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January 10, 2005

Mr. Stuart Applebaum  
U. S. Army Corps of Engineers  
Jacksonville, FL 32232-0019

Re: Comments on Guidance Memos 1-6, Pre-CERP Baseline, and MISP

Dear Stu:

Preliminary comments on Guidance Memos 1-6, the Pre-CERP Baseline, and MISP documents are attached for your consideration. These are the result of collaboration among numerous individuals representing a broad cross section of agricultural interests in South Florida. The timing of the release of the draft documents with the review period encompassing the holiday season made it very difficult to perform the detailed review these documents deserve. We greatly appreciate the time you and you staff spent with us last week. It was very helpful.

Although we have numerous comments, the over-riding concerns are:

- The guidance strays beyond the technical and process steps the Programmatic Regulations and WRDA 2000 describe, and appears to be establishing policy positions that do not preserve the balanced objectives of the CERP as approved by Congress and reflected in the final programmatic regulations.
- The memos infringe on the state's authority to make water allocations and reservations under state law. This is an extremely sensitive subject and the final memos must be carefully worded to preserve one of the most important underpinnings of the CERP partnership.
- The complicated numerical strategies for defining specific categories of water (i.e. water "to be reserved" or "made available") can not produce quantitative limits that are useable in the manner contemplated. A more technically valid and straightforward approach that emphasizes the Project Operating Manuals rather than enforceable water quantities would be much more appropriate. The Project Operating Manuals should recognize deliveries for water user demands as well as the environmental performance measures under the state's authority.
- The lack of resolution of fundamental issues such as the SFWMM update, uncertainties associated with the CERP plan (ASR etc.) and the changes in the status of projects and system operations compared to what was planned for in the "Yellow Book," continues to hinder the credibility of the CERP effort. Valuable resources are being wasted on activities such as the premature development of the interim goals and targets and limiting the scope of analysis of projects that is contradictory to the traditional Corps feasibility level studies.

We look forward to reviewing the next draft of these documents and hope you have time to work through some of these difficult issues before the final drafts are forwarded to Washington.

Thank you for your consideration.

T. MacVicar

Thomas K. MacVicar, P.E.

Attachment

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## GENERAL COMMENTS

- Guidance Memoranda were required by the Programmatic Regulations to provide technical guidance for the “internal management of the Corps of Engineers personnel during Plan implementation” [s.385.5 (a)] and for the Project Development Teams and the Project Implementation Reports produced by them. The draft Guidance Memoranda provide more policy direction than technical guidance and in some cases, discussed more specifically in comments on each Guidance Memorandum, evidence policies that are inconsistent with either WRDA 2000 or the Programmatic Regulations.
- Both the Federal and State statutes authorizing CERP include balanced purposes that are also reflected in the definition of “Goals and Purposes of the Plan” in the Programmatic Regulations: “the restoration , preservation and protection of the South Florida ecosystem while providing for other water-related needs of the region, including water supply and flood control.” [s. 385.3] The Guidance Memoranda reflect a policy direction that environmental needs have priority and must be met first and only then will economic needs be met to the extent water is available.
- There are substantial inconsistencies between the Programmatic Regulations and the Guidance Memoranda. This is illustrated by the difference in the way “Restoration” is defined and described in the Programmatic Regulations and the requirements of the Guidance Memoranda in achieving restoration. The Programmatic Regulations make clear that restoration will not achieve pristine, pre-development conditions but restoration is defined by what actually can be achieved by the CERP components authorized by Congress. Restoration required by the Guidance Memoranda is far beyond the Plan approved by Congress and based largely on the Natural System Model outputs that reflect predevelopment conditions.
- The Programmatic Regulations prohibit prescribing “the process for reserving or allocating water or for water management under Florida law.” [385.2 (e)] The Guidance Memoranda, particularly #4, do prescribe the process for environmental reservations that the local sponsor must follow under state law. This must be changed.
- The process to quantify various amounts of water for the purpose of reservation or allocation can only work within the artificial world created by the large-scale computer models developed for the CERP. The output cannot be directly transferred for use outside the model domain in the ways contemplated by the Guidance Memos. The CERP process is driven by computer defined performance measures that at best can be used to guide the general design of project components and to develop a set of operating rules for the projects that are built. It cannot produce specific quantities of water to be used as pseudo guarantees for specific quantitative water reservations. The post-project period can only be judged by the Monitoring and Assessment Plan not a rigid adherence to numbers generated by the computer model that cannot be used as a yardstick for operations in the real world. The Project Operating Manuals should recognize deliveries for CUP water user demands as well as the environmental performance measures under the state's authority.

