on the PDT and open PDT meetings improves the quality of the decision document.

- Importance of identifying policy issues quickly – *they may not be quickly resolved!*

22. MG Grisoli closed the CWRB with the following statements. The Everglades is a natural treasure for the country, to be preserved over time in the midst of other challenges that the nation battles. To ensure that we can move forward with the restoration of the Everglades is going to be a balancing act. MG Grisoli thanked everyone for their work and participation. Then emphasized that there is still work to be done with the vertical team to lock in the schedule dates and have everyone in agreement with the proposed schedule.