



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON DC 20310-0108

REPLY TO
ATTENTION OF

July 1, 1999

Honorable Albert Gore
President of the Senate
Washington, D.C. 20510

Dear Mr. President:

The Everglades are an American treasure on par with the Grand Canyon, Yellowstone, and California's ancient redwoods. There is no other place else like them in the world. But the Everglades are dying. And if we do not act now, we may very well lose the opportunity to save them for future generations. Today, I submit to you on behalf of the Administration, a scientifically and economically sound plan that will allow us to rescue this unparalleled natural resource from extinction.

In final response to resolutions by the House Committee on Transportation and Infrastructure, adopted September 24, 1992, Section 309(l) of the Water Resources Development Act of 1992, and Section 528(b)(l) of the Water Resources Development Act of 1996 (WRDA 96) the Secretary of the Army recommends approval of the Central and Southern Florida (C&SF) Project Comprehensive Review Study ("Restudy") and the initial authorization of important features and components included in the Comprehensive Plan to restore the south Florida ecosystem. The proposal is described in the report of the Chief of Engineers dated June 22, 1999, which includes other pertinent reports and comments. The views of the State of Florida, the South Florida Water Management District, the South Florida Regional Planning Council, the Department of the Interior, the U.S. Environmental Protection Agency, the Department of Commerce, the Natural Resources Conservation Service, and the Department of Health and Human Services are set forth in the enclosed report.

For close to 50 years, the C&SF Project has performed its authorized functions well. However, the project also has had substantial unintended adverse effects on the unique natural environment that constitutes the south Florida ecosystem, including the Everglades and Florida Bay. Excessive drainage of wetlands and changes in the natural variability of water flows have altered the Everglades ecosystem on a regional scale. The remaining Everglades, and indeed the entire south Florida ecosystem, no longer exhibit the functions, richness, and area that historically defined the pre-drainage system. There have been substantial and irreversible reductions in the size of the ecosystem - - over half of the Everglades have been lost forever. The remaining half is dying.

Most of the negative changes in the ecosystem are a direct result of water management activities designed to reduce flooding and provide for urban and agricultural water supply. Today, discharges to the Everglades are often too much, or too little, and frequently at the wrong times of the year. This affects plants and wildlife accustomed to the Everglades' historic range and timing of flows and water levels, including many endangered species that depend on Everglades National Park. This also results in damaging freshwater releases to the Caloosahatchee and St. Lucie Estuaries, affecting commercial and recreational fisheries. In addition, canals and highways that criss-cross the Everglades have interrupted its natural overland sheet flow.

Based on extensive planning and scientific study, involving multi-agency, multi-disciplinary teams from a number of Federal, state, tribal, and local agencies, stakeholders, and other interested parties from the nation and region, the Army Corps of Engineers, in partnership with the South Florida Water Management District, developed a comprehensive plan that provides for the restoration, protection, and preservation of the water resources of central and southern Florida, including the Everglades and Florida Bay. By storing most of the water currently discharged to the ocean (1.7 billion gallons per day on average), improving the quality of water discharged into the ecosystem, and removing internal levees and canals in the Everglades, the Plan provides the roadmap for the recovery of a healthy, sustainable ecosystem.

The Army's recommended Comprehensive Plan contains 68 components that will "get the water right" by addressing quantity, quality, timing, and distribution problems. These features vastly increase the amount of water available for the natural system and enhance urban and agricultural water supply, while maintaining flood protection. The Comprehensive Plan achieves the restoration of more natural flows of water, including sheet flow, improved water quality, and more natural hydroperiods in the south Florida ecosystem. Restoration of more natural hydrologic conditions will result in improvements to native flora and fauna, including threatened and endangered species. This plan was designed to enlarge the region's supply of fresh water and to improve how water is delivered to the natural system. Currently, only 30 percent of the water in the system goes to the natural environment. The Plan allows us to capture 1.1 million acre feet of "new" water - - 80 percent of which will go to the natural environment.

Implementation of the Comprehensive Plan will:

- ***Improve the health of over 2.4 million acres of the south Florida ecosystem, including the Everglades National Park;***
- ***Improve the health of Lake Okeechobee;***
- ***Virtually eliminate damaging freshwater releases to the estuaries;***
- ***improve water deliveries to Florida and Biscayne bays;***

- ***Improve wafer quality; and***
- ***Enhance water supply and maintain flood protection.***

The recommended plan includes the following structural and operational changes to the existing C&SF Project: over 181,000 acres of surface water storage reservoirs with a capacity to store over 1.5 million acre-feet of water; multi-purpose Water Preserve Areas in Palm Beach, Broward, and Miami-Dade counties between the urban areas and the eastern Everglades; 300 aquifer storage and recovery wells around Lake Okeechobee, in the Water Preserve Areas, and in the Caloosahatchee Basin capable of pumping as much as 1.6 billion gallons a day; 35,600 acres of treatment wetlands, known as Stormwater Treatment Areas; removing 240 miles of project canals and internal levees within the Everglades; storing water in two converted 11,000 acre limestone quarries in the Lake Belt region of northern Miami-Dade County; reuse of 220 million gallons a day of wastewater; and pilot projects to address uncertainties associated with some of the physical features. In addition, several studies are recommended to investigate additional improvements that will further enhance restoration, protection, and preservation of the south Florida ecosystem.

Implementation of the Comprehensive Plan will require both a long-term program, which will take place over the next 30 years, as well as a commitment of resources from the Federal government, the state of Florida, the South Florida Water Management District, and local governments in the region. The implementation program includes: 1) six pilot projects, 2) ten projects and a monitoring program for initial authorization in WRDA 2000, 3) a programmatic authority similar to the existing Everglades and South Florida Critical Restoration Projects authority contained in WRDA 1996, 4) additional project features that would be authorized in future WRDAs, 5) implementation of some operational changes and modifications, and 6) completion of three feasibility studies. Each of these program components is discussed in more detail below.

The recommended Comprehensive Plan, which was developed by over 100 scientists and engineers from over 30 agencies, provides a level of detail and analysis sufficient for plan selection and cost estimation. While nearly 4,000 pages, the Plan is conceptual in nature and does not provide the level of detail typically found in Corps of Engineers feasibility reports. Given the complexity and size of the ecosystem it would have taken many more years to develop information at this level of detail. Prior to initiation of construction, however, each feature will have more engineering and design; environmental analyses; flood protection analyses; water quality analyses; economic analyses; real estate analyses; and supplemental National Environmental Policy Act (NEPA) documents. This information, as well as an evaluation of each component's contribution to the Plan's performance and the need for refinements/modifications to the Comprehensive Plan will be documented in a series of Project Implementation Reports (PIRs). The PIRs will bridge the gap between the conceptual design contained in the Comprehensive Plan and the detailed design necessary to proceed to construction. Except for those projects recommended for initial authorization in WRDA

2000 or accomplished under the proposed programmatic authority, PIRs will be submitted to the Congress for project authorization in WRDA 2002 and beyond.

Pilot Projects: As mentioned above, six pilot projects are recommended. These pilot projects are needed to address uncertainties associated with some of the physical features that are proposed in the Plan. The projects include aquifer storage and recovery; in-ground reservoir technology in the Lake Belt region of Miami-Dade County; levee seepage management technology adjacent to Everglades National Park; and advanced wastewater treatment technology to determine the feasibility of using reuse water for natural system restoration. The estimated cost of the recommended pilot projects is \$97,000,000.

Initial Authorization Projects: Restoration of the Everglades demands immediate attention and action. We believe that it is vital to our overall success to take aggressive significant steps to start construction of restoration features as soon as possible. In this regard, we have selected an initial package of projects that we believe will provide immediate and substantial ecosystem restoration benefits. The initial authorization of projects includes a set of features that will provide, in the short-term, system-wide water quantity, quality, and flow distribution benefits to the ecosystem. The need for WRDA 2000 authorization of these features involves two factors: (1) the ability to improve efficiency with ongoing projects such as the Modified Water Deliveries Project which will improve flows to Everglades National Park; and (2) taking advantage of the benefits of Federal investments already undertaken (e.g., the purchase of over 50,000 acres of land in the Everglades Agricultural Area). This authorization will allow for detailed development of future projects while maximizing the opportunity to integrate certain features with other ongoing Federal and state programs. The specific components recommended for initial construction authorization, including an annual \$10 million adaptive assessment and monitoring program, total \$1,100,918,000. The Federal cost of these projects would be half of this total (\$550,459,000). As discussed previously, prior to initiation of construction, PIRs will be completed for each project proposed for initial authorization. These reports will document advanced planning; engineering and design; real estate analysis; and supplemental requirements under NEPA. These reports will be approved by the Secretary of the Army and the Administration before construction is initiated.