I. COMMENTS ON GUIDANCE MEMORANDUM #1

- A planning strategy that anticipates limiting planning to refinement of projects described in the Restudy (The Yellow Book) wherever possible seems inherently flawed since updated hydrologic model runs are reported to show that the components described in the Restudy no longer produce the outputs necessary for the restoration provided for in the Restudy.
- There is considerable overlap in the policy elements of Guidance memorandums #1 and #2. Consequently on some issues, more detailed or complementary comments are made under Memorandum #2.
- There is no reference to independent peer review of PIRs. A hallmark of the CERP effort has been reliance on sound science. In accord with that commitment, every PIR must receive independent technical review by non-agency experts as in the case of Indian River Lagoon South.
- Section 1.4 or elsewhere should further detail the requirements of WRDA including the reference to section 10.3.1 of the Yellow Book and its specific description of the contents of a PIR (See Restudy pp. 10-19 and 10.20.)
- Section 1.7 Limits real estate values and credits to amounts actually paid. Choice of values for crediting purposes can and should be separated from the choice of market values in project formulation studies. Use of actual acquisition costs for plan formulation makes any claim to unbiased analysis and credible determination of cost-effectiveness indefensible. If this policy is applied to the evaluation process, plan cost-effectiveness can not be determined. Public resources should not be wasted on studies of off-site or site-economizing alternatives under such a biased plan formulation and evaluation process.
- Section 1.9.1 titled “Develop Base Conditions and Models...” Might better be titled “Develop Without Project Condition and Models.” While reference is made to future without project conditions in the text, it needs to be clear that the projection of the most likely environmental and economic conditions over the period of analysis is the base on which alternative plans are evaluated.
- Section 1.9.1 states “The extent of plan formulation necessary will be based on whether the project described in the Plan will meet its goals and objectives.” If a decision were made to design a project based on the analysis in the Yellow Book, no feasibility level plan formulation would have been done. This would make CERP different from other Civil Works Projects. How in such a situation would a project be deemed to be “cost-effective?” Are CERP projects not subject to the same level of analysis as other Civil Works projects? The criterion for plan formulation decision is not simply whether a project “meets its goals and objectives;” rather it is whether the plan is cost-effective. Optimal scale requires consideration of marginal outputs and costs not simply whether a

project's outputs meet some goal. The process described produces plans that are minimally acceptable rather than "optimal" -- however the term may be defined.

- Section 1.9.2 makes it clear that simple hydrologic performance measures will be extensively used. This is not what the Corps promised nor what the Congress expects in referencing Section 10.3.1 of the Restudy. In the absence of any ecological performance measures, it is particularly critical that the marginal cost of providing a given hydrologic service is not greater than providing that last increment of service through another CERP component.
- Section 1.9.3 makes next-added analyses for the selected alternative plan the first step in design and apparently follows the Alternative Formulation Briefing (AFB). Shouldn't the results of the next-added analyses be available to reviewers at the AFB?
- Section 1.9.3 requires a description of the project's contribution to the achievement of interim goals and interim targets. Since interim goals and targets are merely measures of cumulative project outputs shouldn't the requirement be to describe the project's contribution to achievement of interim goals and targets and to COMPARE to what was forecast when the interim goal or target was established?
- Section 1.10 contains a schematic that leaves out the next-added increment analyses requirement.

