

ANNEX C
ANALYSIS REQUIRED BY FEDERAL AND STATE LAW

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C LEGISLATIVE AND STATUTORY REQUIREMENTS

C.1 SUMMARY OF PROJECT-SPECIFIC ASSURANCES AND SAVINGS CLAUSE REQUIREMENTS

C.1.1 Background

As a result of laws and regulations passed by the federal government and the state of Florida, Comprehensive Everglades Restoration Plan (CERP) Project Implementation Reports are required to provide that certain assurances are adequately addressed by the project being recommended for approval and implementation. The following sections summarize the federal project-specific assurance and Savings Clause requirements and the evaluations performed to address those requirements.

C.1.2 Water Resources Development Act

Congress enacted the Water Resources Development Act of 2000, Title VI, Comprehensive Everglades Restoration (WRDA 2000) approving the CERP "*as a framework for modifications and operational changes to the Central and Southern Florida (C&SF) Project that are needed to restore, preserve, and protect the South Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection.*" Section 601(h) of WRDA 2000, entitled "Assurance of Project Benefits" establishes programmatic and project-specific assurances to be addressed as part of CERP implementation.

Section 601(h)(1) of WRDA 2000 provides:

"IN GENERAL - The overarching objective of the Plan is 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 protection. The Plan shall be implemented to ensure the protection of water quality in, the reduction of the loss of fresh water from, the improvement of the environment of the South Florida Ecosystem and to achieve and maintain the benefits to the natural system and human environment described in the Plan, and required pursuant to this section, for as long as the project is authorized."

This report addresses project-specific assurances and WRDA 2000 Savings Clause requirements.

C.1.2.1 Project-Specific Assurances

Section 601(h)(4)(A) of WRDA 2000, entitled “*Project-Specific Assurances*”, contains the following requirements for project implementation reports:

(A) PROJECT IMPLEMENTATION REPORTS. –

(i) IN GENERAL. The Secretary (of the Army) and the non-federal sponsor shall develop project implementation reports in accordance with Section 10.3.1 of the Plan.

(ii) COORDINATION. In developing a project implementation report, the Secretary and the non-federal sponsor shall coordinate with appropriate federal, state, tribal, and local governments.

(iii) REQUIREMENTS. A project implementation report shall –

(I) be consistent with the Plan and the programmatic regulations promulgated under paragraph (3);

(II) describe how each of the requirements stated in paragraph (3)(B)[sic] is satisfied;

(III) comply with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.);

(IV) identify the appropriate quantity, timing and distribution of water dedicated and managed for the natural system;

(V) identify the amount of water to be reserved or allocated for the natural system necessary to implement under state law, subclauses (IV) and (VI);

(VI) comply with applicable water quality standards and applicable water quality permitting requirements under subsection (b)(2)(A)(ii);

(VII) be based on the best available science; and

(VIII) include an analysis concerning the cost-effectiveness and engineering feasibility of the project.

Section II of this report contains a description of the basic principles and methodologies for identifying water for the natural system. Section III contains a description of the basic principles and methodologies for identifying water made available by the project for other water-related needs of the region. These basic principles and methodologies used to identify water were based on the procedures and guidance contained in draft Programmatic Regulations Guidance Memorandum 4 (“*Identifying Water Needed to Achieve the Benefits of the Plan*”) available at the time this PIR was being developed. Section VI of this report summarizes the results of these analyses, including identifying the amount of water made available by the project for the natural system to be reserved or allocated by the state of Florida and the amount of water made available for other water-related needs.

C.1.2.2 Savings Clause

Section 601(h)(5) of WRDA 2000, entitled “*Savings Clause*,” requires an analysis of each project’s effects on legal sources of water that were in existence on the date of enactment of WRDA 2000 (i.e., December 2000) and effects on levels of service of flood protection in existence on the date of enactment of WRDA 2000. Section 601(h)(5) of WRDA 2000 states:

(A) NO ELIMINATION OR TRANSFER. Until a new source of water supply of comparable quantity and quality as that available on the date of enactment of this Act is available to replace the water to be lost as a result of implementation of the Plan, the Secretary and the non-federal sponsor shall not eliminate or transfer existing legal sources of water, including those for:

(i) an agricultural or urban water supply;

(ii) allocation or entitlement to the Seminole Indian Tribe of Florida under Section 7 of the Seminole Indian Land Claims Settlement Act of 1987 (25 U.S.C. 1772e);

(iii) the Miccosukee Tribe of Indians of Florida;

(iv) water supply for Everglades National Park; or

(v) water supply for fish and wildlife.

(B) MAINTENANCE OF FLOOD PROTECTION. Implementation of the Plan shall not reduce levels of service for flood protection that are:

(i) in existence on the date of enactment of this Act; and

(ii) in accordance with applicable law.

(C) NO EFFECT ON TRIBAL COMPACT. Nothing in this section amends, alters, prevents or otherwise abrogates rights of the Seminole Indian Tribe of Florida under the compact among the Seminole Tribe of Florida, the state, and the South Florida Water Management District, defining the scope and use of water rights of the Seminole Tribe of Florida, as codified in Section 7 of the Seminole Indian Land Claims Act of 1987 (25 U.S.C. 1772e).