Programmatic Authority: It is also recommended that a programmatic authority be authorized to help expedite implementation of certain components in the Comprehensive Plan similar to the authorization provided in Section 528 of WRDA 1996 for Critical Restoration Projects. This programmatic authority would be limited to those components of the Comprehensive Plan that have a maximum total cost of \$70 million with a maximum Federal cost of \$35 million. This authority would allow approximately 27 components of the Comprehensive Plan, with a total cost of \$489,885,000, (Federal cost of \$244,942,500) to be implemented in an efficient and expedited manner.

Future VWRDA Authorizations: Approximately 26 components of the Comprehensive Plan are not included in the initially authorized projects or eligible under the proposed programmatic authority. PIRs for these projects will be submitted to the Congress for construction authorization under subsequent WRDAs beginning in 2002. The cost of those components total \$6,211,396,000 (Federal cost of \$3,105,698,000). Based on the current Plan schedule, PIRs for those components will be submitted to Congress from 2002 through 2014. Individual project schedules may be modified to expedite construction completion based on further commitments discussed in the Chief of Engineers' Report or changes in light of new information.

Operational Changes: Operational components have also been identified in the recommended Comprehensive Plan. Most of the operational features will be implemented in association with related construction features, and as such, the costs are included in those features. The operational features included in the Comprehensive Plan include modifying the regulation schedules for Lake Okeechobee and the Water Conservation Areas, and environmental water deliveries to the St. Lucie and Caloosahatchee Estuaries. Such operational components will ensure that important ecosystem benefits, generated by the Comprehensive Plan, are maintained and preserved.

Additional Studies: Three feasibility studies - the Florida Bay and Florida Keys Feasibility Study, Southwest Florida Feasibility Study, and Comprehensive Integrated Water Quality Plan have been identified for initiation. These studies will be conducted under the authority of WRDA 1996 that allows for continuation of studies and analyses that are necessary to further the objectives of the Comprehensive Plan.

It is recommended that the Comprehensive Plan be approved as a framework and guide for modifications to the C&SF Project. Based on October 1999 prices, the estimated first cost of the Comprehensive Plan described above is \$7.8 billion to be cost shared 50-50 with the non-Federal sponsor, the South Florida Water Management District. Over the more than 20 years needed to implement the Plan, its annual costs - - assuming an optimum authorization and appropriations schedule - - amount to approximately \$400 million (\$200 million Federal).

The estimated annual operation and maintenance (O&M) costs for the construction features of the recommended Comprehensive Plan are \$172 million. Although the Comprehensive Plan and the South Florida Ecosystem Restoration Task Force recommend that these costs be shared 50-50 with the non-Federal sponsor, the Chief of Engineers report recommends that O&M be a 100 percent non-Federal responsibility, consistent with WRDA 96. This is a very important issue that will require further review before I can make a final recommendation on behalf of the Administration. In this regard, the Administration is committed to continuing a dialogue with the non-Federal sponsor, the Congress, and other stakeholders to resolve the difference between the two recommended approaches.

The cost apportionment of the Plan components recommended for initial construction authorization, including lands, easements, rights-of-way, relocations, and disposal (LERRO), and annual O&M is shown below:

	Total	Federal	Non-Federal
Construction	\$ 741,525,000	\$ 598,958,500	\$ 142,566,500
LERRD	\$ 456,392,000	\$ 0	\$ 456,392,000
Total	\$1,198,000,000	\$ 598,958,000	\$ 598,958,500
(Rounded)	\$1,198,000,000	\$ 599,000,000	\$ 599,000,000
Annual O&M	\$ 20,224,000	\$ TBD	\$ TBD

The Comprehensive Plan recommended by the Army is a roadmap that provides critical direction and organizational structure for restoring and protecting the south Florida ecosystem. The comprehensive, system-wide nature of the plan and the linkage of the elements of the plan to each other must be preserved during implementation. Implementation of the plan must proceed using the principles of adaptive assessment as outlined in the Chief of Engineers' Report. The recommended implementation plan recognizes fully the need to ensure that once restored, south Florida's natural environment will never again be negatively affected by water management activities. The primary and overarching purpose of the Comprehensive Plan is to restore the south Florida ecosystem. Accordingly, to ensure the successful implementation of the Comprehensive Plan, the Army will continue to work with the Department of the Interior, the U.S. Environmental Protection Agency, other Federal agencies, the state of Florida, and Congress to ensure that the natural system benefits are achieved and maintained. Those assurances will address the proper quantity, quality, timing, and distribution of water for the natural system. Such assurances should not, to the extent practicable, affect other existing legal water uses and flood protection.

I recommend approval and implementation of the Comprehensive Plan generally in accordance with the Chief of Engineers Report, including the specific provisions in paragraph 31. The Army, in coordination with other Federal agencies and the South Florida Water Management District, will submit a legislative proposal to authorize the Comprehensive Plan. This proposal, will likely be part of the Administration's Water Resources Development Act of 2000.

The Everglades are an American treasure in serious trouble. We believe that restoration of the Everglades is a national priority. By acting now, we can renew the health of the Everglades and save this unique and remarkable landscape. Implementing our Comprehensive Plan with commitment and vision will allow us to restore the Everglades and leave a legacy for which generations to come will be thankful.

The Office of Management and Budget advises that it has no objection to the submission of the report to the Congress. We have enclosed a copy of their letter in the report.

Sincerely,

A handwritten signature in black ink, appearing to read "Joseph W. Westphal". The signature is fluid and cursive, with a large initial "J" and "W".

Joseph W. Westphal
Assistant Secretary of the Army
(Civil Works)

Enclosures



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

REPLY TO
ATTENTION OF:

CECW-PE (IO-1-7a)

22 JUN 1999

SUBJECT: Central and Southern Florida Project - Comprehensive Review Study

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on the Central and Southern Florida (C&SF) Project Comprehensive Review Study ("Restudy"). It is accompanied by the report of the district and division engineers. These reports are in final response to two resolutions adopted by the Committee on Transportation and Infrastructure of the House of Representatives on 24 September 1992, and Section 309(1) of the Water Resources Development Act (WRDA) of 1992 (Public Law 102-580). Further specific guidance and direction for the study was provided by Section 528 of the WRDA of 1996 (Public Law 104-303). Preconstruction engineering and design (PED) activities for the recommended improvements will continue under these authorities.

2. The C&SF Project, first authorized by the Congress in 1948, is a multipurpose project that provides flood control; water supply for municipal, industrial, and agricultural uses; prevention of salt water intrusion; water supply for Everglades National Park (ENP); and protection of fish and wildlife resources. Construction of the project began in 1950 and it was essentially complete in the 1970's. The primary system includes about 1,000 miles of levees and canals, 150 water control structures, and 16 major pumping stations encompassing 18,000 square miles from Orlando to the Florida Reef Tract. Today, the C&SF Project is the backbone of south Florida's system of water management. It provides flood protection and supplies water to more than six million people and almost one million acres of agricultural lands. It encompasses about 1,800,000 acres of Everglades habitat including ENP. The project is now largely operated and maintained by the South Florida Water Management District (SFWMD). Major areas include the Kissimmee River, Lake Okeechobee, St. Lucie and Caloosahatchee basins, Everglades Agricultural Area (EAA), Water Conservation Areas (WCAs), including Loxahatchee National Wildlife Refuge, Upper East Coast (Martin and St. Lucie Counties), Lower East Coast (Palm Beach, Broward, and Miami-Dade County), Lower West Coast, ENP, Big Cypress National Preserve and Florida and Biscayne Bays. The Kissimmee River, Lake Okeechobee and the Everglades are the dominant watersheds that connect a mosaic of wetlands, uplands, coastal areas, and marine areas. The study area includes all or part of the following 16 counties: Monroe, Miami-Dade, Broward, Collier, Palm Beach, Hendry, Martin, St. Lucie, Glades, Lee, Charlotte, Highlands, Okeechobee, Osceola, Orange, and Polk.

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3. The Restudy reexamined the C&SF Project to determine the feasibility of modifying the project to restore the south Florida ecosystem and to provide for other water-related needs of the region. Specifically, as required by the authorizing legislation, the study investigated making structural and operational modifications to the C&SF Project for improving the quality of the environment and protecting natural resources; protecting water quality in the south Florida ecosystem; improving protection of the aquifer; improving the integrity, capability, and conservation of urban and agricultural water supplies; flood protection and improving other water-related purposes.