## II. COMMENTS ON GUIDANCE MEMORANDUM #2

- Section 2.1 quotes the programmatic regulations as requiring this Guidance Memorandum to "describe the process to be used to formulate and evaluate alternative plans and their associated monetary and non-monetary benefits and costs, determine cost-effectiveness and optimize the project's contributions towards achieving the goals and purposes of the plan, and the basis for justifying and selecting an alternative plan to be recommended for implementation...." These terms must be given operationally meaningful definitions for this memorandum to guide plan formulation of individual plan components

The guidance memorandum contains no definitions of either cost-effectiveness or "optimize." Optimization should be defined as equating marginal benefits to marginal costs where economic benefits are quantified or equating the marginal cost of the last increment of output from a plan to the marginal cost of providing that increment by other elements of the plan.

- Section 2.4 states that plan formulation is to be consistent with the Principles and Guidelines of the Water Resources Council as modified by Section 601(f)(2)(A) of WRDA 2000. This section of WRDA 2000 addresses the critical issues of justification and cost effectiveness. The Guidance memorandum provides no definition or criteria for

determining “justification” or, as noted above, cost effectiveness or even a definition of an “activity”.

- Section 2.5.1 states that performance measures “are quantifiable measures of how well a project meets defined hydrological or ecological targets.” In addition the guidance states, “Because CERP projects are selected and justified based on their system-wide benefits, project teams should use system-wide performance measures developed by RECOVER for evaluation.” Despite the emphasis on system wide performance measures, the plan formulation process is never presented as tradeoff between incremental additions to output and incremental costs and a comparison of those incremental costs with the least costly way of providing those increments of output by other projects within the CERP. Without these analyses, the planning process simply becomes target based planning with the best plan being the one that meets some fixed target in the least costly way among the individual project alternatives being considered. This is confirmed by the text in 2.5.6 which limits cost comparisons to the “the complete suite of alternative plans.” Because CERP is a system, the marginal cost of providing an output must be compared to marginal cost of providing that output by other projects in the system to establish optimality and cost-effectiveness. This critical element seems to be missing within the whole discussion of plan formulation and is why the concepts of optimality and cost-effectiveness must be defined.
- Section 2.5.4 directs the use of actual real estate acquisition costs in plan formulation, cost estimating “to take advantage of lower costs incurred through early purchases by the SFWMD and others.” To use historical land acquisition costs in plan formulation is contrary to the Principles and Guidelines (See: Standards section 1.7.1 National Economic Development Account. “(3) Adverse effects in the NED account are the **opportunity costs** [emphasis supplied] of resources used in implementing a plan.” and also 1.4.10 Prices.) It is also inconsistent with OMB Circular A 94 SUBJECT: Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs which states: “Costs should reflect the opportunity cost of any resources used, measured by the return to those resources in their most productive application elsewhere.”

Using historic costs rather than present opportunity costs distorts the comparison among alternatives. To the extent that historic acquisition costs are less than present opportunity costs of land used by an alternative, use of historic costs encourages waste of acquired lands and understatement of the value of any credits afforded the State for early acquisition. Use of historic land costs for crediting or cost estimating purposes is a policy decision, however, its application to plan formulation violates Federal planning policy as contained in the P&G and makes CERP planning different from other Civil Works project planning elsewhere in the nation.

- Section 2.6 apparently envisions a truncated planning process in cases where the CERP envisioned plan “continues to meet the purposes described in the Plan and provides the benefits expected in the Plan” only that “optimization of the component(s) described in the Plan....” is required. There are several problems with this approach:

It is our understanding that under the updated hydrological runs the CERP project components no longer produce the restoration results described in the Restudy. Thus “optimizing” those components does not appear to be a strategy that will achieve the goals and objectives of CERP as a system.

The first PIR (Indian River Lagoon-South) which further refined a CERP component, the C-44 reservoir, resulted in a Report of the Chief of Engineers recommending deauthorization of that project and authorization of a different reservoir with essential added features at a different site.