Section 4 of this report contains a description of the basic principles and methodologies for identifying project effects on existing legal sources of water as of the date of enactment of WRDA 2000 on the user categories listed in Section 601(h)(5)(A) of WRDA 2000. The basic principles and methodologies used for this analysis were based on the procedures and guidance developed for draft Programmatic Regulations Guidance Memorandum 3 (“*Savings Clause Requirements*”) at the time this PIR was being developed. Section 6 of this report summarizes the results of these analyses.

Section 5 of this report contains a description of the basic principles and methodologies for identifying project effects on levels of service of flood

protection as required by WRDA 2000. The basic principles and methodologies used for this analysis were based on the procedures and guidance developed for the draft Programmatic Regulations Guidance Memorandum 3 (“*Savings Clause Requirements*”) at the time this PIR was developed.

C.1.3 Programmatic Regulations

C.1.3.1 Pre-CERP Baseline

33 CFR Part 385, Section 385.35(a) of the Programmatic Regulations provides that a pre-CERP baseline be developed to aid the U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD) when implementing the Savings Clause to determine if existing legal sources of water will be eliminated or transferred. The Programmatic Regulations also provide that each Project Implementation Report consider the operational conditions developed in the pre-CERP baseline to demonstrate that flood protection levels of service in existence on the date of WRDA 2000 enactment and in accordance with applicable law will not be reduced by project implementation.

Pre-CERP baseline water availability for agricultural and municipal supplies, allocations or entitlement to the Seminole Indian Tribe, the Miccosukee Indian Tribe, water supply for Everglades National Park, and water supply for fish and wildlife is to be identified by USACE and the SFWMD, in consultation with federal, state, tribal and local agencies. The pre-CERP baseline water availability is to be identified to evaluate whether elimination or transfer of existing legal sources for the above-listed categories will occur as a result of CERP project implementation. Each PIR is required to take into account the estimated total quantity of water necessary for the restoration of those areas of the natural system that are the focus of the project.

The final draft Pre-CERP Baseline document was issued by USACE and the SFWMD in April 2005. In accordance with the programmatic regulations, the final draft Pre-CERP Baseline document will be submitted to the Secretary of the Army for approval and concurrence by the Secretary of the Interior and the Florida Governor. As of the date of this draft PIR, final approval of and concurrence on the Pre-CERP Baseline have not yet occurred; nevertheless, for the Broward County Water Preserve Areas project, the baseline assumptions included in the April 2005 final draft Pre-CERP Baseline document were used to simulate conditions in existence as of the date of WRDA 2000 enactment (December 2000) in accordance with the Savings Clause.

C.1.3.2 Identification of Water for the Natural System

Section 385.35(b) of the Programmatic Regulations requires that each PIR identify the quantity, timing and distribution of water to be dedicated and managed for the natural system necessary to meet the restoration goals of the CERP (the Plan). This evaluation considers the availability of Pre-CERP Baseline water and previously reserved water, and whether improvements in water quality are necessary. The existing conditions model simulation does not include any previously reserved water, since there have been no water reservations yet completed within the geographic boundary of the SFWMD.

C.1.3.3 Identification of Water for Other Water-Related Needs

Section 385.35 of the Programmatic Regulations also requires that procedures be developed for identifying water generated by the Plan for use in the human environment and that the quantity, timing and distribution of water for other water-related needs be identified in PIRs.

C.1.3.4 Elimination or Transfer of Existing Legal Sources

Section 385.36 of the Programmatic Regulations requires that PIRs address whether existing legal sources of water are to be eliminated or transferred as a result of project implementation. If a project is expected to result in an elimination or transfer of an existing legal source of water, an implementation plan ensuring that a new source of comparable quantity and quality is available to replace the source that is being transferred as a result of the project be included in the PIR.

C.1.3.5 Flood Protection

Section 385.27 of the Programmatic Regulations requires that PIRs include an analysis of the project's impacts on flood protection levels of service that existed on the date of WRDA 2000 enactment in December 2000, and in accordance with applicable law. These conditions will be included in the Pre-CERP Baseline (see Section I.B.1). The final draft Pre-CERP Baseline document was issued by USACE and the SFWMD in April 2005. In accordance with the programmatic regulations, the final draft Pre-CERP Baseline document will be submitted to the Secretary of the Army for approval with concurrence by the Secretary of the Interior and Florida Governor. As of the date of this draft PIR, final approval of and concurrence on the Pre-CERP Baseline have not yet occurred; nevertheless, the baseline assumptions included in the April 2005 final draft Pre-CERP Baseline document were used to simulate conditions in existence as of the date of enactment of WRDA 2000 (December 2000) in accordance with the Savings Clause.

C.1.3.6 Operating Manual

Section 385.28(a)(6)(vi) of the Programmatic Regulations requires that the project operating manual be consistent with the reservation or allocation of water for the natural system as described in the PIR and reflect the operational criteria used in the identification of the appropriate quantity, timing and distribution of water dedicated and managed for the natural system. The Draft Project Operating Manual for this PIR was developed based on operations included in the hydrologic modeling used to formulate, evaluate and select the recommended plan. In the development of the Draft Project Operating Manual, the project delivery team worked with hydrologic modelers and water managers to develop operating criteria that reflected the intent of the operations simulated in the hydrologic model, which includes operations associated with the delivery of water for the natural system. The drought contingency plan included in the Draft Project Operating Manual for the Broward County Water Preserve Areas project will guide operations during drought conditions, and recognizes the water shortage plan administered by the SFWMD under state law. The Draft Project Operating Manual is included in Annex D of this PIR.