4. For close to 50 years, the C&SF Project has performed its authorized functions well. However, the project also has had unintended adverse effects on the unique natural environment that constitutes the Everglades and Florida Bay ecosystems. Today, south Florida is home to more than six million people, more than nine times the population in 1948 when the C&SF Project was authorized. This influx of people has led to dramatic changes to the landscape and the historically defined Everglades - the "river of grass." The construction of flood control levees has compartmentalized the Everglades and canals have efficiently drained water to the Atlantic Ocean and the Gulf of Mexico. More than two million acre-feet of water is lost from the natural system annually through discharge and seepage. It has been determined that lack of storage in the system, particularly during wet periods, has led to ecological damage of Lake Okeechobee and damaging regulatory releases to the Caloosahatchee and St. Lucie Estuaries. Conversely, in dry periods, this lack of storage has led to water supply shortages for both the human and natural environment.

5. The remaining Everglades and other natural ecosystems in south Florida no longer exhibit the functions, richness and spatial extent that defined the pre-drainage systems. There have also been substantial shifts in the species composition and ecological function of coastal estuaries such as Florida Bay associated with changes in freshwater flows to these areas. There have been substantial and irreversible reductions in the spacial extent of the wetland systems (including an approximate 50 percent reduction in the extent of the true Everglades) and in the total water storage, timing, and flow capacities of these systems. These natural systems will not recover their defining characteristics under current conditions and will not be sustained in the future. Indeed, the health of the ecosystem will continue to decline unless corrective actions are taken.

6. Water quality throughout south Florida has also deteriorated over the past 50 years. Many wetlands that acted as natural filters and retention areas either can no longer serve these purposes or have been lost to drainage or development. As a result, many water bodies throughout south Florida presently do not meet water quality standards. Untreated urban and agricultural storm water that does not meet water quality standards is sometimes sent to natural areas. Excessive nutrients entering the Everglades have led to a decline in ecological productivity. Flood releases

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from Lake Okeechobee and runoff discharged via secondary drainage canals in the St. Lucie River Basin have been linked to fish lesions and a decline in estuarine productivity, resulting in substantial ecological and economic impacts. Adequately and reliably meeting water supply demand for all sectors is also a problem. Historically, most rainwater seeped into the ground in the region's vast wetlands. As south Florida developed, the canal system worked too effectively and drained too much water off the land too quickly. The result is that not enough water is stored for all users. Water shortages that occur today are expected to become more frequent without any changes to the water management system. The reporting officers state that without the corrective steps recommended in the Comprehensive Plan, conflicts over the allocation of water needed for the natural system, agricultural, and urban uses will only increase with the region's population, which is expected to reach eight million by the year 2010 and 12-15 million by 2050.

7. The primary purpose of the Restudy was to evaluate conditions within the study area, make recommendations to modify the project to restore important functions and values of the Everglades and south Florida ecosystems, and to plan for the water resources needs of the people of south Florida for the next 50 years. The major goals and objectives for the Restudy were established to enhance ecological values, economic values, and social well being. The goals to enhance ecologic values include: increase the total spatial extent of natural areas; improve habitat and functional quality; and improve native plant and animal species abundance and diversity. The goals to enhance economic values and social well being include: improve availability of freshwater for agricultural and municipal & industrial water supply; reduce flood damages; and protect cultural and archeological resources and values.

8. The Restudy included extensive hydrological and ecological modeling, water quality analyses, and the study effort identified the most suitable and beneficial plan components for south Florida ecosystem restoration and urban and agricultural water supply, as well as how the components should be implemented for maximum benefit. Because of its fundamental importance to restoration, much of the emphasis early in the plan formulation process was on increasing regional storage capacity and increasing water management flexibility to meet water quantity objectives. Later iterations addressed the restoration objectives of greater system connectivity or decompartmentalization and sheetflow. After extensive planning and scientific study, involving multi-agency, multi disciplinary teams from a number of Federal, state, tribal, and local governments, stakeholders, and other interested parties from the nation and region, the reporting officers developed a comprehensive plan to address south Florida's water resources problems for the next fifty years. The recommended Comprehensive Plan provides restoration, protection, and preservation of the water resources of central and southern Florida, including the Everglades. By storing most of the water currently discharged to the ocean, improving the quality of water discharged into the ecosystem, and removing more than 240 miles of internal levees and canals in the Everglades, the Plan, combined with the additional commitments contained in paragraph 31,

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provides the roadmap for the recovery of a healthy, sustainable ecosystem in south Florida. Under the existing C&SF Project, about 1.2 million acre-feet per year is delivered to meet urban and agricultural water supply and deliveries to ENP. About 70 percent of today's water deliveries go to urban and agricultural water supply and about 30 percent goes to the environment. The Corps analysis shows that 80 percent of the 1.1 million acre-feet per year of "new water" (i.e., water that was previously sent to tide in the Atlantic Ocean and the Gulf of Mexico) obtained under the Comprehensive Plan will be used to benefit the environment. The remaining 20 percent will benefit urban and agricultural users.

9. The reporting officers' recommended Comprehensive Plan contains 68 components, including Other Project Elements (OPEs), Critical Restoration Projects, water quality treatment facilities, and other modifications with the principal goal of the creation of approximately 217,000 acres of new reservoirs and wetlands-based water treatment areas. These features vastly increase storage and water supply for the natural system, as well as for urban and agricultural needs, while maintaining current C&SF Project purposes. The Comprehensive Plan achieves the restoration of more natural flows of water, including sheetflow, improved water quality, and more natural hydro periods in the south Florida ecosystem. Improvements to native flora and fauna, including threatened and endangered species, will occur as a result of the restoration of hydrologic conditions. This plan was designed to enlarge the region's supply of fresh water and to improve how water is delivered to the natural system. The recommended plan includes the following structural and operational changes to the existing C&SF Project: 181,250 acres of surface water storage reservoirs with a capacity to store 1,543,270 acre-feet of water; Water Preserve Areas consisting of multipurpose water management areas in Palm Beach, Broward, and Miami-Dade Counties between the urban areas and the eastern Everglades; 300 aquifer storage and recovery (ASR) wells around Lake Okeechobee, in the Water Preserve Areas, and in the Caloosahatchee Basin capable of pumping as much as 1.6 billion gallons a day; 35,600 acres of treatment wetlands, known as Stormwater Treatment Areas (STAs); removing more than 240 miles of project canals and internal levees within the Everglades; storing water in two converted 11,000 acre limestone quarries in the Lake Belt region of northern Miami-Dade County; reuse of 220 million gallons a day of wastewater; and pilot projects. In addition, several studies are recommended to investigate additional improvements needed to support restoration, protection, and preservation of the south Florida ecosystem.

10. The reporting officers' report indicates that during the iterative plan formulation process, some features or components could not be evaluated as an integral part of the comprehensive evaluation of the alternative plans. These components were termed Other Project Elements (OPEs) and underwent a separate evaluation process. Included in these OPEs were some of the 35 Critical Restoration Projects nominated by the South Florida Ecosystem Restoration Task Force / Working Group which have not been approved for construction or funded under the

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program authority provided in Section 528 of the Water Resources Development Act of 1996. The Comprehensive Plan includes a total of 20 OPE components which are identified in Table 1 below.

11. A large number of construction features have been identified in the reporting officers' recommended Comprehensive Plan. These features were designed at various levels of detail based on information available during the plan formulation and evaluation phase. Further, many design assumptions for the components were based solely on output from the South Florida Water Management Model which averages hydrologic conditions across four square mile cells. Consequently, the engineering details of the construction features, including the size and locations, are conceptual. Conceptual planning of many of the construction and operation features did not involve detailed planning and design work necessary to optimize features to achieve all ecosystem restoration performance objectives. More site-specific analyses of the recommended plan features will be needed during the preconstruction engineering and design phase to determine the optimum size, location, depth and configuration. A listing of recommended Comprehensive Plan construction features is shown in Table 1.

