Fiscal Year 2022 Cross-Cut Budget Request

Task Force Working Document

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Section 1.0

Overview

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Section 1.0: Overview

Section 1.1: Introduction

This document provides coordinated budget requests for the Everglades ecosystem restoration efforts in south Florida with information provided by both federal and state agencies represented on the South Florida Ecosystem Restoration Task Force (Task Force). The information in this report is compiled and prepared by the U.S. Department of the Interior's Office of Everglades Restoration Initiatives (OERI) on an annual basis and includes a summary accounting of all funding requests in the Fiscal Year (FY) 2022 Budget for represented federal and state agency members. This document is available online at: www.evergladesrestoration.gov.

This document consists of three sections. This overview (Section 1.0) includes summary tables for the federal and state funding requests. The tables in this edition provide enacted and requested funding for FY 2015 through FY 2022. Historical enacted funding dating back to FY 2002 is available online at: www.evergladesrestoration.gov.

Section 2.0 provides detailed information concerning the federal Everglades ecosystem restoration projects and funding requests. Section 2.1 addresses the Comprehensive Everglades Restoration Plan (CERP) projects and funding requests and Section 2.2 addresses non-CERP projects and funding requests. The base program and operational funding requests not specifically designated for restoration for some federal agencies are not included in this document.

Section 3.0 provides detailed information concerning the State of Florida's Everglades ecosystem restoration projects and funding requests. Section 3.1 addresses CERP projects and funding requests, and Section 3.2 addresses non-CERP projects and funding requests. The FY 2021-22 totals shown represent estimates for the South Florida Water Management District (SFWMD).

Section 1.2: Federal and State of Florida Funding Summary Tables

The following tables provide a summary of the detailed funding information found in sections 2.0 and 3.0 of this document. Table 1 includes coordinated budget requests provided by federal agencies and Table 2 includes coordinated budget requests provided by the State of Florida agencies.

The funding requests for the federal agencies and the SFWMD reflect a fiscal year that begins on October 1 and ends on September 30 of each year. The funding requests for other State of Florida agencies reflects a fiscal year that starts on July 1 and ends on June 30 of each year.

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TABLE 1: FEDERAL FUNDING (ACTUAL $)

EVERGLADES ECOSYSTEM RESTORATION PROJECTS	FY 2015 Enacted	FY 2016 Enacted	FY 2017 Enacted	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Enacted	FY 2021 Enacted	FY 2022 Requested
COMPREHENSIVE EVERGLADES RESTORATION PROGRAM (CERP)								
USACE - CERP (Part of Central and Southern Florida) [1,3]	61,001,000	71,924,612	78,435,000	92,053,578	97,253,000	233,800,000	244,900,000	348,000,000
USACE - CERP O&M [1, 5]	1,538,000	1,826,635	0	2,920,000	0	4,971,000	4,789,000	4,321,000
USDOI - NPS CERP [2]	5,162,000	5,216,000	5,236,000	5,236,000	5,236,000	5,359,000	5,359,000	5,480,000
USDOI - FWS CERP	2,746,000	2,718,000	2,718,000	2,718,000	2,718,000	2,718,000	2,718,000	2,718,000
NON-COMPREHENSIVE EVERGLADES RESTORATION PROGRAM (CERP)								
USACE - Central and Southern Florida (excluding CERP) [1]	7,550,000	23,071,529	11,787,000	3,573,152	2,840,000	200,000	2,100,000	500,000
USACE - Non-CERP O&M [4,5]	4,039,000	6,741,392	5,703,010	2,996,000	6,537,000	8,850,000	5,263,000	4,629,000
USACE - Critical Projects	0	0	0	0	522,160	0	0	0
USACE - Kissimmee River Restoration	0	31,411,789	36,065,000	9,800,000	3,950,000	1,000,000	3,000,000	1,500,000
USDA – ARS	2,989,000	2,989,000	2,989,000	2,989,000	2,989,000	3,064,000	3,094,000	3,311,000
USDA – NRCS	29,785,906	21,857,180	45,017,889	13,613,458	30,000,000	22,000,000	29,000,000	29,000,000
US Department of Commerce – NOAA	357,242	1,190,593	1,155,000	1,155,000	1,081,500	1,031,460	1,084,000	1,099,000
USDOI – OERI and the South Florida Ecosystem Restoration Task Force	1,316,000	1,325,000	1,330,000	1,330,000	1,330,000	1,363,000	1,363,000	2,368,000
USDOI - NPS Park Management	29,624,000	30,055,000	30,181,000	30,605,000	30,420,000	31,058,000	31,918,000	34,591,000
USDOI - NPS Everglades Research (Critical Ecosystem Studies Initiative)	3,855,000	3,870,000	3,876,000	3,876,000	3,876,000	3,970,000	3,970,000	4,014,000
USDOI - NPS Land Acquisition (management)	668,000	636,000	636,000	660,000	830,000	900,000	0	0
USDOI - FWS Ecological Services	2,700,000	3,246,000	3,246,000	3,246,000	3,246,000	3,246,000	3,246,000	3,950,000
USDOI - FWS Refuges and Wildlife	4,271,000	4,771,000	4,771,000	4,771,000	4,771,000	4,771,000	4,771,000	5,144,000
USDOI - FWS Migratory Birds	92,000	92,000	92,000	92,000	92,000	92,000	92,000	92,000
USDOI - FWS Law Enforcement	568,000	568,000	568,000	568,000	568,000	568,000	568,000	568,000
USDOI - FWS Fisheries	92,000	92,000	92,000	143,000	143,000	143,000	143,000	143,000
USDOI - FWS Land Acquisition	3,000,000	4,591,000	2,500,000	2,500,000	2,000,000	3,700,000	2,000,000	0
USDOI - USGS – Integrated Research, Planning and Interagency Coord.	7,313,000	7,928,000	7,727,000	8,327,000	8,192,000	8,197,000	8,375,000	8,192,000
USDOI – BIA	390,000	743,000	580,000	390,000	1,066,000	988,000	380,000	380,000
USEPA	1,418,000	1,069,000	1,490,000	1,400,000	2,900,000	4,700,000	5,752,000	5,700,000

