HOUSE OF REPRESENTATIVES STAFF ANALYSIS

BILL #: HM 607 Comprehensive Everglades Restoration Plan
SPONSOR(S): Harrell and others
TIED BILLS: None **IDEN./SIM. BILLS:** None

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR or BUDGET/POLICY CHIEF
1) Local & Federal Affairs Committee	15 Y, 1 N	Dougherty	Rojas
2) State Affairs Committee	15 Y, 1 N	Renner	Camechis

SUMMARY ANALYSIS

Florida has been involved in Everglades restoration efforts since 1948 when the Legislature enacted the Central and South Florida Project (C&SF Project), which provides for flood control, water level control, water supply, conservation, prevention of salt water intrusion, and preservation of fish and wildlife. However, the C&SF Project had unforeseen adverse effects on the Everglades ecosystems. Due to those adverse effects, the C&SF Project is now being modified under the Comprehensive Everglades Restoration Plan (CERP).

CERP provides a framework to restore, protect, and preserve water resources by phased projects implemented through an equal state-federal partnership. CERP covers 16 counties over an 18,000-square-mile area and centers on an update of the C&SF Project also known as the Restudy, includes more than 60 elements, will take more than 30 years to construct, and will cost more than $10 billion dollars. Each phase requires federal authorization and funding before it may begin.

All previously authorized CERP projects are underway and Florida is prepared to start the next phase. However, congressional authorization is required before commencement of additional projects.

This memorial urges Congress to enact before adjournment a Water Resources Development Act authorizing the next phase of Everglades restoration, which includes the Biscayne Bay Coastal Wetlands, the C-111 Spreader Canal, the Broward County Water Preserve Area, the Caloosahatchee River C-43 West Basin Storage Reservoir, and the Central Everglades Planning Project.

Copies of the memorial will be provided to the President of the United States, the President of the United States Senate, the Speaker of the United States House of Representatives, and each member of the Florida delegation to the United States Congress.

A memorial is a measure addressed to an executive agency or another legislative body, usually Congress, which expresses the consensus of the Florida Legislature or urges that certain action be taken on a matter within the jurisdiction of the agency or body to which it is addressed. When both houses adopt the measure, the memorial is signed by the legislative officers and transmitted to the Secretary of State for presentation to the addressee. A memorial is not subject to the approval or veto powers of the Governor, is not subject to constitutional title requirements, and does not have the effect of law.

This memorial does not have a direct fiscal impact on state or local governments.

FULL ANALYSIS

I. SUBSTANTIVE ANALYSIS

A. EFFECT OF PROPOSED CHANGES:

Present Situation

History of South Florida Water Resources Development[1]

Early Drainage Efforts

In 1847 U.S. Senator J.D. Westcott made the first known proposal to drain the overflowed lands of the lower peninsula. A report to the United States Senate in June 1848 asserted the Everglades could be reclaimed by a sensible system of canaling and by deepening the various streams that flowed both east and west to the coasts. It was believed that drainage would insure the growth of a new agricultural empire in south Florida.

Congress passed the "Swamp and Overflowed Lands Act of 1850", which conveyed swamp and overflowed lands in Florida to state ownership. To plan for the development of this huge area, the State Legislature created the Board of Internal Improvements in 1851 to manage the Internal Improvement Fund. However, little progress was made and the Fund fell into debt during the Civil War. Private investment in 1881 began the first drainage projects. The first project was to give Lake Okeechobee an outlet to the Gulf through the Caloosahatchee River. Other large-scale, central and southern Florida drainage projects followed, major parts of which are still functioning today. These projects did not accomplish all that was expected and, in some cases, led to overdrainage.

In 1905, the newly-created Board of Drainage Commissioners received the lands acquired by the Swamp and Overflowed Lands Act from the Legislature. This board was vested with the authority "to establish a system of canals, levees, drains, dikes, and reservoirs...to drain and reclaim the swamp and overflowed lands within the State of Florida." Accordingly, the Trustees of the Internal Improvement Fund and the Drainage Commissioners purchased and operated dredges.[2] The system of canals and locks provided the groundwork for draining the northern and eastern parts of the Everglades. Although 440 miles of canals had been completed and $18,000,000 expended by 1927, only the Caloosahatchee and St. Lucie Canals provided satisfactory outlets from Lake Okeechobee to the sea. In addition, efforts were so widely scattered that, on the whole, there was little return for the money spent.