C.1.4 State of Florida Statutory Requirements

C.1.4.1 Review and Approval of Project Implementation Reports

Section 373.026, F.S., describes the powers and duties of the Florida Department of Environmental Protection (FDEP) with respect to CERP implementation in accordance with Chapter 373, Florida Statutes. Subsection (8)(b) of this statute addresses FDEP's role in reviewing and approving CERP projects:

373.026(8)(b) – “To ensure to the greatest extent possible that project components will go forward as planned, the department shall collaborate with the (South Florida Water Management) district in the restudy. Before any project component is submitted to Congress for authorization or receives an additional appropriation of state funds, the department must approve, or approve with amendments, each project component within 60 days following formal submittal of the project component to the department. Department approval shall be based upon a determination of the district’s compliance with s. 373.1501(5). Once a project component is approved, all requests for an additional appropriation of state funds needed to implement the project component shall be submitted to the department and such requests shall be included in the department’s annual request to the Governor.”

The project implementation report is to contain adequate documentation addressing the criteria contained in Section 373.1501 sufficient for FDEP approval. Section 373.470, Florida Statutes, requires that prior to executing a

Project Cooperation Agreement with USACE, a PIR that contains sufficient information to receive FDEP approval under Section 373.026(8)(b), Florida Statutes, must first be completed. The SFWMD must demonstrate, using information in the PIR, that criteria set forth in Section 373.1501(5), Florida Statutes, is complied with in order to receive approval of project component by FDEP.

C.1.4.1.1 Criteria for Approval (Section 373.1501[5], F.S.)

Section 373.1501(5), F.S., contains five criteria (a-e) to be addressed in CERP project documentation provided for FDEP review and approval:

373.1501 (5): In its role as local sponsor for the project, the district shall comply with its responsibilities under this chapter and implement project components through appropriate provisions of this chapter. In the development of project components, the district shall:

(a) Analyze and evaluate all needs to be met in a comprehensive manner and consider all applicable water resource issues, including water supply, water quality, flood protection, threatened and endangered species, and other natural system and habitat needs;

(b) Determine with reasonable certainty that all project components are feasible, based upon standard engineering practices and technologies, and are the most efficient and cost-effective of feasible alternatives or combinations of alternatives, consistent with restudy purposes, implementation of project components, and operation of the project.

(c) Determine with reasonable certainty that all project components are consistent with applicable law and regulations, and can be permitted and operated as proposed. For purposes of such determination:

1. The district shall convene a pre-application conference with all state and federal agencies with applicable regulatory jurisdiction;

2. State agencies with applicable regulatory jurisdiction shall participate in the pre-application conference and provide information necessary for the district's determination; and

3. The district shall request that federal agencies with applicable regulatory jurisdiction participate in the pre-application conference and provide information necessary for the district's determination.

(d) Consistent with this chapter, the purposes of the restudy provided in the Water Resources Development Act of 1996 and other applicable federal law provide reasonable assurances that the quantity of water available to existing legal users shall not be diminished by implementation of project components so as to adversely impact existing legal users, that existing levels of service of flood protection will not be diminished outside the geographic area of the project component, and that water management

practices will continue to adapt to meet the needs of the restored natural environment.

(e) Ensure that implementation of project components is coordinated with existing utilities and public infrastructure, and that impacts to and relocation of existing utility or public infrastructure are minimized.

Annex C (Legislative and Statutory Requirements) of this draft PIR contains the report prepared by the SFWMD addressing the above-listed criteria associated with implementation of the recommended plan.

C.1.4.2 Water Reservations

Part II of Chapter 373, F. S., contains the laws of the state of Florida governing permitting of consumptive uses of water in Florida. Section 373.223(4), F.S., provides that:

“(4) The Governing Board or the department, by regulation, may reserve from use by permit applicants, water in such locations and quantities, and for such seasons of the year, as in its judgment may be required for the protection of fish and wildlife or the public health and safety. Such reservations shall be subject to periodic review and revision in the light of changed conditions. However, all presently existing legal uses of water shall be protected so long as such use is not contrary to the public interest.”

This statute provides the legal framework for water that may be reserved from use for the protection of fish and wildlife or for the protection of public health and safety. When water is reserved under this statute, it is not available to be allocated for use under a consumptive use permit and is protected for the natural system. The statute also requires existing legal uses of water be protected so long as such use is not contrary to the public interest. Additionally, the statute also directs that reservations shall be reviewed periodically to assess changed conditions and revised as necessary. Reservation of water is by administrative rule. The SFWMD anticipates that both CERP- and non-CERP-related reservations will be adopted for Everglades protection.

C.1.5 State and Federal Assurances

The state of Florida will protect the water for the natural system in South Florida by taking the following actions: 1) The state will use its water reservation authority to reserve the beneficial water made available for the natural system from each project as required by WRDA 2000; and 2) the state will protect the existing water that the PIR identifies is available and beneficial to the natural system, using resource protection authority under Florida law.