TABLE 2: FEDERAL FUNDING (ACTUAL $)

EVERGLADES ECOSYSTEM RESTORATION PROJECTS	FY 2015 Enacted	FY 2016 Enacted	FY 2017 Enacted	FY 2018 Enacted	FY 2019 Enacted	FY 2020 Enacted	FY 2021 Enacted	FY 2022 Requested
CERP Total (USACE and USDOI)	70,447,000	81,685,247	86,389,000	102,927,578	105,207,000	246,848,000	257,766,000	360,519,000
Non-CERP Subtotal (USACE and USDOI)	65,478,000	119,141,710	109,164,010	73,269,152	70,383,160	69,046,000	67,189,000	66,071,000
Non-CERP Subtotal (Other Federal Agencies)	34,280,148	27,105,773	50,651,889	27,659,000	36,970,500	30,795,460	38,930,000	39,110,000
Non-CERP Total (All Federal Agencies)	99,758,148	146,247,483	159,815,899	100,928,152	107,353,660	99,841,460	106,119,000	105,181,000
TOTAL CERP AND NON-CERP (USACE AND USDOI)	**135,925,000**	**200,826,957**	**195,553,010**	**176,196,730**	**175,590,160**	**315,894,000**	**324,955,000**	**426,590,000**
TOTAL CERP AND NON-CERP (ALL FEDERAL AGENCIES)	**170,205,148**	**227,932,730**	**246,204,899**	**203,855,730**	**212,560,660**	**346,689,460**	**363,885,000**	**465,700,000**

Note: *Base program and operational funding requests for the U.S. Environmental Protection Agency, U.S Department of Commerce, U.S. Department of Agriculture, and the U.S. Army Corps of Engineers are not included in the information provided within this Cross-Cut Budget Working Document.*

Footnotes:

[1] *USACE CERP activities are part of the Central and Southern Florida Project (C&SF) but are presented separately from other C&SF activities.*

[2] *NPS CERP funding includes GSA space rental costs in the following amount: $410,000 per year from FY 2015 – FY 2022.*

[3] *USACE FY 2015 enacted reflects reduction for the C&SF Upper St Johns River Project.*

[4] *FY 2016 Enacted O&M data includes $6,950,000 that will be executed in FY 2017 but was provided in FY 2016.*

[5] *FY 2017 Enacted O&M data includes $2,832,000 that will be executed in FY 2018 but was provided in FY 2017.*

TABLE 3: STATE OF FLORIDA FUNDING (ACTUAL $)

EVERGLADES ECOSYSTEM RESTORATION PROJECTS	FY 2014-15 Enacted	FY 2015-16 Enacted	FY 2016-17 Enacted	FY 2017-18 Enacted	FY 2018-19 Enacted	FY 2019-20 Enacted	FY 2020-21 Enacted	FY 2021-22 Requested
COMPREHENSIVE EVERGLADES RESTORATION PROGRAM (CERP)								
Florida Department of Environmental Protection	61,336,618	49,371,486	163,461,458	173,783,678	176,041,563	322,702,810	233,900,000	273,461,850[5]
Florida Fish and Wildlife Conservation Commission	1,732,157	2,151,735	3,004,775	4,616,862	4,954,181	4,143,809	4,885,133	5,244,399
South Florida Water Management District	52,836,197[1]	54,436,380[1]	35,914,180[1]	30,212,186[1]	26,637,998[1]	46,096,597[1]	44,165,476[2]	26,364,259[4]
NON- COMPREHENSIVE EVERGLADES RESTORATION PROGRAM (CERP)								
Florida Department of Agriculture/Consumer Services[3]	3,000,000	4,332,449	4,332,449	4,332,449	4,332,449	21,220,449	21,220,449	23,232,449
Florida Department of Environmental Protection	82,993,974	37,923,719	168,264,771	131,836,360	121,866,650	120,267,355[5]	86,559,309[6]	139,861,306[5]
Florida Fish and Wildlife Conservation Commission	48,216,417	50,832,728	52,538,808	53,607,006	55,600,328	54,537,988	49,615,884	58,005,024
Florida Department of Transportation	17,656,798	11,951,883	8,969,139	44,518,584	17,369,656	5,386,700	8,756,201	19,747,518
South Florida Water Management District	418,794,193[1]	448,384,250[1]	395,390,671[1]	374,751,716[1]	370,673,830[1]	400,839,404[1]	478,081,506[1]	428,501,925[4]
CERP SUBTOTAL:	**115,904,972**	**105,959,601**	**202,380,413**	**208,612,726**	**207,633,742**	**372,943,216**	**282,950,609**	**305,070,508**
NON-CERP SUBTOTAL:	**570,661,382**	**553,428,029**	**629,495,838**	**609,046,080**	**569,842,913**	**602,251,896**	**644,233,349**	**669,348,222**
STATE OF FLORIDA FUNDING TOTAL:	**686,566,354**	**659,387,630**	**831,876,251**	**817,658,806**	**777,476,655**	**975,195,112**	**927,183,958**	**974,418,730**

Footnotes:

[1] Reflects SFWMD adopted budget appropriations less any state and federal funds.

