DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

15 SEP 2005

CECW-SAD (1105-2-10a)

SUBJECT: Comprehensive Everglades Restoration Plan, Picayune Strand Restoration Project, Collier County, Florida

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on ecosystem restoration improvements for the Picayune Strand area, located in southwestern Collier County, Florida. It is accompanied by the report of the district and division engineers. These reports are in partial response to several authorities. Section 309(l) of the Water Resources Development Act (WRDA) of 1992 and two resolutions of the Committee on Public Works and Transportation of the U.S. House of representatives, dated 24 September 1992, authorized studies of the Central and Southern Florida (C&SF) Project to determine the advisability of modifying the project in the interest of environmental quality, water supply, and other purposes. Section 528 of the WRDA of 1996 authorized development of a comprehensive plan for the restoration of the South Florida ecosystem, to include flood control, water supply, and other objectives served by the C&SF project.

2. The Picayune Strand Restoration Project, formerly known as Southern Golden Gate Estates Restoration, was identified in the Comprehensive Everglades Restoration Plan (CERP), authorized by Section 601 of the WRDA of 2000, as a framework for the purpose of restoring, preserving, and protecting the south Florida ecosystem while providing for other water-related resource needs of the region, including water supply and flood protection. The proposed project consisted of spreader channels, canal plugs, road removal, and pump stations to restore and enhance wetlands in Golden Gate Estates and adjacent public lands, improve estuarine water quality by reducing large freshwater inflows, and improve groundwater recharge. The WRDA of 2000 identified specific requirements for implementing components of the CERP, including development of a decision document known as a project implementation report (PIR). The requirements of a PIR are addressed in this report.

3. The PIR recommends a project that significantly contributes to two of the goals and objectives of the CERP - increasing the spatial extent of the wetland/upland mosaic and improving habitat and functional quality. Scientists have identified the large spatial extent of south Florida wetlands as one of the defining characteristics of the pre-drainage ecosystem.

Currently in south Florida roughly 50 percent of the pre-drainage wetland area and 90 percent of pinelands have been lost to development. Due to the advance land acquisition activities conducted by the State, the project can be implemented relatively quickly, significantly advancing the realization of project benefits in an area that has been severely degraded.

4. The district and division engineers recommend authorization of a plan of improvement for the Picayune Strand that will restore the wetland/upland mosaic communities in Picayune Strand and in adjacent nature preserves and wildlife management areas and improve the quality, quantity, timing and distribution of fresh water flows to the downstream estuaries of the Ten Thousand Islands Wildlife Refuge. The recommended plan provides for the following features:

a. **Spreader Channels and Pump Stations**. Spreader channels of various lengths would be constructed immediately downstream of the pump stations on the Miller Canal at 64th Avenue (4,500 feet), Faka Union Canal at 66th Avenue (7,000 feet), and Merritt Canal at 54th Avenue (1,400 feet). Spreader channels would redirect the water from flowing southward through these canals to flowing east and west. Water overtops the downstream bank of the spreader channel and then flows south over the land as sheet flow. The pump stations would ensure that the water would continue to flow southward and would prevent water from flowing back (north) into the developed area known as Northern Golden Gate Estates (NGGE). The capacities of the pump stations, 1,250 cubic feet per second (cfs) at the Miller Canal, 2,630 cfs at the Faka Union Canal, and 800 cfs at the Merritt Canal, were designed to be large enough so that the spreader channels and other construction features would not reduce the level of service of the existing drainage system of the NGGE.

b. **Degrade Roads and Fill Ditches**. Most of the roads in Picayune Strand are elevated 6 inches to a few feet higher than the surrounding ground and act like levees to create a barrier to sheet flow. Two hundred sixty of the 279 miles of roads would be graded to lower their elevations to the same level as the surrounding ground. Two hundred twenty-seven miles of these degraded roads would be abandoned and allowed to revegetate. Degrading the roads would greatly increase the sheet flow across the landscape. The roads and their associated drainage ditches and swales also redirect water back toward the canals. The non-asphalt materials from the degraded roads would be used to construct the canal plugs. The roads are habitat for invasive and exotic vegetation, particularly Brazilian pepper. The Florida Division of Forestry would use the remaining roads for ongoing land management actions. Some of the roads would be available to the public.

c. **Canal Plugs**. A total of 83 plugs would be placed south of the pump stations in the Miller, Faka Union, and Merritt Canals and along the entire length of the Prairie Canal. The plugs would prevent the canals from transporting water southward to the estuaries. Once the water is no longer being conveyed, the canals would no longer over drain the landscape and

surface aquifer, and the entire area near the plugs would become much wetter for several months of the rainy season.