Table 1 - Comprehensive Plan - Construction Features
(\$1,000's, October 1999 Prices)

REGION	Construction	Real Estate	Total
Kissimmee River Region			
North Lake Okeechobee Storage Reservoir (WQ)	\$95,134	\$189,720	\$284,854
Taylor Creek / Nubbin Slough Storage and Treatment Area (WQ)	\$74,326	\$29,700	\$104,026
Lake Okeechobee Watershed Water Quality Treatment Facilities (OPE) (WQ)	\$47,800	\$14,448	\$62,248
Lake Okeechobee Tributary Sediment Dredging/Phosphorus Removal (OPE)	\$900	\$4,700	
Lake Istokpoga Regulation Schedule Modification (OPE)	\$50	\$0	\$50
Lake Okeechobee Aquifer Storage and Recovery	\$1,108,797	\$7,515	\$1,116,312
Caloosahatchee River Region			
C-43 Basin Storage Reservoir and Aquifer Storage and Recovery	\$313,574	\$132,621	\$446,195
Caloosahatchee Backpumping with Stormwater Treatment (WQ)	\$69,715	\$13,179	\$82,894
Upper East Coast			
C-44 Basin Storage Reservoir	\$21,888	\$90,675	\$112,563
C-23/C-24/C-25/Northfork and Southfork Storage Reservoirs	\$281,175	\$429,048	\$710,223

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REGION	Construction	Real Estate	Total
Everglades Agricultural Area			
Everglades Agricultural Area Storage Reservoirs	\$350,112	\$86,536	\$436,648
Big Cypress Region			
Big Cypress / L-28 Interceptor Modifications (WQ)	\$36,051	\$6,700	\$42,751
Seminole Tribe Big Cypress Water Conservation Plan (East & West) (OPE) (WQ)	\$69,553	\$5,735	\$75,288
Water Conservation Areas (WCAs) Region			
Flow to Northwest and Central Water Conservation Area 3A	\$30,877	\$0	\$30,877
Modify G-404 Pump Station	(\$10,137)	(\$0)	(\$10,137)
Flow to Central Water Conservation Area 3A	(\$20,740)	(\$0)	(\$20,740)
WCA 3 Decompartmentalization and Sheetflow Enhancement	\$185,408	\$26,279	\$211,687
Additional S-345 Structures	(\$48,450)	(\$0)	(\$48,450)
Raise/Bridge East Portion of Tamiami Trail , Fill Miami Canal, L-29 Removal	(\$26,467)	(\$479)	(\$26,946)
L-68A, L-67C, L-29, L-28 and L-28 Tieback/Canal Removal & L-67A Weirs	(\$59,204)	(\$0)	(\$59,204)
North New River Improvements	(\$51,287)	(\$25,800)	(\$77,087)
Loxahatchee National Wildlife Refuge Internal Canal Structures	\$7,324	\$345	\$7,669
Miccosukee Water Management Plan (OPE) (WQ)	\$22,741	\$1,718	\$24,459
Lower East Coast			
Pal-Mar and J.W. Corbett Wildlife Mgmt. Area Hydropattern Rest. (OPE)	\$2,500	\$8,000	\$10,500
Water Preserve Areas / L-8 Basin	\$383,541	\$31,641	\$415,182
L-8 Project	(\$69,908)	(\$4,290)	(\$74,198)
C-51 and Southern L-8 Reservoir	(\$313,633)	(\$27,351)	(\$340,984)
Acme Basin B Discharge (OPE) (WQ)	\$11,600	\$8,500	\$20,100
Lake Worth Lagoon Restoration (OPE)	\$2,000	\$300	\$2,300
Winsburg Farms Wetland Restoration (OPE) (WQ)	\$10,000	\$4,140	\$14,140
Palm Beach County Wetlands-based Water Reclamation (OPE) (WQ)	\$24,900	\$2,800	\$27,700
C-17 Backpumping and Treatment (WQ)	\$9,824	\$10,367	\$20,191
C-51 Backpumping and Treatment (WQ)	\$19,156	\$13,475	\$32,631
C-51 Regional Groundwater Aquifer Storage and Recovery	\$122,391	\$9,945	\$132,336
Palm Beach County Agricultural Reserve Reservoir and Aquifer Storage and Recovery	\$66,442	\$57,657	\$124,099

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REGION	Construction	Real Estate	Total
Lower East Coast (Continued)			
Protect and Enhance Existing Wetland Systems along Loxahatchee National Wildlife Refuge including the Strazzulla Tract (OPE)	\$3,800	\$48,972	\$52,772
Site 1 (Hillsboro Canal Basin) Impoundment and Aquifer Storage and Recovery	\$116,792	\$23,587	\$140,379
Broward County Secondary Canal System 1/	\$10,978	\$1,920	\$12,898
Western C-11 Diversion Impoundment and Canal and Water Conservation Areas 3A and 3B Levee Seepage Management (WQ) (Total)	\$57,526	\$167,646	\$225,172
WCA 3A/3B Levee Seepage Management	(\$15,209)	(\$85,126)	(\$100,335)
C-11 Impoundment & Stormwater Treatment Area	(\$42,317)	(\$82,520)	(\$124,837)
C-9 Stormwater Treatment Area / Impoundment (WQ)	\$26,207	\$62,939	\$89,146
North Lake Belt Storage Area (WQ)	\$381,193	\$154,868	\$536,061
Diverting Water Conservation Area 2 and 3 flows to Central Lake Belt (Total)	\$66,336	\$13,321	\$79,657
Divert WCA 2 Flows to Central Lake Belt Storage	(\$65,859)	(\$13,013)	(\$78,872)
Divert WCA 3 Flows to Central Lake Belt Storage	(\$477)	(\$308)	(\$785)
Central Lake Belt Storage Area (WQ) (Total)	\$402,502	\$100,359	\$502,861
Central Lake Belt Storage Reservoir	(\$395,677)	(\$100,359)	(\$496,036)
Flows to Eastern Water Conservation Area	(\$6,825)	(\$0)	(\$6,825)
Dade-Broward Levee / Pennsuco Wetlands	\$10,103	\$8,676	\$18,779
C-4 Control Structures	\$1,834	\$495	\$2,329
Bird Drive Recharge Area	\$52,459	\$71,625	\$124,084
L-31N Levee Improvements for Seepage Management and S-356 Structures (Total)	\$89,514	\$94,704	\$184,218
L-31N Improvements for Seepage Management	(\$68,611)	(\$0)	(\$68,611)
Construction of S-356 A & B Structures	(\$20,903)	(\$94,704)	(\$115,607)
West Miami-Dade County Reuse (WQ)	\$435,998	\$3,540	\$439,538
Biscayne Bay Coastal Wetlands (WQ) (Total)	\$93,928	\$205,655	\$299,583
Biscayne Bay Coastal Wetlands (OPE)	(\$92,000)	(\$200,000)	(\$292,000)
Biscayne Bay Coastal Canals	(\$1,928)	(\$5,655)	(\$7,583)
South Miami-Dade County Reuse (WQ)	\$359,700	\$3,324	\$363,024

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REGION	Construction	Real Estate	Total
Lower East Coast (Continued)			
Restoration of Pineland & Hardwood Hammocks in C-111 Basin (OPE)	\$600	\$0	\$600
C-111N Spreader Canal (WQ)	\$48,268	\$45,766	\$94,034
Southwest Florida Region			
Southern Golden Gate Estates Hydrologic Restoration (OPE) (WQ)	\$15,550	\$0	\$15,500
Southern CREW Project Addition (OPE)	\$3,434	\$30,104	\$33,538
Lake Trafford Restoration (OPE)	\$14,664	\$744	\$15,408
Henderson Creek / Belle Meade Restoration (OPE)	\$3,776	\$1,029	\$4,805
Lake Park Restoration (OPE)	\$5,000	\$166	\$5,166
Florida Bay and Keys			
Florida Keys Tidal Restoration (OPE)	\$1,200	\$51	\$1,251
System-wide			
Melaleuca Eradication Project and other Exotic Plants (OPE)	\$5,772	\$0	\$5,772
TOTAL	\$5,577,813	\$2,221,435	\$7,799,248
TOTAL (\$1,000 in Oct. 1999 Prices) (rounded)			\$7,800,000

KEY: OPE - Other Project Element Feature
WQ - Water Quality Feature

12. A number of operational components have also been identified in the recommended Comprehensive Plan. Most of the operational features will be implemented in association with related construction features shown in Table 1, and as such, the costs are included in those features. The operational features included in the Comprehensive Plan include: the Lake Okeechobee Regulation Schedule; Environmental Water Supply Deliveries to the Caloosahatchee and St. Lucie Estuaries; Modifications to the regulation schedules for WCAs 2A, 2B, 3A, 3B and the current Rainfall Delivery Formula for Everglades National Park; Modified Holey Land Wildlife Management Area Operations Plan; Modified Rotenburger Wildlife Management Area Operation Plan; Change Coastal Wellfield Operations in the Lower East Coast; Lower East Coast Utility Water Conservation; and Operational Modification to Southern Portion of L-31N and C-111Project. The development of all operational components will follow an iterative process during the Plan’s implementation. Such operational components will ensure that important ecosystem benefits, generated by the Comprehensive Plan, are maintained and preserved.