Disasters Exacerbated by Drainage Efforts

It became apparent that canals alone did not afford sufficient protection from overflow during unusual weather events. The hurricanes of 1926[3] and 1928[4] created wind tides on Lake Okeechobee, which overflowed the surrounding areas resulting in great financial loss and approximately 2,600 deaths. These hurricanes marked the start of the federal interest in water control through the U.S. Army Corps of Engineers (Corps).

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[1] Development of the Central & South Florida (C&SF) Project, The Everglades Plan, available at http://www.evergladesplan.org/about/restudy_csf_devel.aspx, citing Central and Southern Florida Flood Control Project, Eight Years of Progress, 1948-57 Report, published by the Central and Southern Florida Flood Control District, 1957.

[2] Between 1906 and 1913, 225.4 miles of drainage canals were dug, including the Miami, North New River, and South New River Canals by the Everglades Drainage District. During the period 1913 to 1927, six large drainage canals and numerous smaller canals, totaling 440 miles; 47 miles of levees; and 16 locks and dams were constructed. The five major canals originated at Lake Okeechobee and flowed easterly toward the Atlantic.

[3] The hurricane which struck Miami and the Lake Okeechobee region in 1926 caused over 200 deaths and great financial loss.

[4] The hurricane of 1928 swept in through the Palm Beach area toward the Lake. Wind-driven water of Lake Okeechobee, augmented by the torrential rains, overflowed the lake shore and drowned approximately 2,400 people near Moore Haven, in addition to destroying a vast amount of property.

To prevent a recurrence of these disasters, the Legislature created the Okeechobee Flood Control District in 1929, which was authorized to cooperate with the Corps in the following flood control undertakings:

- Floodways;
- Channels;
- Control gates;
- Major levees along Lake Okeechobee's shores; and
- The Herbert Hoover Dike.

During 15 years of successive, extreme dry spells, it became apparent that water conservation was a necessary function of any drainage plan. The dry years resulted in lowered groundwater levels; the threat of serious saltwater intrusion into the municipal wells of coastal cities; and drying, shrinking, and burning of land which regularly flooded in the past. Structures designed to drain certain areas while protecting them in time of flood, were also depriving them of necessary moisture during other periods. There was an important relationship between the areas around Lake Okeechobee and the other water resources of the region which had been overlooked in earlier efforts to drain the interior.

In 1947, a massive flood ended the drought with 90 percent of southeastern Florida, from Orlando to the Keys, underwater. The total economic damage of this disaster was estimated by the Corps at more than $59,000,000. This flood, coupled with the experiences of the drought and saltwater intrusion, made it imperative that immediate corrective action be started to prevent further loss of life and property damage and to conserve water for periods of drought.

Policy Reversal: The Need for a Conservation Plan

Concerned with flood control and water conservation, the Corps concluded that the problems were too large and complex for the capabilities of either the state or local agencies acting alone. A comprehensive plan for flood control and water conservation – which would encompass the entire area, satisfy the agencies' major needs, and be beneficial to the largest portion of the area – clearly required federal and local cooperation.

The Central and Southern Florida Project (C&SF Project)

Congress approved the C&SF Project as part of the Flood Control Act of 1948. The C&SF Project provides for flood control, water level control, water supply, water conservation, prevention of salt water intrusion, and preservation of fish and wildlife. The primary system includes about 1,000 miles of levees, 720 miles of canals, and almost 200 water control structures.

The following year, the Legislature formed the Central and Southern Florida Flood Control District, later to become the South Florida Water Management District (SFWMD), to act as a single local agency to cooperate with the federal government.

C&SF Project Authorizing Acts

The first C&SF Project phase was authorized by the Flood Control Act of June 30, 1948, for the purposes of flood control, water level control, water conservation, prevention of salt water intrusion, and preservation of fish and wildlife.[5] In June 1970, Congress authorized appropriations for the Corps to

[5] The first phase of the C&SF Project consisted of flood protection works for the agricultural development south of Lake Okeechobee and to the highly developed southeast coast. The second phase, consisting of all remaining works of the original Comprehensive Plan, was authorized by the Flood Control Act of September 3, 1954. Subsequent improvements include the following: Hendry County and Nicodemus Slough (Flood Control Acts of July 3, 1958, and July 14, 1960, respectively); Boggy Creek, Cutler Drain Area, Shingle Creek, South Dade County, and West Palm Beach Canal (Flood Control Act of October 23, 1962); Southwest Dade County and Hendry County modification (Flood Control Act of October 27, 1965); increased water storage and conservation, improved distribution, recreation as a project purpose, Martin County flood control, and increased delivery of water to Everglades National Park (Flood Control Act of 1968).

accelerate canal and pumping station construction.[6] Section 104 of the Everglades National Park Protection and Expansion Act of 1989 directed the Corps "to construct modifications to the Central and Southern Florida Project to improve water deliveries into the park and … to the extent practicable, take steps to restore the natural hydrological conditions within the park."[7] The Water Resources Development Act of 1992 authorized modifications to the C&SF Project for ecosystem restoration of the Kissimmee River.