d. **Flood Protection Levees**. A total of five levee systems would be constructed around developed areas to prevent these areas from being flooded as a result of the plan. The levees would be constructed with a width of 15 feet, height of 6 to 9 feet, and side slopes of 1V:3H. A ring levee 3.0 miles long would be built on the east side of the Faka Union Canal to protect the Port of Islands Waterfront RV Resort and other structures. A second levee 0.81 miles long would be built to protect the Port of the Islands development located southeast of the intersection of the Faka Union Canal and U.S, Route 41. A third levee 0.36 miles long would be built to protect the Port of the Islands development located southwest of the intersection of the Faka Union Canal and U.S, Route 41. The existing levee (6L) around the agricultural area in southern Belle Meade would be improved over a length of 12.2 miles. A ring levee 4.2 miles long would protect residential property in northeastern Belle Meade. Culverts would be placed in several of the levee systems to allow for interior drainage. A small pump station (100 cfs) would also be constructed for interior drainage at the northern Belle Meade levee.

e. **U.S. Highway 41 Culverts**. Nine additional culverts would be placed under U.S. 41 to allow the water sheet flowing across the landscape to continue flowing southward to the estuaries of the Ten Thousand Islands region.

f. **Monitoring.** Pre-construction baseline monitoring of hydrology, vegetation, fish and wildlife, endangered and threatened species, oyster reefs, fish communities, and water quality would continue. These resources would also be monitored during construction and for a period of up to 50 years after completion of construction for certain resources (i.e., hydrology and vegetation). Baseline monitoring, monitoring during construction, and monitoring during the operational testing and monitoring phase would occur for a period of five years and be funded as part of construction. Long-term operational monitoring would be funded under the Operation and Maintenance appropriation. Monitoring would determine whether the benefits of the project are being achieved and support the adaptive assessment process. The scope and cost of potential changes to the project has not been determined.

5. The recommended plan is a cost-effective means of achieving the intended project purposes and is located to the maximum extent practicable on lands already owned by the non-Federal sponsor. The scale of the recommended plan features was selected based on cost effectiveness and incremental cost analysis. The recommended plan maximizes net benefits and is the National Ecosystem Restoration plan. The recommended plan is justified by restoring natural hydrologic conditions and vegetative communities for fish and wildlife, including several endangered species, on about approximately 59,000 acres of the Picayune Strand and 140,000 acres of adjacent nature preserves and wildlife management areas and by improving the quality, quantity, timing, and distribution of runoff to about 48,000 acres of the estuaries comprising the Ten

Thousand Island National Wildlife Refuge. Hydrologic outputs are based on several parameters that measure the degree to which pre-development hydrologic conditions are restored. Biological outputs are based on several parameters that measure the degree to which natural vegetative conditions are restored. Estuarine outputs measure the improvement in habitat conditions for nekton (i.e.; fish, crab, and shrimp) and oyster. Based on the total first cost, the cost per acre improved by the project is about $1,400. Overall the project produces a net increase of over 50,000 average annual habitat units. The average annual cost per average annual habitat unit is about $500.

6. The first cost of the recommended plan, based on October 2004 price levels, is estimated to be $349,400,000. In accordance with the cost-sharing requirements of Section 601(e) of the WRDA of 2000, the Federal cost of the recommended plan would be approximately $174,700,000 and the non-Federal cost would be approximately $174,700,000. Within these costs, the estimated value of the lands, easements, right-of-way, disposal, and relocation costs for the recommended plan is $193,000,000. Credit for the value of the lands, easements, and rights-of-way required for the project shall be in accordance with the terms recommended in the PIR. The project level monitoring during the construction phase is estimated at $7,430,000. The estimated annual cost for operation maintenance, repair, replacement, and rehabilitation (OMRR&R) is $3,020,000, which includes monitoring and adaptive management activities recommended by the reporting officers to ensure success of the project at an estimated average annual cost of $887,000. In accordance with Sections 601(e)(4) and 601(e)(5)(D) of the WRDA of 2000, OMRR&R is a non-Federal responsibility, but the costs of OMRR&R will be shared equally between the Federal Government and the non-Federal sponsor.