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13. In response to comments made by the public and in the draft Fish and Wildlife Coordination Act report, the U.S. Army Corps of Engineers, along with its partner agencies, conducted additional analyses to further improve restoration features in key areas of the C&SF ecosystem. A major impetus for this analysis was to determine if additional water could be captured in the Lower East Coast urban areas and used to better meet performance targets in the WCAs and ENP, as well as for investigating alternative sources of water for Biscayne Bay. The Corps analysis indicates that additional captured water, totaling about 245,000 acre-feet from Palm Beach and Broward Counties, helps to meet targets for ENP, Biscayne Bay, and some areas within the WCAs. In addition, issues relative to treating urban runoff prior to discharge into the WCAs and the Everglades, and impacts to secondary canals have not been fully resolved. The Corps remains optimistic that these problems can be solved and is committed to implementing the final plan in a manner that provides more water for ENP and Biscayne Bay. The Corps is also committed to solving the remaining operational problems of the WCAs associated with the Comprehensive Plan. The Corps will complete the additional analysis that is necessary to refine the Comprehensive Plan to provide for an improved capability for delivery of additional water (approximately 245,000 acre-feet) to ENP and Biscayne Bay, either by capturing additional runoff from urban areas or by some other means. The implementation plan includes a phased approach to provide for substantial improvements and the maximum ecological benefits to the WCAs, ENP, and Biscayne Bay, and those other natural areas that have been adversely affected by the C&SF Project. While some implementation scenarios indicate a reduction of fresh water flows to Biscayne Bay, the Corps will implement the Restudy in a way that avoids such results. Scientists, including scientists from Biscayne National Park, will soon begin a consensus process to review the performance measures for Biscayne Bay and it is possible that there will be a consensus conclusion that alternative fresh water flow patterns may be beneficial to Biscayne Bay. Only in that event, would the Corps consider reducing flows to Biscayne Bay during the implementation phase of the Restudy.

14. The Comprehensive Plan includes 22 water quality improvement features. These measures are deemed essential for Everglades restoration and are included in the Comprehensive Plan and will be cost-shared 50% - Federal and 50% - non-Federal. These features are identified in Table 1.

15. Implementation of the Comprehensive Plan will require both a long-term program, which will take place over the next several decades, as well as a commitment of resources from the Federal, the state of Florida, South Florida Water Management District (SFWMD), and local governments in the region. The reporting officers' recommendations for the implementation program are based on input from the SFWMD, public meetings, state and agency review, local sponsors, the Governor's Commission for a Sustainable South Florida, and the South Florida Ecosystem Restoration Task Force and Working Group. The implementation program was based

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on an analysis of the scheduling of plan features and ongoing Federal and State programs. The reporting officers' implementation program assumes the following: Congressional approval of the Comprehensive Plan as a framework and guide for authorization; initial authorization of a specific set of key components and pilot projects; a programmatic authority similar to the existing Critical Project authority contained in the WRDA of 1996; future Congressional authorization of components; implementation of some components without further Congressional action; and completion of three additional feasibility studies. The implementation plan is discussed below.

16. Project Implementation Reports. The recommended Comprehensive Plan has a level of detail and analysis sufficient for plan selection and cost estimation, but it is not as refined as traditional Corps of Engineers feasibility report recommendations submitted to Congress for construction authorization. To continue project implementation, additional efforts are needed to develop the detailed technical information to implement the project. These efforts include: additional plan formulation; engineering and design; environmental analyses; flood protection analyses; water quality analyses; economic analyses; siting and real estate analyses; supplemental National Environmental Policy Act (NEPA) documents; and evaluation of the component(s) contribution to the comprehensive plan performance and the need for refinements/modification to the Comprehensive Plan. The results of these additional efforts will be documented in a series of Project Implementation Reports (PIRs). The PIRs will bridge the gap between the conceptual design contained in the Comprehensive Plan and the detailed design necessary to proceed to construction. PIRs will typically be completed in 18 to 36 months.

17. Except for those projects recommended for initial authorization or accomplished under the proposed programmatic authority discussed below, PIRs will be submitted to Congress for project authorization. Following project authorization, detailed design and real estate activities would commence followed by construction and operation and maintenance of the project. Components that are authorized for construction prior to development of a PIR will still require completion of a PIR. It is anticipated that these reports will be approved by the Secretary of the Army without the need for further Congressional action unless major changes to the Comprehensive Plan are recommended.

18. Pilot Projects. In addition to the construction and operational features previously discussed, a series of pilot projects has been recommended in the implementation plan. These pilot projects are needed to address uncertainties associated with some of the physical features that are proposed in the recommended plan. These projects include aquifer storage and recovery in each geographic region that the technology is proposed; in-ground reservoir technology in the Lake Belt region of Miami-Dade County; levee seepage management technology adjacent to Everglades National Park; and advanced wastewater treatment technology to determine the feasibility of using reuse water for ecologic restoration.

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a. In an effort to provide additional water storage capacity throughout south Florida, a technology known as aquifer storage and recovery (ASR) will be used to build more than 300 wells into the Florida aquifer. Despite its proven track record, some are concerned that the technology has not been tested on such a large scale. The pilot projects will help to identify the most suitable sites for wells, evaluate the quality of water to be injected, and determine the water quality of the receiving aquifer. The projects will be targeted in areas adjacent to Lake Okeechobee, in the Caloosahatchee River Basin, and near West Palm Beach in the Lower East Coast area.

b. In-ground reservoirs are proposed in the Lake Belt region of Miami-Dade County. Pilot projects are needed to determine the construction technologies, storage efficiencies, impacts on local hydrology and water quality effects associated with these projects. Water quality assessments will determine whether the in-ground reservoirs and associated seepage barriers will store untreated water without contaminating the ground water and will be able to provide water of sufficient quality to be used in the natural system.

c. At the northeastern edge of Everglades National Park, a pilot project is proposed that would explore technologies to control seepage from the Park. The project would determine adequate groundwater flows during the wet season that are needed to minimize both potential impacts to Miami-Dade County's West Wellfield and freshwater flows into Biscayne Bay. Prior to implementation of this pilot project, a review will be conducted to determine the best manner to link this pilot project to the design of the Modified Water Deliveries Project. This pilot project will be undertaken if needed to test the selected technology.

d. The wastewater reuse technology pilot project involves construction of pilot facilities to investigate superior treatment technologies, monitor water quality, and evaluate cost effectiveness of advanced wastewater treatment technologies. The facilities will eventually increase the quantity of water available for ecologic restoration. In addition to the pilot facility studies, an investigation will be conducted in Miami-Dade County to ensure that the advanced treatment technology used in the proposed West Miami-Dade and South Miami-Dade facilities will have no adverse impact on freshwater wetlands and coastal wetlands receiving reuse water. The proposed ecological investigation will determine the constituents of concern in local waste water and the ability of various advanced treatment technologies to remove those constituents.

e. The estimated cost of the recommended pilot projects shown on Table 2 is \$97,000,000. These costs include \$9,411,000 for planning, engineering and design; \$9,800,000 for real estate; and \$77,789,000 for construction and associated monitoring.

Table 2 - Recommended Pilot Projects

Project	Cost
Lake Okeechobee Aquifer Storage and Recovery (ASR)	\$19,000,000
Caloosahatchee River (C-43) Basin ASR	\$6,000,000
Site 1 Impoundment and ASR	\$9,000,000
Lake Belt In-Ground Reservoir Technology	\$23,000,000
L-31N Seepage Management	\$10,000,000
Wastewater Reuse Technology	\$30,000,000
TOTAL	\$97,000,000

19. Adaptive Assessment and Construction Monitoring Program. The reporting officers recommend the authorization of an extensive Adaptive Assessment Program, which includes a system-wide monitoring program which will be conducted to support the ecosystem restoration objectives of the Comprehensive Plan. The monitoring program is a necessary component of the Comprehensive Plan to assure that ecosystem benefits are achieved in ENP, Biscayne Bay, Big Cypress National Preserve, the Loxahatchee National Wildlife Refuge, as well as other natural areas. This proposed 10-year program at an annual cost of \$10,000,000, will provide an opportunity to continue investigating concepts and issues relative to the overall Comprehensive Plan while implementation of the initial features is underway. The reporting officers have recommended that this program cost be shared as construction or 50 percent - Federal and 50 percent - non-Federal.

20. Initial Component Authorization. The initial authorization of projects will include a set of construction features that will provide, in the short-term, system-wide water quality and flow distribution benefits to the ecosystem. The immediacy for authorization of these features involves two factors: (1) efficiency with ongoing projects; and (2) getting the benefits of Federal investments already undertaken. This authorization will allow for detailed development of future projects under the Comprehensive Plan while maximizing the opportunity to integrate those features with other ongoing Federal and State programs, including the Modified Water Deliveries Project and the Everglades Construction Project. Furthermore, the South Florida Water Management District and the U.S. Department of the Interior have purchased lands associated with a number of components of the Comprehensive Plan, including nearly 51,000 acres of land

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as a result of the purchase and exchange of the Talisman property in the Everglades Agricultural Area (EAA) for water storage. Immediate authorization of the components that use these lands will ensure that these lands will be utilized as soon as possible. The specific components recommended for initial construction authorization, including adaptive assessment and monitoring, which total \$1,100,918,000 are shown below in Table 3. Prior to initiation of detailed design and construction, Project Implementation Reports will be completed for each project proposed for initial authorization. These reports will document advanced planning; engineering and design; real estate analysis; and supplemental requirements under the National Environmental Policy Act.