[2] Reflects SFWMD adopted budget appropriations less any River of Grass project funds which are accounted for in the Non-CERP Everglades Ecosystem Restoration Projects category.

[3] The number reflected does not include Forestry's contributions.

[4] SFWMD FY 2020-21 Preliminary Budget less state and federal funds

[5] Total does not include FDEP FY 2021-22 funding of $58.9 million for Everglades restoration and $48 million for the C-51 Reservoir

[6] Total does not include Governor's budget recommendations of $50,600,000 for FDEP FY 2020-21 grant funds for water quality improvements, some of which may go towards projects within the Everglades ecosystem.

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Section 2.0

Federal Everglades Ecosystem Restoration Projects and Funding Requests

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Section 2.1: Federal Comprehensive Everglades Restoration Plan (CERP) Projects and Funding Requests ($360,519,000)

U.S. Army Corps of Engineers (USACE) Construction ($348,000,000)

Congress authorized the CERP in the Water Resources Development Act (WRDA) of 2000. The objective of the program is to restore, protect, and preserve water resources in central and southern Florida, including the Everglades. The CERP includes numerous projects that work together to achieve the plan's restoration goals. WRDA 2000 requires the completion of project implementation reports (PIRs) for these projects. The PIRs provide further information on plan formulation and evaluation, engineering and design, estimated benefits and costs, and environmental effects of planned restoration activities. The PIRs serve to bridge the gap between the conceptual level of detail contained in the CERP and the detailed design plans and specifications required to proceed with construction. Congress authorized three projects in WRDA 2007: the Indian River Lagoon South, the Picayune Strand Restoration, and the Site 1 Impoundment projects. An additional project, the Melaleuca Eradication Facility, was authorized for construction in accordance with the programmatic authority provision of WRDA 2000. The Water Resources Reform and Development Act (WRRDA) of 2014 authorized four additional CERP projects: the Caloosahatchee River (C-43) West Basin Storage Reservoir, the C-111 Spreader Canal Western Project, the Broward County Water Preserve Areas, and the Biscayne Bay Coastal Wetland Phase 1 Project. The WRDA 2016 authorized the Central Everglades Planning Project (CEPP) and reauthorized the Picayune Strand Restoration Project. The WRDA 2018 authorized the CERP Central and Southern Florida Everglades Agricultural Area (EAA) Reservoir Project, subject to conditions. The WRDA 2020 authorized the Loxahatchee River Restoration Project, reauthorized the C-43 West Basin Storage Reservoir, and modified the CEPP authorization to incorporate the EAA Reservoir Project features into CEPP.

From a project perspective, the major focus of the USACE FY 2022 activities includes continuing construction management on the Indian River Lagoon (IRL) South project features at C-23/24 STA; completing the C-44 Reservoir Operational Testing and Monitoring period; continuing the design of the C-23/24 North and South Reservoir IRL project features; oversight of the C-43 Caloosahatchee West Basin Storage Reservoir construction being performed by the SFWMD; continuing construction and construction management of the Biscayne Bay Coastal Wetlands (BBCW) L-31 East Flow-way features and oversight of the SFWMD construction of the Cutler Wetlands features; construction and construction management of CEPP EAA features, including initiation of EAA reservoir construction; construction and construction management of the Picayune Strand southwest protection features and road removal east and west of Miller Boulevard; completing the design of canal plugging for the Picayune Strand project and continuation of project adaptive assessment and monitoring activities used to monitor the effects of projects as they are implemented, as well as the CERP Design program level activities.

From a program perspective, FY 2022 CERP activities include continuation of Restoration Coordination and Verification (RECOVER), an inter-agency scientific group charged with system-wide assessments of planned and completed projects as well as with programmatic level activities. RECOVER's science-based activities include evaluation and assessment on the performance of the CERP, review of the effects that other restoration projects may have on CERP, and provision of a system-wide perspective throughout the restoration process. Other program

level activities include continued reassessment of project sequencing to optimize delivery of benefits as contained in the Integrated Delivery Schedule (IDS).

U.S. Army Corps of Engineers CERP Operations & Maintenance (O&M) ($4,321,000)

The FY 2022 O&M activities includes critical routine operations and maintenance activities associated with mitigation requirements on the Broward County Water Preserve Area Project; maintenance of the Manatee Refugium at the Picayune Strand Restoration Project; and continuation of critical routine operations and maintenance activities for cost shared O&M responsibilities at the Melaleuca Eradication and Other Exotic Plants, Site 1, Picayune Strand, IRL, and BBCW projects.

U.S. Department of the Interior (DOI) - National Park Service (NPS) ($5,480,000)

The Everglades National Park (ENP), Biscayne National Park (BCNP), Big Cypress National Preserve (BICY), and Dry Tortugas National Park (DRTO) are unique ecosystems with temperate and subtropical species and habitats, complex biological processes, and a large number of threatened and endangered species that reside in these ecosystems, including the Florida panther, Everglades snail kite, American crocodile, and the West Indian manatee. The goal of the multidecadal CERP is to restore, preserve, and protect the South Florida Ecosystem to achieve the unique ecological and hydrological characteristics of an undisturbed system. The CERP "Yellow Book" includes 68 project components to be constructed to restore the quantity, quality, timing, and distribution of water for the South Florida Ecosystem. Several of these projects within CERP will directly benefit the hydrological conditions within NPS lands by stopping or reversing decades of ecosystem decline. These projects occur in phases until the full implementation of CERP. The NPS is closely working with the U.S. Fish and Wildlife Service (USFWS) and the U.S. Geological Survey (USGS), in collaboration with the State of Florida and the USACE, to support CERP projects. The NPS team is actively participating in the planning process of CERP projects through modeling of proposed alternatives, developing performance measures, and projecting potential environmental benefits on NPS resources. The NPS team is also monitoring project implementation and quantifying environmental benefits of completed projects.