The following language sets forth these commitments:

“The overarching objective of the Plan is 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 protection. The federal government and the non-federal sponsor are committed to the protection of the appropriate quantity, quality, timing and distribution of water to ensure the restoration, preservation and protection of the natural system as defined in WRDA 2000, for so long as the project remains authorized. This quantity, quality, timing and distribution of water shall meet applicable water quality standards and be consistent with CERP’s natural system restoration goals and purposes, as the Plan is defined in the programmatic regulations. The non-federal sponsor will protect the water for the natural system by taking the following actions to achieve the Plan’s overarching natural system objectives:

1. Ensure, through appropriate and legally enforceable means under federal law, that the quantity, quality, timing, and distribution of existing water that the federal government and the non-federal sponsor have determined in this Project Implementation Report is available and beneficial to the natural system, will be available at the time the Project Cooperation Agreement for the project is executed and will remain available for so long as the Project remains authorized.

2a. Prior to the execution of the Project Cooperation Agreement, reserve for the natural system the beneficial water that the federal government and the non-federal sponsor have determined in this Project Implementation Report will be made available by the project.

2b. After the Project Cooperation Agreement is signed and the project becomes operational, make such revisions under Florida law to this reservation of water that the non-federal sponsor determines, as a result of changed circumstances or new information, is beneficial for the natural system.

3. For so long as the Project remains authorized, notify and consult with the Secretary of the Army should any revision in the reservation of water or other legally enforceable means of protecting water be proposed by the non-federal sponsor, so that the federal government can assure itself that the changed reservation or legally enforceable means of protecting water conform with the non-federal sponsor’s commitments under paragraphs 1 and 2. Any change to a reservation of water made available by the project shall require an amendment to the Project Cooperation Agreement.”

C.1.6 Identifying System-Wide and Project-Level Effects

In general terms, CERP projects may affect water availability for the natural system and other water-related needs in two ways:

1. System-wide effects – Hydrologic effects that occur outside the watershed or basin in which the project is located through storage, management, treatment and delivery of water via the C&SF Project.
2. Project-level effects – Hydrologic effects that occur within the watershed or basin in which the project is located (e.g., natural areas, wetlands, salinity control) or within the features of the project components (e.g., reservoirs, stormwater treatment areas, and well-field recharge distribution canals).

The spatial extent of system-wide and project-level effects must be identified to quantify water made available by the project and to perform Savings Clause evaluations. To restore some of the historic regional water storage function that has been lost through the implementation of drainage and flood control infrastructure and development in the region, one of CERP's underlying principles is to capture and store excess flows and discharges to tide. Since the projects that comprise CERP are designed to work together to achieve the system-wide (i.e., pertaining to the C&SF Project or the South Florida ecosystem as a whole) goals and purposes of CERP, in most cases, the quantification of water should be conducted on a system-wide basis, in addition to a project-level basis. It is important that the identification of project effects be investigated for the entire system and not just for the project itself, or the immediate area where it is located. Additionally, for some projects, such as seepage management projects, the amount of water made available by the project may not be readily determined unless a system-wide analysis is performed.

C.1.6.1 System-Wide Effects

For those projects expected to result in system-wide effects on the natural system and other water-related needs in South Florida, a regional-scale hydrologic simulation model is utilized to evaluate those effects. Due to its location, small storage volume, and negligible influence on the regional water budget, the Winsberg Farm Wetlands Restoration project is not expected to have any system-wide impact. The average daily flow to the Winsberg Farm project on an annual basis is estimated to be 3-5 MGD per day or 3,360-5,600 acre-feet per year. A significant portion (50-75 percent) of this amount of water would be lost due to evapotranspiration (ET). The remainder will effectively contribute to maintaining Lake Worth Drainage District (LWDD) groundwater and canal elevations and thereby reduce consumptive use of an equal amount of water that is obtained from the natural system. The overall effect of such an

amount of water does not justify the time and cost to do regional modeling. There would be an insignificant effect on the hydroperiod depth and duration of WCA-1, and if any that would be within model sensitivity.

2x2 Model (SFWMM) Regional Modeling:

No modeling to study the effects of the Tentatively Selected Plan (TSP) on maintaining flood protection or to evaluate system-wide effects has been performed or is anticipated to be necessary. Under normal operating conditions, wetland cells will only receive as much effluent from the SRWRF as can be removed through the combined effects of ET and percolation (seepage). An auxiliary, 4 MGD pump station will be constructed to route excess water resulting from storm events that cause high pool elevation to the county's deep injection wells. The average daily flow from the TSP on an annual basis is estimated to be 3-5 MGD per day or 4.6-7.7 cfs. About 50 to 75 percent of this water would be lost due to ET. The remainder will contribute to an off-site loss due to percolation, which will be negligible when compared to design flow rates of the adjacent LWDD L-29 and L-30 Conveyances, which are roughly 100 cfs and 400-500 cfs, respectively. This small amount of off-site seepage by the TSP would have no adverse or significant impacts to the existing level of service for flood protection and does not justify flood protection modeling. The TSP project has already received permits, and construction has been completed for Phase 1.