Table 3 - Recommended Construction Features for Initial Authorization

Project	Cost
C-44 Basin Storage Reservoir	\$112,562,000
Everglades Agricultural Area Storage Reservoirs - Phase 1	\$233,408,000
Site 1 Impoundment	\$38,535,000
WCA 3A /3B Levee Seepage Management	\$100,335,000
C-11 Impoundment & Stormwater Treatment Area	\$124,837,000
C-9 Impoundment / Stormwater Treatment Area	\$89,146,000
Taylor Creek / Nubbin Slough Storage and Treatment Area	\$104,027,000
Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within WCA 3	\$26,946,000
North New River Improvements	\$77,087,000
C-111 N Spreader Canal	\$94,035,000
Adaptive Assessment and Monitoring Program (10-years)	\$100,000,000
TOTAL	\$1,100,918,000

21. In developing the recommendation for the initial authorization features, the Corps considered the effects of the Comprehensive Plan to ongoing projects and the need to expedite features to achieve immediate and substantial ecosystem restoration benefits. In particular, attention was given to ensuring that critical features that could have significant impact to ongoing authorized Federal and State ecosystem restoration programs were considered fully.

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a. Modified Water Deliveries (MWD) Project. The MWD project will help to restore water flow into Northeast Shark River Slough in the ENP. Restoring this hydrologic connection with the remaining Everglades is a critical step to achieving restoration. With the onset of the Restudy, proposed modifications to the MWD project have been identified that, if implemented concurrently with the MWD project, could provide substantial ecosystem restoration benefits in a cost-effective manner. If authorization for these modifications is delayed, the ultimate cost to implement the projects will be much greater and the ability to expedite restoration of the Everglades will be lost. The features of the Comprehensive Plan that have a significant impact on the existing MWD project include:

(1). Phase 1 Decompartmentalization which includes raising Tamiami Trail (to improve overland flow between WCA 3 and ENP) and filling the Miami Canal within WCA 3 (to reduce fragmentation within the remaining Everglades). Further, to offset the functional loss of the Miami Canal as a result of filling it, improvements to the North New River Canal are necessary.

(2). Water Preserve Areas (WPAs) adjacent to WCA 3. Reducing levee seepage through water preserve areas is the most cost effective means of restoring the hydrologic conditions necessary for restoration of the Everglades. This is due to the fact that as water is delivered to Northeast Shark River Slough through WCA 3B, greater amounts of water are lost to tide through levee seepage. This loss substantially reduces the ecosystem restoration benefits, which cannot be overcome by simply providing greater flows. The feature of the WPAs that are included in the initial authorization includes WCA 3A/B levee seepage management, and C-11 and C-9 impoundments. These projects allow for increased water deliveries to ENP and substantially improves water quality of flows to WCA 3.

b. C-111 Project. An element of this project includes a pumping station and canal to enhance water deliveries to the panhandle region of ENP and Florida Bay while reducing the ecologically damaging flood releases to Florida Bay. The C-111N Spreader Canal component of the Comprehensive Plan proposes to increase the pump capacity of the one proposed as part of the C-111 Project and extend the canal to an area known as the Model lands thereby restoring the hydrologic conditions necessary to support that ecosystem. This will further reduce and possibly eliminate the ecologically damaging flood discharges through the C-111 Canal into Florida Bay. If this feature is not authorized, either the C-111 project would require future modifications resulting in ultimately greater costs or the construction of the C-111 project will be delayed until the C-111N Spreader Canal is authorized thereby substantially reducing the overall project benefits.

c. Everglades Agricultural Area Reservoir (Phase 1). This feature is included in the initial authorization for three reasons: (1) lands needed for the project have been acquired by the

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U.S. Department of Interior and the SFWMD; (2) it provides the opportunity to construct the facility in a manner that is mutually beneficial for the Comprehensive Plan and the SFWMD's Everglades Construction Program; and (3) it expedites construction of this facility which provides multiple environmental, water supply, and flood protection benefits. This feature will improve timing of environmental water deliveries to the WCAs including reducing damaging flood releases from the EAA to the WCAs, reduce Lake Okeechobee regulatory releases to estuaries, meet supplemental agricultural irrigation demands, and increases flood protection within the EAA. The construction of this project will enhance the performance of STA 3 and 4 (under construction in the Everglades Construction Project by the SFWMD) allowing for improved water quality conditions in the Everglades.

22. The other projects recommended for initial authorization will provide significant and immediate ecosystem restoration benefits. These projects include:

a. C-44 Reservoir. This feature is located in the Upper East Coast region of south Florida in southern Martin County. The 40,000 acre-feet reservoir will be constructed in close proximity to the C-44 Canal within the C-44 Basin. This component is included in the initial authorization recommendation for several reasons. Preliminary analyses have shown that the majority of benefits to the nature areas will not be realized until most of the major storage features, such as reservoirs, are in place. The authorization and construction of this component are expected to provide significant regional water quality benefits, specifically to the St. Lucie River and Estuary and the Indian River Lagoon, in the form of nutrient reduction. In addition, this project will provide the opportunity to moderate damaging releases to the St. Lucie Estuary from Lake Okeechobee and the surrounding basin. The Indian River Lagoon and the St. Lucie Estuary experienced significant impact as a result of releases made from the Lake during the spring of 1998. In addition, Martin County has shown strong support for this feature passing a resolution in late 1998 to generate a funding source for land acquisition.

b. Site 1 Impoundment. This proposed 15,000 acre-feet above ground reservoir feature is located in southern Palm Beach County adjacent to the Hillsboro Canal and Loxahatchee National Wildlife Refuge and WCA 2A. This feature is included in the initial authorization recommendation for several reasons: (1) a large portion of the land required for the feature have already been acquired by the SFWMD; (2) benefits to the ecosystem will be gained from capturing water that is normally sent to tide and returning it to the system early in the process; and (3) uncertainty in constructing this feature is minimized by postponing the construction of the ASR portion until after the pilot project for this site is completed. The purpose of this feature is to supplement water deliveries to the Hillsboro Canal during dry periods thereby reducing demands on Lake Okeechobee and Loxahatchee National Wildlife Refuge.

c. Taylor Creek / Nubbin Slough Reservoir and Treatment. This feature, which includes an above ground reservoir with a total storage capacity of approximately 50,000 acre-feet and a STA with a capacity of 20,000 acre-feet, is located northeast of Lake Okeechobee in the Taylor Creek/Nubbin Slough Basin. This basin is located in Okeechobee, St. Lucie and Martin Counties. The feature is included in the initial authorization recommendation for three reasons: (1) a portion of the lands needed for the project have been identified by the SFWMD; (2) flows to Lake Okeechobee will be attenuated when lake levels are high or rising; and (3) water quality treatment will be provided for flows from the Taylor Creek / Nubbin Slough basin which currently contribute the highest phosphorus inflow concentrations to Lake Okeechobee.

23. The reporting officers recommend a programmatic authority to help expedite implementation of certain components in the Comprehensive Plan similar to the authorization provided in Section 528 of the Water Resources Development Act of 1996 for Critical Restoration Projects. This programmatic authority would be limited to those components of the Comprehensive Plan that have a total project cost of \$70 million with a maximum Federal cost of \$35 million. This authority would allow 27 components of the Comprehensive Plan, with a total cost of \$490 million as shown in Table 4, to be implemented in an efficient and expedited manner.

Table 4 - Programmatic Authority Projects

Project	Total Cost
Lake Istokpoga Regulation Schedule Modification (OPE)	\$50,000
Loxahatchee National Wildlife Refuge Internal Canal Structures	\$7,669,000
Lake Park Restoration (OPE)	\$5,166,000
Lake Trafford Restoration (OPE) 1/	\$15,408,000
Southern CREW Project (OPE) 1/	\$3,435,000
Southern Golden Gate Estates (OPE) 1/	\$45,654,000
C-4 Divide Structures (OPE) 1/	\$2,330,000
Florida Keys Tidal Restoration (OPE)	\$1,251,000
Lake Okeechobee Tributary Sediment Dredging & Phosphorus Removal (OPE)	\$4,700,000
Henderson Creek / Belle Meade Restoration (OPE)	\$4,806,000
Winsburg Farms Wetland Restoration (OPE)	\$14,140,000
Restoration of Pineland & Hardwood Hammocks in C-111 Basin (OPE)	\$600,000