A plan may “may meet all the purposes described in the plan” and not be cost effective when compared to alternatives at other sites. Under the prescribed procedure such alternatives would never even be considered. See, for example, paragraph 3 of 2.7, “...formulation of alternative plans using other sites will not be required if the intended project purposes could be achieved cost-effectively on those lands.

Several Acceler8 projects as they are presently described differ substantially from what is contained in the Restudy. How can this truncated planning process result in crediting of those projects?

- Section 2.7.1 states “The projects will be formulated to optimize system-wide benefits and costs....” Another use of the optimization concept, what does it mean in this context? Section 2.7.11 refers to formulation of an alternative that maximizes the achievement of local and system-wide goals and objectives....” Are maximization and optimization supposed to be different ways of saying the same thing? What has happened to the concept of net benefits?
- Section 2.7.1.1 states that a metric for plan evaluation may be the amount of water stored for reservoir projects, flow volume between basins, and achievement of appropriate salinity envelopes in estuaries, etc. How can these possibly be performance measures without any reference to ecological or biological effects?
- Section 2.7.1.2 the last sentence states “Only cost-effective alternative plans that demonstrate variable benefits should be retained for further analysis.” What is the meaning of this sentence?
- Section 2.7.1.3 states, “The project team must ensure that the selected alternative not only successfully meets the performance measures, but also satisfies the intended CERP objectives identified for this project.” How are these concepts of “meeting” and “satisfying” to be related to the concepts of optimization and cost-effectiveness?
- Section 2.7.2 provides important guidance regarding next-added increment analysis that will provide the information necessary for a project to compete in the Federal budgetary process for construction funding. When doing next added analysis for the Acceler8 projects, it is reasonable to treat all the projects as being implemented early in the

implementation period and to treat each of the projects as the last added increment to the others. Since the Accelerate projects apparently differ from those presented in the Restudy, special care must be taken to specify the system-wide outputs of the projects as they are to be actually implemented and operated as opposed to the description of their impacts as presented in the Restudy.

- Nothing is provided in this memorandum regarding the necessity to provide information necessary for Secretary of the Army's finding of project justification as required by section 601(f)(2)(A) of WRDA 2000. This memorandum should provide standards or criteria for making that finding and also make it clear that the finding should be based on a comparison of the last increment of benefits and costs provided by a project rather than the total benefits and costs produced by a project or project component.

### III. COMMENTS ON GUIDANCE MEMORANDUM #3

- This Guidance Memorandum illustrates the lack of balanced purposes by providing greater protection to elimination or transfer of sources meeting environmental needs than the protection offered for sources meeting other water-related needs of the region. WRDA 2000 provides the same level of protection for all uses as of December 2000 and this parity should be reflected in the Guidance Memorandum.
- As an example of the disparity in application of the Savings Clause, the Guidance Memorandum would not allow reduction of an environmental source of supply made available by a non-CERP condition but would allow reduction of a similar economic source of supply.
- Because Operating Manuals are made part of the CERP Plan and implementation, any change in operations reflected in Operation Manual revisions, whether as a result of new CERP construction or not, should be covered by the elimination and transfer protection.
- The paragraph on groundwater impacts (page 3-23, lines 40-45) should be deleted. It demonstrates a lack of understanding of the free interaction between surface and ground water in southeast Florida and how that interaction drives the design and operation of the C and SF Project. It is not clear what the author was trying to convey but it is subject to misinterpretation, adds nothing that can be considered 'guidance', and has no place in this memo.

### IV. COMMENTS ON GUIDANCE MEMORANDUM #4

- The intent of this document is to provide the Project development teams (PDT) with technical and policy direction in producing a Project Implementation Reports. The existing technical evaluation and presentation in GM 4 is fairly clear, however, it is built on a completely invalid premise. The assumption that water quantities derived from computer models simulating one set of meteorological conditions can be applied to actual measured quantities in a completely different meteorological situation is invalid. The only technically defensible approach would be to use the performance measure process to

develop a set of operating guidelines for the selected plan. These would not necessarily be the same rules used in the model, but a real-world set of rules developed through collaboration between the modeling team and the operations staff. The operating plan would then be the bridge between model world and the real world. The PIR would include guidance on the range of allowable water supply allocations as well as the environmental performance that would be expected. Whether the results match the model predictions can only be determined through the Monitoring and Assessment Plan, not by trying to figure out if the actual water quantities match the predicted water quantities. It is not appropriate to compare water quantities estimated by a computer model (with multiple layers of imbedded uncertainties and assumptions) under one set of circumstances with actual measured quantities under different conditions.