7. Section 601(e)(5)(B) of the WRDA of 2000 authorizes credit toward the non-Federal share for non-Federal design and construction work completed during the period of design or construction, subject to the execution of the design or project cooperation agreement, and subject to a determination by the Secretary that the work is integral to the project. The reporting officers conclude that it is in the best interest of the Federal Government for this project to be implemented expeditiously due to the early benefits to several Federally listed threatened and endangered species within the project area, as well as hydrological benefits to federal lands and estuaries downstream of the project, including Ten Thousand Islands National Wildlife Refuge and Everglades National Park. As part of its initiative for early implementation of certain CERP projects known as "Acceler8", the non-Federal sponsor has stated its intention to construct portions of this project (i.e., plugging of Prairie Canal and installation of culverts under U.S. Highway 41) in advance of Congressional authorization and the signing of a project cooperation agreement, but consistent with this report. The reporting officers recommend that the non-Federal sponsor be credited for all reasonable, allowable, necessary, auditable, and allocable costs applicable to the Picayune Strand Restoration Project as may be authorized by law, including those incurred in advance of executing a project cooperation agreement for this project, subject to: a) certification by the Secretary of the Army that the activities and associated costs

are integral to the CERP restoration project and reasonable, allowable, necessary, auditable, and allocable; and b) that the activities have been implemented in accordance with U.S. Army Corps of Engineers (USACE) design and constructions standards and applicable Federal and State laws. The non-Federal sponsor is aware that it will not receive credit for such costs unless the Congress specifically approves the granting of such credits in the law authorizing the Picayune Strand Restoration Project, and the Secretary of the Army later determines the work is necessary and integral to the authorized project.

8. Credits for non-Federal design and construction will be evaluated based on the provision of documentation by the non-Federal sponsor. All documentation provided by the non-Federal sponsor will be thoroughly reviewed by the USACE to determine reasonable, allowable, necessary, auditable, and allocable costs. Upon completion of this review, a financial audit will be conducted prior to granting final credit. Coordination between the USACE and the Sponsor will occur throughout design and construction via the USACE Regulatory process. The credit afforded to the non-Federal sponsor will be limited to the lesser of the following: (1) actual costs that are reasonable, allowable, necessary, auditable, and allocable to the project; or (2) the USACE's estimate of the cost of the work allocable to the project had the USACE performed the work. The non-Federal sponsor intends to implement this work using its own funds and would not use funds originating from other Federal sources unless the Federal granting agency verifies in writing that the expenditure of such funds is expressly authorized by statute and in accordance with Section 601(e)(3) of the WRDA 2000.

9. The project complies with the following requirements of the WRDA of 2000:

a. Project Implementation Report (PIR). The requirements of a PIR as defined by Section 601(h)(4)(A).

b. Water Reservations. Section 601(h)(4)(A)((iii)((IV) and (V) require identification of the appropriate quantity, timing, and distribution of water dedicated and managed for the natural system and the amount of water to be reserved or allocated for the natural system. Water retained in natural areas and groundwater and water delivered to the estuary is beneficial and will be reserved.

c. Elimination or Transfer of Existing Legal Sources of Water. Section 601(h)(5)(A) states that existing legal sources of water shall not be eliminated or transferred until a new source of water supply of comparable quantity and quality is available to replace the water to be lost as a result of the Plan. Existing legal sources of water in the Picayune Strand study area include local rainfall and basin storage, and the surficial aquifer. These existing sources would not be eliminated or transferred.

d. Maintenance Of Flood Protection. Section 601(h)(5)(B) states that the Plan shall not reduce levels of service for flood protection that are in existence on the date of enactment of this Act and in accordance with applicable law. The level of service for flood protection upstream in Northern Golden Gate Estates will be preserved. A total of five levee systems would be constructed around certain developed areas to prevent these areas from being flooded as a result of the plan.

10. I generally concur with the findings, conclusions, and recommendations of the reporting officers. The Picayune Strand Restoration Project requires specific authorization by Congress in accordance with Section 601(d) of the WRDA of 2000. Accordingly, I recommend that the plan described herein for ecosystem restoration be authorized for implementation as a Federal project, with such modifications as in the discretion of the Chief of Engineers may be advisable. I also recommend that Congress authorize the non-Federal sponsor to receive credit for work accomplished prior to execution of a project cooperation agreement for this project, subject to: a) certification by the Secretary of the Army that the activities and associated costs are integral to the CERP restoration project and reasonable, allowable, necessary, auditable, and allocable; and b) that the activities have been implemented in accordance with U.S. Army Corps of Engineers design and constructions standards and applicable Federal and State laws. My recommendation is subject to cost-sharing, financing, and other applicable requirements of Section 601 of WRDA 2000, and in accordance with the following requirements which the non-Federal sponsor must agree to prior to project implementation:

a. Provide 50 percent of total project costs consistent with the provisions of Section 601(e) of the Water Resources Development Act of 2000, including authority to perform design and construction of project features consistent with Federal law and regulation;

b. Provide all lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and perform or assure the performance of all relocations determined by the Government to be necessary for the construction, operation, and maintenance of the project;