These authorizing acts require that local interests provide all lands, easements, and rights-of-way; pay for relocations of highways (with certain exceptions), highway bridges, and public utilities which may be required for construction of project works; hold and save the United States free from damages resulting from construction and operation of the works; maintain and operate all works (except certain major regulating structures) after completion and make a cash contribution for each part of the work prior to its initiation.

Authorized project facilities include 30 pumping stations, 212 control and diversion structures, 990 miles of levees, 978 miles of canals, 25 navigation locks, and 56 railroad relocations (bridges). Construction was begun in January 1950.

C&SF Project Outcome

The C&SF Project has performed its authorized functions since 1948 and continues to provide water supply, flood protection, water management, and other benefits to south Florida. The current C&SF Project includes 1,000 miles of canals, 720 miles of levees, and several hundred water control structures. However, the project has had unintended adverse effects on the diverse environments of the south Florida ecosystems, including the Everglades, Florida Bay, St. Lucie River, Indian River Lagoon, and the Caloosahatchee River and Estuary.

Due to these adverse effects the C&SF Project is now being modified under the Comprehensive Everglades Restoration Plan.

The Comprehensive Everglades Restoration Plan (CERP)

CERP provides a framework and guide to restore, protect, and preserve the water resources of central and southern Florida, including the Everglades. The federal Water Resources Development Act (WRDA) of 2000 approved CERP, which was developed in partnership with local, regional, state, federal, and tribal leaders, as well as numerous other stakeholders. The plan is the world's largest ecosystem restoration effort, including more than 60 major components and a 30-year construction timeline. The plan encompasses 16 counties over an 18,000-square-mile area and centers on an update of the C&SF Project, known as the Restudy.

The goal of CERP is to capture unused, fresh water flowing to the Atlantic Ocean and the Gulf of Mexico and redirect it to areas that need it most. The majority of the water is devoted to environmental restoration. The remaining water will benefit cities and farmers by enhancing water supplies for the south Florida economy. These goals are divided into various phases containing discreet, defined projects. Each phase requires authorization and funding before it may begin.

CERP is implemented through an equal state-federal partnership. In 2000, the Legislature passed the Everglades Restoration Investment Act to fund the state's 50 percent of its cost-share through The

[6] Section 2 of Public Law 91-282. Specifically, this funded "construction of borrow canal L-70, canal C-308, canal C-119W, and pumping station S-326, together with such other works in the plan of improvement as the Director of the National Park Service and the Chief of Engineers agree are necessary to meet the water requirements of the Everglades National Park: Provided further, That as soon as practicable and in any event upon completion of the works specified in the preceding proviso, delivery of water from the central and southern Florida project to the Everglades National Park shall be not less than 315,000 acre-feet annually, prorated according to the monthly schedule set forth in the National Park Service letter of October 20, 1967, to the Office of the Chief of Engineers, or 16.5 per centum of total deliveries from the project for all purposes including the park, whichever is less."

[7] Public Law 101-229.

Save Our Everglades Trust Fund. The SFWMD, as local sponsor, is required to match state appropriations. To date, Florida has invested over $2 billion toward implementing the $13.5 billion plan.

The next phase of CERP includes the Broward County Water Preserve Area,[8] the C-111 Spreader Canal,[9] the Caloosahatchee River C-43 West Basin Storage Reservoir,[10] the Biscayne Bay Coastal Wetlands,[11] and the Central Everglades Planning Project.[12]

Water Resources Development Acts (WRDA)

Water Resources Development Acts refer to federal public laws that deal with various aspects of water resources, including environmental, structural, navigational, and flood protection. WRDA often authorize the Corps to study water resource problems, construct projects, and make major modifications to projects. The provisions and contents of WRDA legislation are cumulative so that new legislation does not supersede or replace previous legislation. Instead, new WRDA add to the original language and often amend provisions of previous acts.

A WRDA is the legislative vehicle that authorizes federal agencies to implement CERP. While Congress has authorized CERP in general, the implementing regulations require that a Project Implementation Report (PIR) be developed for each project and submitted to Congress for project-specific authorization.

WRDA Authorizing CERP Projects

All CERP projects authorized by the last WRDA, which passed in 2007, are under construction; therefore, implementation of the next CERP phase requires congressional authorization by another WRDA.