- The interrelationship among all the Guidance Memorandum is inferred from the consolidated document. A thorough review should be undertaken to insure consistency of cross references and definitions.
- Water made available from a CERP project should be defined as that water expected to be produced by the project and not just the water that is redistributed. The State can reserve the redistributed water at its discretion but should not be required to do so by Federal direction.
- The document indicates that the water made available for the natural system as quantified through the modified next added increment is the water identified to be reserved by the state (page 4-50 line 38). The use of this process provides for the prospective reservation of water from non-CERP projects with approved operating plans but not actually constructed and operating, which is inconsistent with setting a reservation for water made available by the CERP project, and impinges on the state's rights to set a reservation.
- It is not clear if Non-CERP projects are the Non-CERP conditions provided on page 3-3. CERP projects should be defined broadly as any project or operational change that is constructed or implemented to meet the goals and objectives of CERP.
- Attachment 4D is only a restatement of the President and Governor Agreement and has no place in the Guidance memorandum and should be removed. The Federal partner should be included in any process where quantity, timing and distribution of water are being reserved or required as base conditions for CERP. The operations of the C&SF system controlled by the Federal Government have larger impacts on future water availability than consumptive use permitting by the State.
- The process described on page 4-50 lines 38 to 42 for implementing a ratio for water allocation is not clear. Additional direction and explanation will be needed to assist the PDT in implementing this section. The concept is not necessary since the quantity, timing and distribution of water is based on performance measures and should not be artificially modified by a ratio based on a plan that may have no relevance to the project after earlier projects and operational changes have substantially modified the original plan.

- The definitions of the next-added increment or (NAI) are not consistent throughout the memorandums. If this concept of "next-added increment" on page 2-12 for project justification is a standard Corps planning tool, then other terms should be used to define the other concepts described on page 4-4 and 4-5 to avoid confusion
- The process described on page 4-50 to quantify the volume of water needed does not result in a useable method to reserve water from consumptive use as required by the State. The Plan selection process is driven by the review of alternative designs based on performance measures provided by the computer model. The economic uses can be increased as long as they do not violate the performance measures used in the model. The SFWMM does not produce reliable quantification of water amounts that can be used outside the model, but it does provide a tool to develop a real-world operating plan to produce the benefits expected from the project. The end result of this process is a set of operating rules that constrain project operations to ensure that the environmental purposes of the project are not compromised and that the future allocations for consumptive uses can be made.

V. COMMENTS ON GUIDANCE MEMORANDUM #5

- The discussion in this memorandum should be expanded to make it clear that the Project Operating Manual will be the document that confirms **how** the objectives of the plan are expected to be met. Since the computer models produce water quantity numbers that can only reliably be compared to other model-generated numbers, the planning process requires an operating plan to bridge the divide between what the model did to meet the project objectives and what the operations staff will do once the project is built. Any specific water quantity numbers that may be included in a reservation will derive their credibility from actual operations in the field not from computer simulations. The discussion on page 5-5 should be reviewed with this in mind.
- The memo should clarify that the operational flexibility described in section 5.4.3, page 5-7, will be evaluated in the PIR and will be included in the operating plan only if the PIR demonstrates that it shows sufficient benefits. The WSE schedule is cited as an example, which is appropriate since the flexibility shown in the operating plan for that schedule was described and evaluated in the NEPA process that led to its adoption.