C.1.6.2 Project-Level Effects

The selected plan for the Winsberg Farm Wetlands Restoration project involves creation of 114 acres of wetlands using treated reclaimed wastewater from Palm Beach County's Southern Regional Wastewater Reuse Facility. The reclaimed wastewater to be used to hydrate the wetland is now being disposed of by deep-well injection and currently is not part of the natural system. This will increase the spatial extent of natural areas providing fish and wildlife habitat in the study area. The quantity of water necessary to protect fish and wildlife in the wetland to be reserved or allocated by the state of Florida is identified in Section C.2.4

C.2 PRINCIPLES AND METHODS FOR IDENTIFYING WATER FOR THE NATURAL SYSTEM

C.2.1 Concept of Beneficial Water for the Natural System

Identification of water for the natural system is based on the concept of “beneficial water.” Beneficial water for the natural system is the water required for the protection of fish and wildlife within natural systems, including water that contributes to meeting hydrologic, water quality, and ecologic targets for restoration of natural systems. Not all water in natural areas is beneficial for the protection of fish and wildlife; therefore, the hydrologic, water quality, and ecologic targets for the natural system will be utilized to identify water that is beneficial in contrast to water which may be harmful or otherwise not contribute to natural system targets.

C.2.1.1 Beneficial Water Made Available by the Project

The identification of water for the natural system involves identifying: a) the total amount of water in the natural system; b) existing beneficial water in the natural system at the time of PIR development that is available and beneficial; and c) additional beneficial water, if any, made available by the project being evaluated.

Existing water is composed of water in the C&SF Project system currently available and beneficial and water currently available for other water-related needs. For modeling and evaluation purposes, the “Existing Conditions PIR Baseline” (ExPIR) represents this condition. For this project, the ExPIR Baseline assumes 2000 land-use and 2000 permitted-water supply demands.

Water made available by the project includes beneficial water for the natural system and water for other water-related needs. For purposes of quantifying water made available for the natural system, this quantification includes any changes the project makes in the quantity, timing or distribution of water from the ExPIR Baseline that is beneficial. The state will reserve this beneficial water that is made available for the protection of fish and wildlife pursuant to Section 601(h)(4)(A)(iii)(V) of WRDA 2000 and will use its allocation authority to protect any remaining water made available by the project for the natural system. The identification of the quantity of water made available by a project that is beneficial for the natural system and the identification of the quantity of water made available by a project for other water-related needs follows similar procedures and is based on the same baseline conditions.

C.2.2 Quantity, Timing and Distribution of Water and Water Quality

Viewed from a programmatic perspective, identification of water for the CERP-associated natural system involves an analysis of four different aspects of ecological responses to hydrologic changes: 1) responses to changes in water quantity received by the natural system; 2) responses to the timing of those deliveries; 3) responses to the distribution of water delivered to the natural system; and 4) responses to the quality of the water received by the natural system. In a project-specific sense, however, the relative importance of each of these aspects (quantity, timing, distribution and quality) will vary from project to project depending upon the specific objectives established for the project.

For example, some CERP projects may focus formulation efforts on simply changing the timing (seasonality) or distribution (inflow and outflow points, and internal movement) of water delivered to the natural system. Other projects may focus primarily on increasing or decreasing the amount of water delivered to the natural system, while still other projects may focus on improving the quality of water delivered to the natural system to maintain desirable ecological community structure. All of these aspects (depending upon their applicability to specific projects) are addressed during plan formulation through performance measures and evaluation criteria used to evaluate alternative plans.

To identify the quantity, timing and distribution of water for the natural system, a probabilistic approach was selected. This approach utilizes volume probability curves to depict the distribution of volumes of water that provide natural system benefits as a result of project features through the entire range of climatic conditions contained within the 36-year period of hydrological record used in model simulations. These volumes of water may include beneficial water that currently exist without project features and the beneficial water made available from project features through the entire range of historic climatic conditions.

Water quality is also taken into account during plan formulation and evaluation as either a project constraint (i.e., projects cannot cause or contribute to violations of water quality standards) or as an objective. According to CERP Guidance Memorandum 23.01, "*Water Quality Considerations for the Project Implementation Report Phase*," the Winsberg Farm Wetlands Restoration Project is not specifically listed. Therefore, it will be assumed to be a Category C. This means components will not have performance measures for water-quality improvement and are not required to have evaluation criteria for comparing water-quality improvement of alternatives. However, adversely impacting water quality shall be treated as a constraint in the plan formulation and evaluation process for all project components.

C.2.3 Volume Probability Curves

For purposes of identifying the increase in beneficial water for the natural system made available by the project compared to the existing beneficial water, volume probability curves were produced depicting the range of quantities of water delivered to natural system areas and coastal estuaries under all climatic conditions through the period of record used to perform project evaluations. A 36-year period of hydrologic record (1965 through 2000) was used for simulation modeling for this project. This period includes sufficient climatological variability (including natural fluctuations of water) to be representative of long term hydrologic conditions in the region. However, because the Winsberg Farm Wetlands restoration Project uses very small volumes of treated reclaimed wastewater, and that wastewater is not part of the current Pre-CERP Baseline as it is disposed of through deep well injection, and there is no discharge to surface water from the wetlands, it was determined that no modeling was needed to determine that the project has no measurable impact on b) existing beneficial water in the natural system at the time in PIR development that is available and beneficial, and c) additional beneficial water, if any, made available by the project being evaluated.