In FY 2021, the NPS actively participated in several ongoing CERP projects, including being a cooperating agency with the USACE on the ongoing Biscayne Bay and Southeastern Everglades Restoration (BBSEER) project, initial components of the CEPP South, CEPP-South adaptive management, and the re-start of the Western Everglades Restoration Project (WERP). The FY 2021 budget for Everglades restoration implementation currently supports 22 full-time ecologists, hydrologists, modelers, water quality experts and employees that worked on CERP and non-CERP restoration projects.

In FY 2021, CERP funding also supported NPS engagement on the Lake Okeechobee System Operating Manual (LOSOM), a water management operational study where our teams are actively assessing the effects of the planned operational changes on NPS/DOI resources. Continued NPS participation in this project helps to ensure incremental progress toward our goal of conserving our lands and waters for the enjoyment of future generations. Another major water

operation study, the Combined Operational Plan (COP), was implemented in FY 2021 with increasing flows into the Northeast Shark River Slough region within ENP. Along with its partners, the NPS team is also actively engaged in adaptively monitoring and managing COP to maximize the ecological benefits ensured from this operational plan.

In addition to these project-level interagency assessments, the NPS has a key role in programmatic-level restoration science activities, such as the RECOVER Monitoring and Assessment Plan (MAP) led by the USACE and SFWMD. The MAP develops monitoring and research studies to determine the landscape-scale ecological effects of CERP projects that the interagency RECOVER team uses to track overall restoration success. The NPS is on the leadership team for RECOVER, which is the scientific group responsible for providing restoration science input to the CERP project teams, and the NPS also serves as a co-chair on the Southern Coastal System team. In FY 2021, the NPS, in collaboration with RECOVER, focused its effort to update the Conceptual Ecological Models, non-quantitative planning tools that identify major ecological and anthropogenic drivers and stressors on natural systems and their ecological effects. In addition, the NPS also currently serves as a member of the Working Group (WG) and as a member of the Science Coordination Group (SCG), in support of Task Force, and as DOI's co-liaison to the National Academies: Committee on Independent Scientific Review of Everglades Restoration Progress (CISRERP).

The NPS also participates for the DOI in the formal requirements on programmatic activities as specified in WRDA 2000. These include any updates to the CERP Programmatic Regulations that specify how CERP projects will be built, operated, and evaluated; achievement of Interim Goals and Interim Targets (IGIT) used to forecast restoration progress and provide benchmarks for the Five-Year Reports to Congress; and the identification of the appropriate quantity, timing, and distribution of water that will be produced—and reserved under federal and state law—for the natural and built system.

The FY 2022 budget for Everglades restoration implementation is planning to support approximately 23 full-time ecologists, hydrologists, modelers, water quality experts and employees that will work on both CERP and non-CERP restoration projects.

The CERP project activities for FY 2022 include the following:

- For federal projects, the CERP authorization directs the NPS to formally participate in CERP planning and assessment efforts, ensuring appropriate benefits to NPS natural and cultural resources and visitor opportunities. NPS staff will participate in CERP system-wide monitoring, applying hydrological and ecological performance measures, developing interim goals, and producing programmatic guidance to evaluate restoration performance. For State of Florida projects, the NPS will participate in the establishment of water reservations, minimum flows and levels, water supply plans, and standards for water quality (nutrients and contaminants).
- The NPS CERP program will also continue advance monitoring and assessment of projects oriented toward threatened and endangered species on NPS lands, providing technical input to the USFWS as well as state/federal implementing agency planning that supports restoration-oriented water operations.

- The NPS CERP program team will continue tracking the WERP progress. With drainage and water flows disruption, Big Cypress National Preserve has been adversely impacted by reduced water delivery and poor water quality. The WERP main goal for this ecosystem is focused on restoring the historic low nutrient sheetflow to reestablish ecological connectivity of the wetland-upland mosaic and the native flora and fauna. In 2018, the USACE was given three years and three million dollars to complete planning for WERP. Regrettably, the planning duration and funding limits for WERP were exceeded and the project was put on pause while an extension was pursued. On May 6, 2021, the USACE provided an update on the project status. In this meeting, a new timeline for completing planning was presented. The Tentatively Selected Plan (TSP) is to be chosen by September 2021. The Chief's Report is scheduled for completion in September 2022. The NPS staff will continue to actively participate in the WERP process, providing analysis and documenting water quality concerns. The NPS will ensure these concerns are addressed as we move into choosing the TSP.
- For the DOI, the NPS is a cooperating agency for the BBSEER project, a combination of two CERP projects in south Miami-Dade County, the BBCW and the C-111 Spreader Canal projects, directly affecting NPS lands and resources. The NPS CERP program team will continue providing technical analyses and support to water operations and restoration activities that affect BNP, with a Chief's Report expected in October 2025. BBCW was the only project in CERP to specifically bring additional freshwater to restore nearshore and estuarine coastal areas for BNP. The area and habitat for BBSEER are directly affected by projected sea level rise, and project features may provide the ability to slow the inland movement of saltwater in the aquifer by the application of freshwater to restore habitat. The NPS team will continue to be fully engaged in BBSEER public workshops and interagency technical meetings and will help to prepare the National Environmental Policy Act (NEPA) document. Through BBSEER and other upcoming CERP planning efforts, the NPS team will incorporate resiliency and sustainability into their analyses to assess the integrated performance of this CERP project under future sea level rise scenarios. This is to guarantee that restoration investments are designed to be more resilient to future conditions.
- The NPS CERP program team will track the effects of current and proposed operations on Everglades water quality and work with the USACE and the State of Florida to design water operations to minimize the risk of water quality exceedances. The team will work with the State (SFWMD/Florida Department of Environmental Protection [FDEP]), USACE, USFWS, U.S. Environmental Protection Agency (USEPA), and U.S Department of Justice (DOJ) to track the 1992 Consent Decree compliance standards that protect ENP and the Arthur R. Marshall Loxahatchee National Wildlife Refuge (Loxahatchee NWR).
- The CERP program team will continue to track and provide technical analysis and briefings on the detailed design and implementation of the State of Florida's Restoration Strategies project and its progress toward achieving the Water Quality Based Effluent Limit (WQBEL) for phosphorus entering the Everglades.