VI. COMMENTS ON GUIDANCE MEMORANDUM #6

- The description of the proposed adaptive management process in GM 6 is logical and makes sense. However, it is written for full restoration, not for the restoration benefits expected to be realized through implementation of CERP. Some sections indicate that CERP performance may differ from full restoration while most sections don't distinguish between the two. The difference should be acknowledged in the document and the "right" restoration referenced correctly where appropriate.

- There are (at least) two issues that will ultimately need to be addressed in the adaptive management process that are not mentioned in the document. One is how to address shifting targets that result from new information that leads to a focus on different ecosystem features (new targets) that were either not considered or thought to be less important during the formulation of CERP. A second is how to address performance measures or targets that conflict with each other. Since a resolution of these issues would include formulation of new policy, it's not recommended to include a solution(s) in the GM, however some acknowledgement and discussion of the issues should be incorporated.
- Some sections of GM 6 imply that when the Plan was approved, a certain minimum level of performance in all areas was approved rather than being approved "as a framework for modification and ...". The recently updated version of the South Florida Water Management Model required different operations and sometimes modified project features in order to achieve a performance similar to the Yellow Book. The performance of the updated model resulting from use of the same features and operational assumptions as the Yellow Book was not considered to be acceptable. This seems to be a contradiction of the Programmatic Regulations (385.31(a)) which states "endorsement of the Plan as a restoration framework is not intended to be an artificial constraint ...".
- Section 6.7 on dispute resolution goes beyond the scope of GM 6 and should be deleted.

## COMMENTS ON THE PRE-CERP BASELINE

### BMP Replacement Water (Table 1)

- The assumption concerning BMP Replacement is not appropriate. The concept of BMP replacement water is an outgrowth of state law (the Everglades Forever Act). It basically states that if the implementation of on-farm BMPs in the EAA cause a reduction of flow into the Everglades Protection Area the state would 'replace' the lost flow through diversions of water from Lake Okeechobee to the Everglades Protection Area. The formula in use in 2000 was based on a misrepresentation of the rainfall/runoff relationship in the EAA. Data collected since BMPs have been in place clearly show that there has been no reduction in flow from the EAA to the EPA. The Pre-CERP Baseline acknowledges this by indicating that the model assumes no reduction in flow due to the BMPs. To acknowledge the absence of a flow reduction but keep a presumed 'replacement' quantity in excess of 100,000 acre-feet per year introduces a serious error in the model and perpetuates in all future Base case modeling an inappropriate 'allocation' of water from the Lake to the EPA that does not exist. This is another example of a federal pre-emption of the state's primacy in water allocation and must be corrected.

#### Utility Water Use (Section 7.2)

- The model assumes that all wellfield pumpage is capped at the amount pumped by water utilities in 2000. This violates the federal commitment to honor the states authority to allocate water supply using the state process that is repeated in several places in WRDA 2000 and in the Programmatic Regulations. It has the effect for the purpose of future analyses of assuming the revocation of the permits of virtually every utility. Once a utility obtains a permit it is makes financial commitments through investment in infrastructure and operating expense to allow it to deliver that amount of water as demand warrants. It is the SFWMD's responsibility to administer that process under state law. The Corps has no basis to assume anything other than the amount of water that has been legally allocated for use by the state through the SFWMD at the time WRDA was adopted.

#### COMMENTS ON THE MASTER IMPLEMENTATION SEQUENCING PLAN

- Because the most recent version of SFWMM is not being used, the MISP is using the results of the 1999 benefit analyses. Consequently it cannot describe the cost effective sequence of projects producing restoration and other benefits at the earliest possible date as promised by the Corps in February of 2004.
- The 1999 sequencing of projects is being used to establish the interim goals and targets. Therefore, there will be no connection between the project sequencing in the MISP and the forthcoming interim goals and targets.
- RECOVER teams are working to define interim goals by January 15, 2005 for a sequencing of projects that is no longer relevant and for a plan that no longer ultimately produces a satisfactory restoration result.
- A Savings Clause evaluation needs to be performed prior to finalizing the MISP to ensure that the proposed sequence does not violate the WRDA savings clause. The evaluation must be performed for each project individually, including the separate Acceler8 components.