C.2.4 Identification of Water to be Reserved or allocated

Water made available by the Winsberg Farm Wetlands Restoration project includes both beneficial water for the natural system and water for other water related needs. For purposes of quantifying water made available for the natural system, this quantification includes any changes that the project will make in the quantity, timing, or distribution of beneficial water compared to the quantity, timing, and distribution of beneficial water included in the Existing Conditions PIR Baseline. The Winsberg Farm Wetlands Restoration project is completely separate hydrologically from and therefore does not make any additional beneficial water available for the natural system in Loxahatchee National Wildlife Refuge (WCA-1), WCA-2A, WCA-2B, WCA-3A, WCA-3B, Everglades National Park, and the WCA 3A/3B Seepage Management Area.

The identification of existing water and water made available by the project for the natural system is based on the portion of water that is beneficial for the natural system. For the Winsberg Farm Wetlands Restoration Project, the water made available by the project that is beneficial for the natural system includes the quantity of additional water delivered to the natural system that meets the ecological restoration objectives of the project. Beneficial water made available as a result of the project features is determined by comparing the Existing Conditions with the Winsberg Farm Wetlands Restoration Project area. The amount of water diverted from the Palm Beach County Southern Regional Reuse Facility needed to maintain a minimum of 1 foot of water over the entire 114

acre wetland is the amount of water that will have to be reserved for this project. It is estimated the project will need to reserve 5 MGD.

The non-Federal Sponsor will have to comply with the Water reservation requirement and it will be done in accordance with Florida Statute, and will be done prior to signing a PCA.

C.3 PRINCIPLES AND METHODS FOR IDENTIFYING WATER FOR OTHER WATER RELATED NEEDS OF THE REGION

C.3.1 Principles

WRDA 2000 and Section 373.470, Florida Statutes, require that CERP is to *"restore, preserve, and protect the South Florida ecosystem while providing for other water-related needs of the region, including water supply and flood protection."* Water for other water-related needs is identified as water that contributes to meeting targets for quantity, timing and distribution of water used for water supply or resource protection (i.e., control of saltwater intrusion into sources of water supply) and is evaluated using hydrologic performance measures established consistent with the goals and objectives of the project. The quantity, timing and distribution of water made available by a CERP project for other water-related needs is based on these water supply or resource protection performance measures identified on a system-wide basis and a project-level (i.e., basin-wide) basis, as appropriate for the project being evaluated.

C.3.2 Methods

The Winsberg Farm TSP is expected to have no adverse or significant impacts to any system outside its local aquifer system. The average daily flow to the TSP on an annual basis is estimated to be 3-5 MGD per day or 4.6-7.7 cfs. About 50-75 percent of this amount of water would be lost due to ET. The remainder will contribute to an offsite loss due to percolation, which will be negligible when compared to design flow rates of the adjacent LWDD L-29 and L-30 canals, which are roughly 100 cfs and 400-500 cfs respectively.

2x2 Model (SFWMM) Regional Modeling

No modeling to study the effects of the Winsberg Farm TSP on a regional scale has been performed or is anticipated to be necessary. The average daily flow from the TSP on an annual basis is estimated to be 3-5 MGD per day or 3360-5600 acre-feet per year. About 50-75 percent of this amount of water would be lost due to ET. The remainder will percolate into the groundwater table and LWDD's canal system. This could reduce consumptive use of water that is obtained from the natural system, but the overall effect of a potential 1100-1400 acre-feet per year of water does not justify any regional modeling because the

model is not sensitive enough to show an effect on the hydroperiod depths and durations of WCA-1 for this amount of water.

C.3.3 Quantification of Water for Other Water-Related Needs

The identification and quantification of water made available for other water-related needs should be based on water supply and resource protection metrics that are appropriate to meet the goals and objectives of the project. The quantity, timing and distribution of water for other water-related needs that help meet these metrics were evaluated.

Because the hydrological effects of the Winsberg Farm Wetlands Restoration Project is so small that it is difficult to measure, it was determined that the project will have no effect on other water-related needs.

C.4 PRINCIPLES AND METHODS FOR IDENTIFYING PROJECT EFFECTS ON EXISTING LEGAL SOURCES OF WATER

C.4.1 Principles

Section 601(h)(5) of WRDA 2000, entitled “Savings Clause,” requires an analysis of each project’s effects on legal sources of water in existence on the date of WRDA 2000 enactment (i.e., December 2000).

Sources of water for the following water-user categories that are eliminated or transferred as a result of a CERP project must be replaced with a new source of comparable quantity and water quality:

- Agricultural and urban water supply
- The Seminole Indian Tribe of Florida
- The Miccosukee Tribe of Indians of Florida
- Water supply for Everglades National Park
- Water supply for fish and wildlife

One of CERP's fundamental principles is that the Plan, as a whole, is expected to make more water available for the natural system and for other water-related needs in South Florida. This is accomplished by providing new sources of water (e.g., reservoirs, aquifer storage and recovery facilities, treated wastewater, etc.) to meet the multiple demands for sources of water in South Florida, including sources for the natural system. To achieve CERP goals, it is intended that some CERP projects will eliminate or transfer some or all of a particular source of water, depending on that project’s hydraulic connectivity to existing legal sources in the vicinity of the project site and the influence of the project on the regional water management system. However, not all CERP projects are expected to result in elimination or transfer of existing legal sources of water,

nor are the quantities of water sources that may be transferred proportionally distributed to each of the individual projects that comprise the CERP.