WRDA legislation is currently under consideration in Congress. The U.S. Senate passed S. 601 in May 2013 and the U.S. House passed H.R. 3080 in October 2013. The legislation has been in conference committee since November 2013 to reconcile the Senate and House Bills. A reconciled version of the bill is expected early 2014.

Currently, four projects of the next phase are eligible for authorization: the Broward County Water Preserve Area, the C-111 Spreader Canal, the Caloosahatchee River C-43 West Basin Storage Reservoir, and the Biscayne Bay Coastal Wetlands. The fifth, the Central Everglades Planning Project, may also be eligible if contingency language is added in conference that allows additional projects to be authorized.

[8] For more information, see http://www.evergladesplan.org/pm/projects/proj_45_broward_wpa.aspx.
[9] For more information, see http://www.evergladesplan.org/pm/projects/proj_29_c111.aspx.
[10] For more information, see http://www.evergladesplan.org/pm/projects/proj_04_c43_basin_1.aspx.
[11] For more information, see http://www.evergladesplan.org/pm/projects/proj_28_biscayne_bay.aspx.
[12] For more information, see http://www.evergladesplan.org/pm/projects/proj_51_cepp.aspx.

Issues in the Indian River Lagoon, St. Lucie River, and Caloosahatchee River and Estuary

Estuaries are partially enclosed bodies of water along coastlines at the interface between oceans and freshwater sources, such as rivers and streams. Estuaries are tidally influenced, but protected from ocean waves, winds, and storms by land.[13]

The exchange of salt and freshwater in an estuary make it a unique and productive community of plants and animals that have adapted to living in brackish waters.[14] Estuarine organisms have unique salt level tolerances and when the salinity of the water is altered, the growth, reproduction, and survival of the organisms may be threatened.[15]

The large releases of water from Lake Okeechobee, as well as significant basin runoff during periods of heavy rain, introduce massive amounts of fresh water into both the Caloosahatchee and Indian River Lagoon Estuaries, lowering salinity levels and significantly altering the water chemistry, causing harm to native species. The freshwater releases also introduce a tremendous amount of silt into the systems, affecting the growth of plants by inhibiting photosynthesis. During drought conditions low discharges lead to elevated salinity levels, resulting in further harm to the ecosystem.[16]

Estuarine ecosystems depend on the balanced cycling of nutrients, particularly nitrogen and phosphorus. Both plants and animals require nutrients for growth. However, excessive nutrients in estuarine environments can lead to significant degradation.[17] The estuaries receive nutrients from point sources such as industrial activities and wastewater treatment facilities, as well as from non-point sources, such as from septic systems and unmanaged stormwater and agricultural runoff.

Areas with high concentrations of septic systems result in elevated levels of nitrates and bacteria in the surrounding water bodies.[18] Stormwater runoff introduces pollutants into the watershed when water runs off of impervious surfaces such as roads and parking lots. Stormwater treatment systems capture and treat some runoff, but they are incapable of capturing all the water that flows into surface waters. Consequently, much of the local stormwater runoff drains directly into surface water bodies without treatment. In addition, excessive and improper application of fertilizer leads to increased nutrient concentrations in surrounding water bodies.[19]

The input of excess nitrogen and phosphorus into the estuaries promotes algae growth, including toxic blue-green algae, which depletes oxygen concentrations and is detrimental to humans and wildlife.[20]

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[13] U.S. Environmental Protection Agency, *Basic Information about Estuaries,* http://water.epa.gov/type/oceb/nep/about.cfm. *See also* The Senate Select Committee on Indian River Lagoon and Lake Okeechobee Basin Final Report, November 8, 2013.

[14] *Id.*

[15] National Oceanic and Atmospheric Administration, *Ocean Service Education – Salinity, http://oceanservice.noaa.gov/education/kits/estuaries/media/supp_estuar10c_salinity.html. See also* The Senate Select Committee on Indian River Lagoon and Lake Okeechobee Basin Final Report, November 8, 2013. Available at www.flsenate.gov/usercontent/topics/irllob/finalreport.pdf.

[16] *See* The Senate Select Committee on Indian River Lagoon and Lake Okeechobee Basin Final Report, November 8, 2013. Available at www.flsenate.gov/usercontent/topics/irllob/finalreport.pdf.

[17] St. Johns River Water Management District, *Indian River Lagoon, An Introduction to a Natural Treasure, http://www.sjrwmd.com/itsyourlagoon/pdfs/IRL_Natural_Treasure_book.pdf. See also* The Senate Select Committee on Indian River Lagoon and Lake Okeechobee Basin Final Report, November 8, 2013. Available at www.flsenate.gov/usercontent/topics/irllob/finalreport.pdf.