U.S. Department of the Interior (DOI) – U.S. Fish and Wildlife Service (USFWS) ($2,718,000)

The FY 2022 request for CERP implementation will support approximately 11 full-time Ecological Services employees that actively serve on planning teams for all CERP and non-CERP restoration projects being conducted by the USACE. This will enable the FWS to fulfill its Trust Resource responsibilities under the Endangered Species Act (ESA), Fish and Wildlife Coordination Act, Migratory Bird Treaty Act (MBTA), and other statutes as well as the CERP Programmatic Regulations as part of the restoration effort. The USFWS is an integral planning partner in formulating alternatives; designing, assessing, and monitoring; and adaptively managing the project components of CERP during its implementation. The USFWS is responsible for providing environmental expertise to the USACE and the SFWMD. The USFWS is also involved in guiding Everglades restoration at a system-wide scale through the following activities: system status reports, participation in RECOVER activities, and the LOSOM.

In FY 2022, the USFWS will continue to participate in the development and execution of major restoration projects throughout the Everglades. These activities will include assistance in restoration plan formulation and ecological benefit analysis, ESA Section 7 consultation, recovery plan implementation, monitoring and adaptive management, restoration and management activities on DOI lands, CERP project planning, preparation of Fish and Wildlife Coordination Act reports, system-wide water quality improvement, land acquisition, migratory bird and fisheries conservation, and myriad multi-agency planning, science, and outreach efforts. As a recognized leader in the science of ecosystem restoration, the USFWS provides biological and ecological expertise and is an integral planning and implementation partner in the CERP to ensure that ecosystem benefits are maximized consistent with long-term CERP project goals. The USFWS will design features and project components that maximize natural resource benefits through active participation throughout the restoration planning process.
For more information, visit: http://www.fws.gov/verobeach/EvergladesRestoration.html.

The U.S. Fish and Wildlife Service National Wildlife Refuge System (NWRS) is a premier system of federal lands set aside primarily for the purpose of conserving fish, wildlife, and plants. There are seventeen refuges within the CERP, Florida Bay, and Lake Okeechobee water management footprint. The Loxahatchee NWR is the northern extent of the Everglades and provides flows south into the Greater Everglades. Thus, the NWRS is actively engaged in CERP planning and implementation through project delivery teams (PDTs) and sub-teams, such as the ecology, water quality, engineering, modeling, and plan formulation sub-teams. The NWRS is working cooperatively with multiple agencies and provides recommendations on water management and water quality improvements to the Everglades and estuary ecosystems.

In 1988, the United States sued the State of Florida for failing to preserve the Loxahatchee NWR and ENP for future generations due to water pollution. A 1992 consent decree established phosphorus limits and water quality compliance requirements for the refuge and the park. The NWRS works very closely with the State of Florida in water quality modeling, stormwater treatment area (STA) designs and operations, and compliance monitoring of water nutrients. The Area II refuge supervisor is a consent decree USFWS principal and the Area II refuge ecologist is a member of the Technical Oversight Committee and Everglades Program Team.
For more information, please visit: https://www.fws.gov/refuges/

Section 2.2: Federal Non-CERP Everglades Ecosystem Restoration Projects and Funding Requests ($105,181,000)

U.S. Army Corps of Engineers ($6,629,000)

U.S. Army Corps of Engineers Construction ($2,000,000)

Kissimmee River Restoration ($1,500,000): This project involves restoring the historic habitat in much of the Kissimmee River floodplain and restoring water-level fluctuations and seasonal discharges from lakes Kissimmee, Cypress, and Hatchineha in the upper basin. The FY 2022 activities include work in-kind and lands, easements, rights-of-way, relocation, and disposal area reviews for crediting, and post construction ecological monitoring.

South Dade County, C-111 Project ($500,000): This project consists of modifications to the Central & Southern Florida (C&SF) Project to provide more natural hydrologic conditions in Taylor Slough and to minimize damaging flood releases to Barnes Sound/Manatee Bay, while maintaining flood protection for adjacent agricultural lands. The FY 2022 activities include physical closeout and lands, easements, rights-of-way, relocation, and disposal area reviews for crediting.

U.S. Army Corps of Engineers Non-CERP Operations & Maintenance (O&M) ($4,629,000)

The FY 2022 O&M activities include critical routine operations and maintenance activities associated with mitigation requirements specified in the USFWS Biological Opinion on the COP to protect threatened and endangered species [funds specific to C-111 South Dade (C-111 SD), Modified Water Deliveries to Everglades National Park (Mod Waters), and C&SF programmatic activities].

U.S. Department of Agriculture (USDA) - Agricultural Research Service (ARS) ($3,311,000)

The USDA-ARS conducts an integrated research program that addresses the needs of agriculture and complements the CERP. The goal of the research is to develop and transfer improved scientific technologies and enhanced management strategies that control invasive exotic species and assure the continued economic integrity of agriculture. Two major areas of research support South Florida Ecosystem restoration and agriculture: biological control of invasive species and improved crop production systems.