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Project	Total Cost
Pal-Mar and J.W. Corbett Wildlife Management Area Hydropattern Restoration (OPE)	\$10,500,000
Acme Basin B Discharge (OPE)	\$20,100,000
Protect and Enhance Existing Wetland Systems along Loxahatchee National Wildlife Refuge (OPE)	\$52,722,000
Dade-Broward Levee / Pennsuco Wetlands	\$18,778,000
C-17 Backpumping and Treatment	\$20,190,000
C-51 Backpumping and Treatment	\$32,632,000
Miccosukee Water Management Plan (OPE)	\$24,459,000
Additional S-345 Structures	\$48,450,000
Modify G-404 Pump Station	\$10,138,000
Flow to Northwest and Central Water Conservation Area 3A	\$20,739,000
Broward County Secondary Canal System	\$12,898,000
Lake Okeechobee Watershed Water Quality Treatment Facilities 1/	\$62,247,000
Lake Worth Lagoon Restoration (OPE)	\$2,300,000
Melalucea Eradication and other Exotic Plants (OPE) 1/	\$5,772,000
Big Cypress / L-28 Interceptor Modifications	\$42,751,000
TOTAL	\$489,885,000

KEY: OPE - Other Project Element

1/ - Project or portion of project currently being implemented under the Critical Projects Program (S. 528 - WRDA 1996)

24. The recommended components of the Comprehensive Plan that are not initially authorized or eligible under the proposed programmatic authority will be submitted in PIRs to the Congress for construction authorization under subsequent Water Resources Development Acts. Based on the current Plan schedule, components will have Project Implementation Reports completed and ready to submit to Congress from 2002 through 2014 as shown in Table 5 below. These project schedules may be modified to expedite construction completion based on provisions in paragraph 31 of this report or changes in light of new information.

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Table 5 - Projects Beyond WRDA 2000

Project	Costs	Potential WRDA	Estimated Construction Period
L-31N Improvements for Seepage Management and S-356 Structures 1/	\$184,218,000	2002	10/05-10/10
Bird Drive Recharge Area	\$124,083,000	2002	12/06-12/13
C-23/C-24 Storage Reservoirs	\$369,316,000	2002	6/05-5/09
C-25/Northfork and Southfork Storage Reservoirs	\$340,907,000	2004	7/06-5/10
Seminole Big Cypress Water Conservation Plan (East & West) 2/	\$75,288,000	2004	6/05-6/08
C-43 Basin Storage Reservoir & ASR	\$440,195,000	2004	4/05-3/12
C-51 Regional Groundwater ASR	\$132,336,000	2004	9/08-9/13
Palm Beach County Agricultural Reserve Reservoir and ASR	\$124,099,000	2004	8/09-8/13
Water Preserve Area / L-8 Basin 1/	\$415,182,000	2006	9/07-9/14
Site 1 ASR	\$92,844,000	2006	10/10-10/14
Biscayne Bay Coastal Wetlands 1/	\$299,583,000	2006	5/12-5/18
Caloosahatchee Backpumping with Stormwater Treatment	\$82,895,000	2008	9/11-9/15
Lake Okeechobee ASR	\$1,097,312,000	2008	7/10-6/20
Everglades Agricultural Area Storage - Phase 2	\$203,240,000	2010	7/12-12/15
North of Lake Okeechobee Storage Reservoir	\$284,854,000	2010	9/11-9/15
Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement	\$59,204,000	2012	1/15-1/19
Central Lake Belt Storage Area 1/	\$489,861,000	2012	2/15-12/36
North Lake Belt Storage Area	\$516,061,000	2012	2/16-6/36
Diverting Water Conservation Area 2 and 3 Flows to Central Lake Belt Storage 1/	\$79,657,000	2014	6/16-6/20
West Miami-Dade County Reuse	\$437,237,000	2014	6/16-6/20

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Project	Costs	Potential WRDA	Estimated Construction Period
South Miami-Dade County Reuse	\$363,024,000	2014	6/16-6/20
TOTAL	\$6,211,396,000		

1/ - For determining projects for future WRDA authorization, certain components were combined to form functional component packages for construction features that were clearly dependent.

2/ - Portion of this project is currently being implemented under the Critical Projects Program (S. 528 WRDA 1996)

25. There are several components that do not require additional congressional authorization action to implement under the Comprehensive Plan. These projects are shown below in Table 6.

Table 6 - Projects Not Requiring Congressional Action

Project	Explanation
Lake Okeechobee Regulation Schedule	Operational change only
Environmental Water Supply Deliveries to the Caloosahatchee Estuary	Operational change only
Environmental Water Supply Deliveries to the St. Lucie Estuary	Operational change only
Everglades Rain Driver Operations	Operational change only
Change Coastal Wellfield Operations	Operational change only
Modified Holey Land Wildlife Management Area Operation Plan	Implement under existing state process
Modified Rotenburger Wildlife Management Area Operation Plan	Implement under existing state process
Lower East Coast Utility Water Conservation	Implement under existing state process
Operational Modifications to Southern Portion of L-31N and C-111	Operation change only

26. Three feasibility studies - the Florida Bay and Florida Keys Feasibility Studies, Southwest Florida Feasibility Study, and Comprehensive Integrated Water Quality Plan have been identified for initiation by the reporting officers. These studies described below will be

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conducted under the authority of the WRDA 1996 that allows for the continuation of studies and analyses that are necessary to further the Comprehensive Plan.

a. Florida Bay and Florida Keys Feasibility Study. The Restudy recommends a feasibility study to comprehensively evaluate Florida Bay and the Keys and to determine the types of modifications needed to successfully restore water quality and ecological conditions of the region. Hydrodynamic and water quality models currently under development for Florida Bay will provide the tools necessary for evaluation of the problem in a holistic manner.

b. Southwest Florida Feasibility Study. The reporting officers indicate that there are additional water resources problems and opportunities in southwest Florida that require studies that are beyond the scope of the Comprehensive Plan. The proposed Southwest Florida Feasibility Study would include Collier, Lee, Charlotte, Glades, and Hendry Counties; and provide a framework to address the health of the aquatic ecosystems; water flows; water quality (including appropriate pollution reduction targets); water supply, flood protection, fish and wildlife, and biological diversity and natural habitats.

c. Comprehensive Integrated Water Quality Plan. Degradation of water quality throughout the Restudy project area is extensive, particularly in agricultural and urban coastal regions. In 1998, the Florida Department of Environmental Protection listed approximately 160 use-impaired water bodies in south Florida. Several water quality restoration programs are underway, such as the Florida Keys National Marine Sanctuary Water Quality Protection Program. However, there is currently no comprehensive plan to achieve water quality restoration in south Florida. The Comprehensive Plan includes numerous water quality improvement features that when fully implemented, will go a long way toward meeting water quality objectives for many watersheds within south Florida. The Plan proposes construction of more than 36,000 acres of treatment wetlands (in addition to the 44,000 acres already under construction as a result of Florida's 1994 Everglades Forever Act) to treat polluted water before discharge to the Everglades. In an effort to address other system-wide water quality issues, the Plan recommends the development of a Comprehensive Integrated Water Quality Plan. That plan will lead to recommendations for water quality remediation programs and the integration of water quality restoration targets into future design, construction, and operation activities during project implementation. The Plan will identify pollution-impaired water bodies; quantify types and sources of pollution; establish interim and final pollution load reduction targets; and recommend development of potential source-reduction programs, baseline and future water quality monitoring programs, and water quality treatment facilities.

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27. The reporting officers recommend that the Comprehensive Plan be approved as a framework and guide for modifications to the C&SF Project. Based on October 1999 prices, the estimated first cost of the Comprehensive Plan is \$7.8 billion to be cost shared 50-50 with the non-Federal sponsor. The cost apportionment of the Comprehensive Plan is shown in Table 7 below.

Table 7 - Cost Apportionment Comprehensive Plan

	Total	Federal	Non-Federal
Construction	\$5,500,000,000	\$3,900,000,000	\$1,600,000,000
LERRD	\$2,300,000,000	\$0	\$2,300,000,000
TOTAL	\$7,800,000,000	\$3,900,000,000	\$3,900,000,000

28. The estimated annual operation and maintenance (O&M) costs for the construction features of the recommended Comprehensive Plan are \$172 million per year. The cost apportionment of Plan components recommended for initial construction authorization is shown in Table 8 below and the annual O&M for these features is estimated at \$20,224,000.

Table 8 - Cost Apportionment Initial Construction Authorization

	Total	Federal	Non-Federal
Construction	\$741,525,000	\$598,958,500	\$142,566,500
LERRD	\$456,392,000	\$0	\$456,392,000
Total	\$1,197,917,000	\$598,958,500	\$598,958,500
Rounded	\$1,198,000,000	\$599,000,000	\$599,000,000

29. The current estimated cost of the recommended Comprehensive Plan is based on the best available information. Appropriate contingency factors were used in developing the cost estimates to reflect the uncertainties inherent at this stage of the project development. The reporting officers anticipate that the cost of the plan will be modified in the future as pilot projects and individual project implementation reports are completed. As more site-specific analysis is completed, the contingency factors will be revised to reflect a greater level of

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certainty. During detailed design, opportunities will be sought that reduce the number of control structures as well as more passive control structures wherever feasible, which could result in reduced construction and operation and maintenance costs.