[18] South Florida Water Management District, *St. Lucie River Watershed Protection Plan Update,* App. 10-1-1 (2012), *available at http://www.sfwmd.gov/portal/page/portal/xrepository/sfwmd_repository_pdf/slrwpp_2012update_sfer_voli_app10_1.pdf. See also* The Senate Select Committee on Indian River Lagoon and Lake Okeechobee Basin Final Report, November 8, 2013. Available at www.flsenate.gov/usercontent/topics/irllob/finalreport.pdf.

[19] *Id.*

[20] St. Johns River Water Management District, *Blue-Green Algae (Cyanobacteria) in Florida Waters, http://www.sjrwmd.com/algae/bluegreen.html. See also* The Senate Select Committee on Indian River Lagoon and Lake Okeechobee Basin Final Report, November 8, 2013. Available at www.flsenate.gov/usercontent/topics/irllob/finalreport.pdf.

The increased algae blooms also inhibit sunlight from reaching aquatic vegetation that is crucial to the health of the ecosystem.[21]

In early 2011, two massive phytoplankton blooms occurred along the entire Indian River Lagoon and resulted in extensive loss of seagrass throughout much of the area. The phytoplankton bloom exceeded any other documented bloom in terms of size, intensity, duration, and magnitude of seagrass loss. By early 2013, a significant number of dolphins, manatees, and pelican deaths were reported in the lagoon. At the same time, South Florida experienced an increase in rainfall, leading to an increase in nutrient pollution, stormwater runoff, and the quantity of water released into the canal systems.

There is no single factor that has caused the decline in the health of the ecosystems along the east and west coasts; however, a significant contributing factor has been the large volume of nutrient rich water being discharged from Lake Okeechobee into the Indian River Lagoon and Caloosahatchee Estuary.[22]

Current and Planned Water Projects Affecting the Area

The following are CERP projects waiting for federal authorization and are needed to restore and protect the Indian River Lagoon, St. Lucie River, and Caloosahatchee River and Estuary:

- The C-111 spreader canal project, which will increase sheetflow into the Everglades and reduce the amount of water from Lake Okeechobee that must be discharged into the St. Lucie and Caloosahatchee Rivers.[23]
- The Caloosahatchee (C-43) West Basin Storage Reservoir project which will improve timing, quantity, and quality of freshwater flows to the river and estuary.[24]
- The Central Everglades Planning Project, which will also allow more water to be directed south into the Everglades instead of east and west into the St. Lucie and Caloosahatchee Rivers.[25]

Effect of Proposed Changes

This memorial urges Congress to enact before adjournment a Water Resources Development Act authorizing the next phase of Everglades restoration, which includes the Biscayne Bay Coastal Wetlands, the C-111 Spreader Canal, the Broward County Water Preserve Area, the Caloosahatchee River C-43 West Basin Storage Reservoir, and the Central Everglades Planning Project.

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[21] EPA, *Health and Environmental Effects Research, http://www.epa.gov/nheerl/research/aquatic_stressors/nutrient_loading.html#decreased_o2. See also* The Senate Select Committee on Indian River Lagoon and Lake Okeechobee Basin Final Report, November 8, 2013. Available at www.flsenate.gov/usercontent/topics/irllob/finalreport.pdf.

[22] *See* The Senate Select Committee on Indian River Lagoon and Lake Okeechobee Basin Final Report, November 8, 2013. Available at www.flsenate.gov/usercontent/topics/irllob/finalreport.pdf.

[23] *Id.*

[24] *Id.*

[25] *Id.*

[26] *See* The Florida Senate Glossery. Available at https://www.flsenate.gov/Reference/Glossary#memorial.

B. SECTION DIRECTORY: Not applicable.

II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT

A. FISCAL IMPACT ON STATE GOVERNMENT:

1. Revenues: None.

2. Expenditures: None.

B. FISCAL IMPACT ON LOCAL GOVERNMENTS:

1. Revenues: None.

2. Expenditures: None.

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR: None.

D. FISCAL COMMENTS: None.

III. COMMENTS

A. CONSTITUTIONAL ISSUES:

1. Applicability of Municipality/County Mandates Provision: Not applicable.

2. Other: None.

B. RULE-MAKING AUTHORITY: Not applicable.

C. DRAFTING ISSUES OR OTHER COMMENTS: None.

IV. AMENDMENTS/ COMMITTEE SUBSTITUTE CHANGES

None.