Development and Evaluation of Biological Control Agents for Invasive Species Threatening the Everglades and other Natural and Managed Systems ($2,871,000)

The ARS Invasive Plant Research Laboratory (IPRL) in Fort Lauderdale, Florida, and its satellite lab in Gainesville, Florida, conduct research to: (1) identify and collect natural enemies for control of melaleuca, Brazilian peppertree, Old World climbing fern, downy rose myrtle, Chinese tallow, air potato, water hyacinth, water lettuce, and other invasive plants; (2) evaluate biological control agents for release against invasive weed and insect species in a risk analysis context; (3) obtain approval for release of host specific natural enemies; (4) mass-rear and distribute approved agents on natural area weeds; (5) evaluate individual and community level impacts of established agents

on weed targets; (6) quantify the effects of biological control agents on food webs; and (7) develop biological based integrated weed management strategies that are efficient, economical, and environmentally sound. Many of the biological control agents that are developed by the IPRL were discovered by scientists at the ARS Australian Biological Control Laboratory in Brisbane or the Foundation for the Study of Invasive Species near Buenos Aires. Landscape level weed suppression programs that maximize biological control agents are designed in close cooperation with client groups like the SFWMD, the Florida Fish and Wildlife Conservation Commission (FWC), the USACE, the NPS, the USFWS, the Nature Conservancy, and many others. The FY 2021 President's Budget had a proposed termination for melaleuca research in the amount of $262,000.

Soil Conservation for Sustainable Sugarcane Production ($440,000)
The Sugarcane Field Station in Canal Point, Florida, develops high-yielding, disease-resistant sugarcane cultivars for both organic (muck) and sand soils. Development of new, improved sugarcane cultivars impacts the cultural practices used in commercial sugarcane production. In particular, harvest residue and application of chemicals during production affect critical components of sustainable production such as soil dynamics. The biggest challenge for sugarcane growers in Florida is orange rust disease, which causes considerable yield losses and increases production costs with multiple fungicide applications. The development of new cultivars with resistance to economically limiting diseases is a high priority because of the impact of brown and orange rust diseases. Promising molecular markers for resistance to orange rust have been identified in sugarcane germplasm and these markers are being validated for their use in marker-assisted breeding for the incorporation of disease resistance into new cultivars.
For more information, please visit:
https://www.ars.usda.gov/southeast-area/canal-point-fl/sugarcane-field-station/.

U.S. Department of Agriculture (USDA) - Natural Resources Conservation Service (NRCS) ($29,000,000*)

The NRCS provides technical assistance on a voluntary basis to private landowners and operators, tribes, and others for the planning of conservation practices and installation of needed conservation management systems with the goal of achieving natural resource sustainability. This includes the design, layout, and consultation services associated with the conservation practice application or management guidance provided. Technical assistance is targeted towards nutrient management, water quality, and water conservation concerns associated with animal feeding, livestock grazing operations, and fruit and crop production within the South Florida Ecosystem. Financial assistance is provided through a variety of USDA Farm Bill Programs.

The NRCS provides assistance to livestock and dairy producers to apply Best Management Practices (BMPs), including waste management systems, to reduce off-farm nutrient discharges. A special effort in the EAA and C-139 basin is in place to assist the land user to meet requirements outlined in the 1994 Everglades Forever Act to reduce phosphorus loading into the Everglades Protection Area. Other areas of assistance are provided on private and Tribal lands to restore wetlands, improve wildlife habitat, and control invasive exotic plant species. Financial assistance is provided through a variety of USDA Farm Bill Programs.

Farm Bill of 2018

Environmental Quality Incentives Program (EQIP)

The EQIP provides financial and technical assistance to farmers and ranchers who face threats to soil, water, air, and related natural resources on their land. Through EQIP, the NRCS develops contracts with agricultural producers to implement conservation practices to address environmental natural resource problems. Payments are made to producers once conservation practices are completed according to NRCS requirements on agricultural lands that will improve or maintain the health of natural resources in the area including water quality.

Agricultural Conservation Easement Program (ACEP)

The ACEP provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits. Under the Agricultural Land Easements component, NRCS helps Indian tribes, state and local governments, and non-governmental organizations protect working agricultural lands and limit non-agricultural uses of the land. Under the Wetlands Reserve Easements component, NRCS helps to restore, protect, and enhance enrolled wetlands.

**FY 2021 program funding is pending national approval of annual allocations to States.*

U.S. Department of Commerce - National Oceanic and Atmospheric Administration (NOAA) ($1,099,000)

NOAA provides science, monitoring, and modeling projects critical to implementing and assessing CERP and other parts of the South Florida Ecosystem restoration effort. NOAA projects provide pre-implementation and early implementation information critical in evaluating the downstream impacts of restoration activities on coastal resources. This information allows project managers to adjust project details through the adaptive management process. NOAA scientists and resource managers, including those from the Florida Keys National Marine Sanctuary Program (FKNMS), participate in various management and science coordination activities related to South Florida Ecosystem restoration. While many NOAA programs support restoration efforts, the following NOAA projects directly support CERP implementation.

Florida Keys National Marine Sanctuary (FKNMS)

In Fall 2020, the FKNMS Water Quality Protection Program and Sanctuary Advisory Council jointly initiated a new working group called the Florida Keys and South Florida Ecosystem Connectivity Team. The purpose of this group is to increase awareness and facilitate collaboration between Keys' stakeholders, scientific experts, and agency representatives on Everglades restoration and other regional issues of importance to water quality within the FKNMS. The working group is composed of 15 members from the local community, including water quality and restoration experts, fishing guides, coral restoration practitioners, and dive industry representatives. Additional advisors from agencies involved with Everglades restoration and other south Florida water management efforts will also be part of the team to help provide technical expertise and answer questions. This working group will help bridge the gap between important regional water management efforts and the downstream natural resources by helping to educate members of the Keys' community about Everglades restoration and generating recommendations to the Advisory Council related to those activities.