30. Washington level review indicates that the proposed plan is technically sound, economically justified, and environmentally and socially acceptable. The plan conforms to essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies and complies with other administration and legislative policies and guidelines. Also, the views of interested parties, including Federal, State, and local agencies, have been considered.

31. I generally concur in the findings, conclusions, and recommendation of the reporting officers and further commitments on the Restudy and Comprehensive Plan as presented below:

a. The Corps proposes to deliver additional water (approximately 245,000 acre-feet) to ENP and Biscayne Bay, either by capturing additional runoff from urban areas or by some other means. The Corps commits to completing the additional analysis that is necessary to refine the Comprehensive Plan to provide for delivery of this water. A PIR to determine how this additional flow will be captured and delivered will be submitted to Congress for authorization in 2004. The report will consider fully water quality issues that must be addressed before this water can be discharged into natural areas. In addition, this PIR will include component YY/ZZ (diverting WCA 2 and 3 flows to Central Lake Belt);

b. The Corps is committed to solving the remaining operational problems in the WCAs associated with the Comprehensive Plan;

c. The Corps commits that there will be no reduction of flows to Biscayne Bay below the 1995 base unless there is a consensus conclusion among scientists, including scientists from Biscayne Bay National Park, that an alternative flow pattern is beneficial to the Bay;

d. Where control structures are required, the Corps will establish a preference for passive control structures. In those cases where structural controls within natural areas are unavoidable for water management, the detailed design will include passive controls to the maximum extent practicable. The implementation plan will commit to limiting the use of active features, such as pumps and gates, to those situations where passive controls are not adequate;

e. For the first phase of storage in the EAA, the Corps will make maximum use of the acreage that will be made available for storage as a result of the lands associated with the Talisman acquisition and related exchanges and purchases with other EAA landowners;

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f. The Corps will investigate the potential of phasing the North of Lake Okeechobee storage area in order to accelerate implementation of this storage area;

g. The Corps will work with appropriate entities, including Miami-Dade County, the rock mining industry, and the Lake Belt Committee, to identify innovative ways to expedite implementation of the Central Lake Belt storage area;

h. The Corps, the Everglades National Park and the SFWMD will convene a team to ensure that both on-going projects (e.g., Modified Water Deliveries and C-111 projects) and Comprehensive Plan features are coordinated fully and will proceed in the most efficient and expeditious manner;

i. The Corps will work to expedite as necessary the second phase of decompartmentalization. This may include authorizing this feature under the programmatic authority or dividing the second phase of decompartmentalization into additional phases. In addition, if necessary the Corps will seek earlier authorization of these components. Changes to the Modified Water Deliveries Project that improve connectivity will be considered as part of the design effort currently underway;

j. The Corps, along with the Department of the Interior and the SFWMD should set priorities on land acquisition that is necessary to support Comprehensive Plan project features. The Corps will work with these agencies to expedite such acquisition where possible and necessary to prevent the foreclosure of options due to development. For example, acquisition of land associated with the Biscayne Bay Coastal Wetlands feature should be considered a priority. In addition, construction of this project feature should be completed by 2013;

k. The Project Implementation Report for component G-Phase 2 (phase 2 of EAA storage) should be initiated in September 2002 after completion of the Phase 1 PIR;

l. The primary and overarching purpose of the Comprehensive Plan is to restore the south Florida ecosystem. Accordingly, to ensure the successful implementation of the Comprehensive Plan, the Corps will work with the Department of the Interior, the Environmental Protection Agency, and other Federal agencies and the State of Florida to develop the necessary assurances to ensure that the natural system benefits are achieved and maintained. The assurances will address the proper quantity, quality, timing, and distribution of water for the natural system. Such assurances will not, to the extent practicable, impact other existing legal water uses and flood protection. The recommended Comprehensive Plan does not address the creation or the restriction of new legal entitlements to water supplies or flood control benefits.

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Consistent with the principle of adaptive assessment, the Corps will proceed with, and modify as appropriate, the design, scheduling, and operation of project components as necessary to achieve hydrologic and ecological benefits predicted by the Comprehensive Plan. In particular, operational rules are critical to maintaining the benefits of ecosystem restoration envisioned in the Comprehensive Plan. We will monitor and periodically revise our rules regarding the operation of the Central and Southern Florida Project to ensure that the hydrologic and ecological benefits anticipated in the Plan are maintained to the maximum extent possible. These rules will ensure that the important ecosystem benefits are maintained and preserved for so long as the project remains authorized. This recurring evaluation of operational rules is appropriate considering that the restoration project is justified on the basis of environmental benefits; and

m. The Corps will continue to improve both the Comprehensive Plan and the implementation plan to achieve the highest levels of restoration.

32. Accordingly, I recommend implementation of the Comprehensive Plan, generally in accordance with the reporting officers' recommended plan, with such modifications as in the discretion of the Chief of Engineers may be advisable, and subject to applicable cost-sharing and financing requirements. I further recommend that operation and maintenance of the project features be a non-Federal responsibility. My recommendation is made with the provision that, prior to implementation of the recommended improvements, the non-Federal sponsor, the SFWMD, shall enter into a binding agreement with the Federal Government to comply with the following requirements:

(a). Provide 50 percent of the total project costs as further specified below:

1. Enter into an agreement(s), which provides, prior to construction, 25 percent of preconstruction engineering and design (PED) costs;

2. Provide, during construction, any additional funds needed to cover the non-Federal share of PED costs;

3. 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, repair, replacement, and rehabilitation (OMRR&R) of the project.

4. Provide or pay to the Government the cost of providing all retaining dikes, waste weirs, bulkheads, and embankments, including all monitoring features and stilling basins, that

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may be required at any dredged or excavated material disposal areas required for the construction and OMRR&R of the project; and

5. Provide, during construction, any additional costs as necessary to make its total contribution equal to 50 percent of total project costs.

(b). Grant the Government a right to enter, at reasonable times and in a reasonable manner, upon land which the local sponsor owns or controls for access to the project for the purpose of inspection, and, if necessary, for the purpose of completing OMRR&R of the project.

(c). For so long as the project remains authorized assume responsibility for the costs for OMRR&R of 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 by the Government in the OMRR&R manual and any subsequent amendments thereto.

(d). Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, and Section 103 of the Water Resources Development Act 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.

(e). Hold and save the Government free from all damages arising for the construction, operation, maintenance, repair, replacement, and rehabilitation 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.

(f). 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.

(g). 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 required under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 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

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that the Government determines to be subject to the navigation servitude without prior specific written direction by the Government.

(h). Assume complete financial responsibility for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Government determines necessary for the construction, operation, or maintenance of the project.

(i). To the maximum extent possible, operate, maintain, repair, replace, and rehabilitate the project in a manner that will not cause liability to arise under CERCLA.

(j). Participate in and comply with applicable flood plain management and flood plain insurance programs in accordance with Section 402 of Public Law 99-662, as amended.

(k). Not less than once a year, inform affected interests of the limitations of the protection afforded by the project.

(l). Publicize flood plain information in the area concerned and provide this information to zoning and other regulatory agencies for their use in preventing unwise future development in the flood plain, and in adopting regulations as may be necessary to prevent unwise future development and to ensure compatibility with protection levels provided by the project.

(m). As between the Federal Government and the non-Federal sponsor, the non-Federal sponsor shall be considered the operator of the project for the purpose of CERCLA liability. To the maximum extent practicable, operate, maintain, repair, replace, and rehabilitate the project in a manner that will not cause liability to arise under CERCLA.

(n). Prescribe and enforce regulations to prevent obstruction of or encroachment on the Project that would reduce the level of protection it affords or that would hinder operation and maintenance of the Project.

(o). 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.

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(p). Comply with all applicable Federal and State laws and regulations, including Section 601 of the Civil Rights Act of 1964, Public Law 88-352, and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army."

(q). Provide 50 percent of that portion of total cultural resource preservation mitigation and data recovery costs attributable to the project that are excess of one percent of the total amount authorization to be appropriated for the project.

(r). Do not use Federal funds to meet the non-Federal sponsor's share of total project costs unless the Federal granting agencies verify in writing that the expenditure of such funds is authorized.

33. The recommendation contained herein reflects the information available at this time and current departmental policies governing formulation of individual projects. It does not reflect program and budgeting priorities inherent in the formulation of a national civil works construction program nor 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 State; the sponsor, the SFWMD; interested Federal agencies; and other parties will be advised of any modifications and will be afforded an opportunity to comment further.



JOE N. BALLARD

Lieutenant General, U.S. Army
Chief of Engineers