Another basic principal underlying the Savings Clause and Assurances evaluation is that if it is shown that a project will make more water available than that which is provided by the Pre-CERP Baseline condition, then those user categories affected by the project will receive a comparable quantity of water (compared to the Pre-CERP Baseline quantity) as a result of project implementation. However, although the initial evaluation may indicate that the total quantity of water available from all sources will be increased or not be reduced as a result of project implementation, it is still possible for the project to cause a transfer of an existing source of water to a new source, or a portion of an existing source to a new source. In fact, existing legal sources are anticipated to be transferred from one source to another as CERP projects are implemented. A source transfer necessitates a further consideration of the quality of the new water source and the timing of the transfer to the new source.

C.4.1.1 Pre-CERP Baseline

The Pre-CERP Baseline is a description of assumed hydrologic conditions on the date of WRDA 2000 enactment (December 11, 2000) developed to satisfy the requirements of CERP Programmatic Regulations as a tool in the implementation of the Savings Clause. The programmatic regulations define the Pre-CERP Baseline as *“the hydrologic conditions in the South Florida ecosystem on the date of enactment of WRDA 2000, as modeled by using a multi-year period of record based on assumptions such as land use, population, water demand, water quality, and assumed operations of the Central and Southern Florida Project.”*

The final draft Pre-CERP Baseline document was issued by USACE and the SFWMD in April 2005. In accordance with the programmatic regulations, the final draft Pre-CERP Baseline document will be submitted to the Secretary of the Army for approval with concurrence by the Secretary of the Interior and Florida Governor. As of the date of this draft PIR, final approval of and concurrence on the Pre-CERP Baseline have not yet occurred. However, because the Winsberg Farm Wetlands Restoration Project uses very small volumes of treated reclaimed wastewater, and that wastewater is not part of the current Pre-CERP Baseline as it is disposed of through deep-well injection, and there is no discharge to surface water from the wetlands, it was determined that no modeling was needed to determine that the project has no measurable impact on existing legal sources of water.

C.4.1.2 Water Quality Improvements

Water quality improvements, if any, necessary to maintain water quality comparable to that of the existing legal sources for those water supply categories affected by the transfer, should be included as project features of the selected plan. Typically, such effects are anticipated in plan formulation and features necessary to address water-quality improvements are included as appropriate in the array of plans evaluated by the project team. The Winsberg Farm Wetlands Restoration Project does not include features specifically formulated to improve water quality; however, a basic operational assumption for the project is that attenuation of source water in the reservoir cells will result in settling of water-borne pollutants and sequestration of pollutants in vegetation and sediments in the cells. Since the Winsberg Farm Wetlands Restoration Project has no discharge to surface waters, ground water monitoring wells have been installed to evaluate the impact of the wetland on the local aquifer.

C.4.1.3 Implementation Plan

If a CERP project will result in a transfer from an existing legal source to a new source in order to achieve project purposes, the project implementation plan should include specific actions to be taken (including appropriate sequencing of construction, operational testing and verification, and initiation of project operations and monitoring) to prevent diminishment of water quantity of made available to existing legal sources as a result of project implementation. The Winsberg Farm Wetlands Restoration Project has no impact to existing legal sources of water. Therefore, no implementation plan is required.

C.4.1.4 Winsberg Farm Wetlands Restoration Project Effects

The Winsberg Farm Wetlands Restoration Project will have no effect on existing legal sources of water.

C.5 PRINCIPLES AND METHODS FOR IDENTIFYING PROJECT EFFECTS ON EXISTING LEVELS OF SERVICE FOR FLOOD PROTECTION

C.5.1 Principles

In addition to an evaluation of a project's effects on legal sources of water, Section 601(h)(5) (Titled "*Savings Clause*") of WRDA 2000 also requires that implementation of the project not reduce levels of service for flood protection in existence on the date of enactment of WRDA 2000 (i.e., December 2000) and in accordance with applicable law. Similarly, Section 373.1501(5)(d), Florida Statutes, requires that CERP projects not diminish "*existing levels of service for flood protection*" outside the geographic area of a project component (i.e., the

footprint of the project's features). The distinction between these two legal requirements is the federal requirement that focuses on conditions in effect as of December 2000, whereas the state of Florida requirement focuses on existing conditions which are expected to change through time as a result of the construction and operation of CERP projects and implementation of other non-CERP activities in South Florida.

C.5.1.1 Project-Level and System-Wide Evaluations

Considering the hydrologic functions associated with the purposes of many CERP projects and the above-discussed legal constraints, project teams must first determine whether the project features and operations (e.g., storage and conveyance of water) are likely to affect ground and surface-water levels in the basin in which the project is located. While evaluations of project-related influences on the regional system are generally performed using the South Florida Water Management Model (SFWMM, a regional hydrologic model of southern Florida), project-level evaluations are typically performed using one or more sub-regional models capable of simulating seepage, groundwater movement, water routing, and potential changes in water levels at a finer scale of resolution than can be accomplished using a regional-scale hydrologic simulation model.

For those projects that are capable of influencing the regional water management system (C&SF Project and connected secondary and tertiary water management systems), a system-wide evaluation using a regional model may also be necessary, as the regional simulation may show potential project effects requiring additional investigation and may also be used to create the boundary condition for subsequent finer resolution modeling. Determinations regarding the potential effects of the project on the regional water management system should be based on the proposed elements and operations of the selected plan under consideration for the project (including inflow and discharge points) and a quantification of the likely extent and magnitude of net changes in hydrologic conditions (e.g., changes in elevation, stage or flow volume) in the vicinity of the project. Significant changes in local hydrologic conditions have the potential to affect regional water management practices and/or the regional water management system which, if observed, would necessitate a system-wide evaluation in the context of flood protection.