Atlantic Oceanographic & Meteorological Laboratory (AOML)
Almost all replumbing and inland restoration efforts will ultimately affect the flow of water, nutrients, and other elements to coastal bays and estuaries. Understanding the impacts of changes in surface water flows to coastal systems is critical in determining the overall success of restoration activities. Since the early 1990s, scientists from AOML (South Florida Program) have been conducting interdisciplinary observations of south Florida coastal waters. Large-scale surveys are planned for every other month of each year and cover the waters of the FKNMS and the southwest Florida shelf up to Tampa Bay. Data collected will continue to improve the predictive capabilities and enhance the understanding of the south Florida coastal ecosystem and its connectivity to the Everglades, allowing NOAA to contribute to adaptive management of CERP and fulfill its responsibility to CERP.

Restoration Science and Assessment / National Marine Fisheries Service (NMFS)
NOAA's Southeast Fisheries Science Center (SEFSC), in collaboration with other agencies and entities, conducts monitoring and assessment projects to support CERP. SEFSC scientists began working directly with the USACE, SFWMD, and other agencies in the southern estuaries in the late 1990s or early 2000s and continue today, with a working knowledge of pre-project conditions, to assess the effects of CERP restoration components as they are implemented. In 2021, NMFS continued scientific activities to determine the impact of upstream restoration efforts and changing freshwater inflow on south Florida coastal systems. This research, which will continue in FY 2022, examines the impacts of changing freshwater runoff patterns on inshore and coastal ecosystems as CERP components are implemented. Projects supporting CERP are conducted in Biscayne Bay and Florida Bay in collaboration with NOAA AOML, other agency partners, and academic institutions working under the CERP MAP of RECOVER. In FY 2021, SEFSC research scientists became team members in the new BBSEER project, helping to develop performance measures, targets, and other metrics to use in selecting the best project plan among proposed alternatives. SEFSC involvement in BBSEER will continue in FY 2022, when it may include activities relative to NEPA.

Biscayne Bay NOAA Habitat Focus Area (HFA) / National Marine Fisheries Service
The Biscayne Bay HFA is one of the first 10 HFAs in NOAA's Habitat Blueprint Initiative, which provides a forward looking framework for coordination, within NOAA and with partner organizations, to address growing challenges of coastal and marine habitat loss and degradation. In FY 2021 SEFSC and AOML and its partners continued to address major goals of the Biscayne Bay HFA, including reduction of incidences of habitat-degrading algal blooms. Unfortunately, algal blooms and fish kills in North Biscayne Bay were not prevented by any of these activities; however, these disastrous events may lead to a monitoring network for the bay that can better capture conditions leading up to them, improving the ability to determine immediate and cumulative causes. In support of an ongoing watershed study of the Coral Gables waterway, AOML is continuing its HFA efforts with a coupled hydrodynamic and water quality model of the bay that extends up the waterway from the bay. The model uses the EFDC (Environmental Fluid Dynamic Code) framework. EFDC is a multifunctional surface water modeling system that includes hydrodynamic, sediment-contaminant, and eutrophication components and can operate in 1, 2, or 3 dimensions. The Biscayne Bay application covers most of the bay (north to the 79th St Causeway and south to where U.S. 1 crosses Manatee Bay), although calibration has been focused on Central Biscayne Bay south of the Rickenbacker Causeway and the Coral Gables waterway. While this is its present focus, development of the Biscayne Bay EFDC model offers the

opportunity to apply it to other Biscayne Bay areas and uses. One opportunity, for example, would be to determine how management of the regional hydrologic system to affect one part of the bay might affect another.

One of SEFSC's latest contributions to the Biscayne Bay HFA is a scientific paper documenting smalltooth sawfish presence in Biscayne Bay that was published in FY 2021 in the journal Endangered Species Research. The paper, led by a University of Miami (UM) author, provides new information that could influence future management of this endangered species, as well as its potential status as an indicator of CERP success. The 40-unit FACT (Florida Atlantic Coast Telemetry) acoustic array in the Biscayne Bay HFA that helped generate the paper is still being maintained by UM and SEFSC to record presence, habitat, and movement patterns of smalltooth sawfish and other acoustically tagged species, especially sharks. As another HFA contribution, a holistic digital integrated compilation of lists documenting presence of invasive exotic species, animal and plant, in the Biscayne Bay area (Miami-Dade and parts of Broward and Monroe Counties) was completed in FY 2021 by SEFSC's Biscayne Bay HFA coordinator, and presented to BNP and the Florida Biscayne Bay Aquatic Preserves to help them meet their invasive species update mandates. In 2022, SEFSC and AOML will continue to work within CERP and with partners to protect and enhance Biscayne Bay's ecosystem health and promote healthy populations of protected and fishery species.

U.S. Department of the Interior (DOI)- Office of Everglades Restoration Initiatives (OERI) and the South Florida Ecosystem Restoration Task Force (Task Force) ($2,368,000)

Funding in FY 2022 will sustain the continued operations and activities of the Department of the Interior's OERI. Since 1995, the OERI has provided senior executive level leadership in support of the congressionally mandated responsibilities of the Department and the Secretary in the restoration of America's Everglades. OERI will provide support necessary to fulfill the Secretary's role and responsibilities as chair of the intergovernmental Task Force. The OERI, under the leadership of the office of the Assistant Secretary for Fish, and Wildlife and Parks, will also continue in its role as the south Florida liaison for the Office of the Secretary in coordinating all departmental and bureau-level Everglades restoration activities, projects, policymaking and programs.