c. Provide or pay to the Government the cost of providing all retaining dikes, wasteweirs, bulkheads, and embankments, including all monitoring features and stilling basins, that may be required at any dredged or excavated material disposal areas required for the construction, operation, and maintenance of the project;

d. Give the Government a right to enter, at reasonable times and in a reasonable manner, upon land that the local sponsor owns or controls for access to the project for the purpose of inspection, and, if necessary, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the project;

e. Assume responsibility for operating, maintaining, replacing, repairing, and rehabilitating (OMRR&R) the project or completed functional portions of the project, including mitigation features, in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and State laws and specific directions prescribed in the OMRR&R manuals and any subsequent amendments thereto. Cost sharing for OMRR&R will be in accordance with Section 601 of WRDA 2000. Notwithstanding section 528(e)(3) of the WRDA of 1996 (110 Stat. 3770), the non-Federal sponsor shall be responsible for 50 percent of the cost of OMRR&R activities authorized under this section;

f. Unless otherwise provided for in the statutory authorization for this project, comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, and Section 103 of the WRDA of 1986, Public Law 99-662, as amended which provides that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until the non-Federal sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element;

g. Hold and save the Government free from all damages arising for construction and OMRR&R of the project and any project-related betterments, except for damages due to the fault or negligence of the Government or the Government's contractors;

h. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project to the extent and in such detail as will properly reflect total project costs;

i. Perform, or cause to be performed, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9601-9675, that may exist in, on, or under lands, easements or rights-of-way necessary for the construction, operation, and maintenance of the project; except that the non-Federal sponsor shall not perform such investigations on lands, easements, or rights-of-way that the Government determines to be subject to the navigation servitude without prior specific written direction by the Government;

j. Assume complete financial responsibility for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or right-of-ways that the Government determines necessary for construction, operation, or maintenance of the project;

k. As between the Government and the Non-Federal Sponsor, the Non-Federal Sponsor shall be considered the operator of the Project for purposes of CERCLA liability. To the maximum extent practicable, the Non-Federal Sponsor shall operate, maintain, repair, replace, and rehabilitate the Project in a manner that will not cause liability to arise under CERCLA;

l. Prevent obstructions of and encroachments on the project (including prescribing and enforcing regulations to prevent such obstruction or encroachments) which might reduce ecosystem restoration benefits, hinder operation and maintenance, or interfere with the project's proper function, such that as any new developments on project lands or the addition of facilities which would degrade the benefits of the project;

m. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public law 91-646, as amended by title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR part 24, in acquiring lands, easements, and rights-of-way, and performing relocations for construction, operation, and maintenance of the project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act;

n. Comply with all applicable Federal and State laws and regulations, including, but not limited to: Section 601 of the Civil Rights Act of 1964, PL 88-352 (42 U.S.C. 2000d) and Department of Defense Directive 5500.11 issued pursuant thereto; Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army;" and all applicable federal labor standards requirements including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 [revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a *et seq.*), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 *et seq.*) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)];

o. Comply with Section 106 of the National Historic Preservation Act in completion of all consultation with the Florida State Historic Preservation Officer, and as necessary, the Advisory Council on Historic Preservation, prior to construction as part of the preconstruction engineering and design phase of the project;

p. Provide 50 percent of that portion of total cultural resource preservation mitigation and data recovery costs attributable to the project that are in excess of 1 percent of the total amount authorized to be appropriated for the project and in accordance with Section 601(e)(3) of the WRDA 2000;

q. Do not use Federal funds to meet the non-Federal sponsor's share of total project costs unless the Federal granting agency verifies in writing that the expenditure of such funds is expressly authorized and in accordance with Section 601 (e)(3) of the WRDA of 2000;

r. Subsequent to the finalization of the PIR, further negotiations and refinements were made with the State regarding the process for reserving and protecting water with regard to a project.

The following language reflects this agreement. 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 the natural system restoration goals and objectives of the CERP, 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 overarching natural system objectives of the Plan:

(1) Ensure, through appropriate and legally enforceable means under Florida 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.

(2) 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.

(3) 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.

(4) 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."

11. The recommendations contained herein reflect the information available at this time and current departmental policies governing formulation of individual projects. They do not necessarily reflect program and budgeting priorities in the formulation of a National civil works construction program or the perspective of higher review levels within the Executive Branch. Consequently, the recommendation may be modified before it is transmitted to the Congress as a

proposal for authorization and implementation funding. However, prior to transmittal to the Congress, the non-Federal sponsor, the State, interested Federal agencies, and other parties will be advised of any modifications and will be afforded an opportunity to comment further. Government- to- Government consultation with the Miccosukee Tribe of Indians of Florida will continue throughout the authorization and implementation processes in fulfillment of the Army's trust responsibilities to the Tribe.



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