Through these project-level and regional evaluations, it must be determined whether a project:

- Is improving the level of service for flood protection (either incidentally or in accordance with the project's purposes and planning objectives) compared to the level of service provided by Year 2000 conditions and existing conditions (at the time the PIR was initiated; i.e., the "Existing Conditions PIR Baseline");
- Has no effect on the level of service for flood protection compared to that provided by Year 2000 conditions and existing conditions; or,
- Is expected to create an adverse effect on the level of service for flood protection compared to that provided by Year 2000 conditions and existing conditions.

If, through this evaluation, a project is predicted to create adverse effects on the level of service for flood protection which are determined to be significant (i.e., prolonged higher stages or elevations which are likely to cause damage to public or private property, or threaten public health and safety), the project must be modified to reduce those effects to acceptable levels before the project can be recommended for approval.

C.5.2 Water Made Available by the Project for the Natural System

C.5.2.1 System-Wide Effects

Because the Winsberg Farm Wetlands Restoration Project uses very small volumes of treated reclaimed wastewater, and that wastewater is not part of the current Pre-CERP Baseline as it is disposed of through deep-well injection, and there is no discharge to surface water from the wetlands, it was determined that no modeling was needed to determine that the project has no measurable system-wide effect.

C.5.3 Project Effects on Existing Legal Sources of Water

C.5.3.1 Sources for Urban and Agricultural Water Supply

Implementation of the Winsberg Farm Wetlands Restoration Project will have a small positive impact on the local urban and agricultural water supply. The water used to hydrate the wetlands is treated reclaimed wastewater that is currently disposed of by deep-well injection. There is no discharge to surface waters. When this water is diverted to the wetland, it will, through evaporation and seepage into the local aquifer, result in a small increase in the amount of water available for urban and agricultural users.

C.5.3.1.1 North Palm Beach and Lower East Coast Service Areas

In general, implementation of the Winsberg Farm Wetlands Restoration project is not expected to have any impact on water supply performance outside the local aquifer system.

C.5.3.2 Sources for the Seminole Tribe of Florida

No Seminole tribal lands are located near or will be affected by the project.

C.5.3.3 Sources for the Miccosukee Tribe of Indians of Florida

No Miccosukee tribal lands are located near or will be affected by the project.

C.5.3.4 Sources for Everglades National Park and Fish and Wildlife

The primary freshwater habitat for fish and wildlife in the South Florida ecosystem consists of the Water Conservation Areas and Everglades National Park. Collectively, these areas are defined under Florida law as the “Everglades Protection Area.” The Winsberg Farm Wetlands Restoration Project has no connection to and therefore no impact on the quantity of water available from existing legal sources for fish and wildlife and Everglades National Park.

C.5.4 Project Effects on Level of Service for Flood Protection

The Winsberg Farm TSP is expected to have no adverse or significant impacts to the existing level of service for flood protection as of December 2000. The average daily flow from the TSP on an annual basis is estimated to be 3-5 MGD per day or 4.6-7.7 cfs. About 50-75 percent of this amount of water would be lost due to ET. The remainder will contribute to an off-site loss due to percolation, which will be negligible when compared to design flow rates of the adjacent LWDD L-29 and L-30 canals, which are roughly 100 cfs and 400-500 cfs respectively.

C.5.4.1 Modeling

2x2 Model (SFWMM) Regional Modeling

No modeling to study the effects of the Winsberg Farm TSP on a regional scale has been performed or is anticipated to be necessary. The average daily flow from the TSP on an annual basis is estimated to be 3-5 MGD per day or 3360-5600 acre-feet per year. About 50-75 percent of this amount of water would be lost due to ET. The remainder will percolate into the groundwater table and LWDD’s canal system. This could reduce consumptive use of water that is obtained from the natural system, but the overall effect of a potential 1100-1400

acre-feet per year of water does not justify any regional modeling because the model is not sensitive enough to show an effect on the hydroperiod depths and durations of WCA-1 for this amount of water.

C.5.4.2 Maintenance of Flood Protection Modeling

No modeling to study the effects of the Winsberg Farm TSP on maintaining flood protection has been performed or is anticipated to be necessary. Under normal operating conditions, the wetland cells will only receive as much effluent from the SRWRF as can be removed through the combined effects of ET and percolation seepage. An auxiliary 4 MGD pump station will be constructed to route excess water due to rainfall storm events that cause high pool elevation to the county's deep injection wells. The average daily flow from the TSP on an annual basis is estimated to be 3-5 MGD per day or 4.6-7.7 cfs. About 50-75 percent of this amount of water would be lost due to ET. The remainder will contribute to an off-site loss due to percolation, which will be negligible when compared to design flow rates of the adjacent LWDD L-29 and L-30 canals, which are roughly 100 cfs and 400-500 cfs, respectively. This small amount of off-site seepage by the TSP would have no adverse or significant impacts to the existing level of service for flood protection and does not justify flood protection modeling. The TSP project has already received permits and construction is completed for Phase 1.