In FY 2022, the OERI leadership and staff will continue to support and work directly with the federal, state, local government, and Tribal representatives/partners on the Task Force. OERI will also administer, manage, and support the priorities, activities, meetings, and the required reporting responsibilities of the Task Force, its Working Group, the Science Coordination Group, and any designated advisory bodies. Congressionally mandated reporting documents produced by OERI in FY 2022 will include the Biennial Report, the Integrated Financial Plan, and the Cross-Cut Budget.

In the WRDA 2020, section 504, the Congress directed the Task Force to develop a priority list of invasive species that significantly impact the structure and function of ecological communities, native species, or habitats within the South Florida Ecosystem. The Task Force member agencies are also directed by the Congress to manage these species through coordination and

collaboration. The Congress directs the Task Force to develop innovative strategies and tools; guide applied research; facilitate improved management; and prevent future introductions of nonnative species. OERI has proposed in the FY 2022 President's Budget Request for a $1,000,000 funding plus-up. This plus-up for OERI will support the Task Force in developing innovative technologies, approaches, and on the ground implementation of programs to identify, target, and eliminate invasive animal and plant species that threaten restoration of America's Everglades. Invasive species, such as the Burmese python, are decimating native animal populations, obfuscating efforts to assess the success of restoration. OERI's staff and resources will provide support for on-the ground implementation of invasive exotics control programs. Funding will directly support specialized staff expertise in invasive exotic plants and animals and OERI will be responsible for managing and guiding the Task Force's efforts in implementing the Invasive Exotic Species Strategic Action Framework. OERI will also expand its lead role in supporting, communicating, and coordinating restoration programs, projects and policy implementation with the SFWMD and the USACE, who are primarily responsible for the "on the ground" construction projects dedicated to large-scale restoration of America's Everglades.

In FY 2022, the OERI and Task Force will update and assess the system-wide ecological indicators which are an integral component of the Task Force's Biennial Report. The OERI and Task Force will continue to work with the USACE to update the IDS, including sponsoring stakeholder engagement workshops. The OERI will also continue to maintain, expand, and improve the content of the EvergladesRestoration.gov website. This website was recently updated and has been redesigned as an even more innovative and comprehensive resource. It remains recognized as the "go-to" resource for any current and historical information on the activities, projects, policies, and programs associated with the restoration of America's Everglades.

Because of the COVID-19 pandemic and consistent with DOI's pandemic policies, OERI will sustain its remote teleworking programs, inclusive of social distancing practices using web technologies such as Microsoft Teams, WebEx, and Zoom Webinars. These services and innovative technologies will be essential to the successful accomplishment of the OERI mission and will be used routinely when conducting its restoration programs and related activities, its reporting responsibilities, and all scheduled meetings.

U.S. Department of the Interior (DOI) – National Park Service (NPS) ($38,605,000)

The FY 2022 budget for Everglades restoration implementation is planning to support approximately 23 full-time ecologists, hydrologists, modelers, water quality experts and employees that will work on both CERP and non-CERP restoration projects.

The NPS actively participated in several ongoing non-CERP projects related to seepage management along the ENP eastern boundaries. Modeling studies were conducted to assess seepage management needs along the entire boundary but also to quantify impacts of the SFWMD proposed construction of a 2.28 mile seepage cutoff wall for the 8.5 Square Mile Area, along the L-357W levee and the C-358 canal, a critical project for the implementation of Mod Waters and the COP.

The Foundation Projects and non-CERP project activities for FY 2022 include the following:

- For the Mod Waters and C-111 SD Foundation Projects, the NPS will continue monitoring the implementation of COP and the Tamiami Trail Flow Formula (TTFF). The COP is utilizing the new project infrastructure and the TTFF to restore more natural water flows and improve natural resource conditions in ENP and adjacent areas. NPS staff also manage the ecological monitoring program and the COP Adaptive Management Plan to assess the effects of the constructed Mod Waters and C-111 SD projects, and to optimize the benefits for NPS/DOI lands and resources.
- The NPS will continue working with the Florida Department of Transportation (FDOT) and the Federal Highway Administration (FHWA) on the Tamiami Trail Next Steps (TTNS) Project, which will raise and bridge the eastern 10.7-miles of Tamiami Trail. These actions will improve water flow and marsh connectivity between the upstream Water Conservation Areas (WCAs) and the Northeast Shark River Slough (SRS) basin of ENP, which is one of the most over-drained wetlands within the Greater Everglades watershed. In May 2019, the TTNS Phase 1 project completed 2.3-miles of bridging and adjacent roadway improvements. The TTNS Phase 2 project received $103.5 million in joint state/federal funding in 2019. This second phase of the project will raise/reconstruct the remaining 7 miles of roadway, upgrade seven sets of existing culverts, and construct six small bridges to further improve water conveyance, roadway safety, and stormwater treatment. In August 2020, the FDOT awarded the TTNS Phase 2 low bid design/build contract for $53 million, well under the government estimate. The Notice to Proceed was issued in October 2020. Construction of the TTNS Phase 2 started in April 2021 and the project is expected to be substantially complete in June 2024. The NPS staff will continue to be involved in permitting, implementation, monitoring, and contractor oversight throughout the next couple of years. Monitoring of the ecological benefits from the Old Tamiami Trail Removal will also occur in conjunction with TTNS. The removal of the last 6 mile section of Old Tamiami Rail was completed in August 2021.
- The NPS staff will continue working on the LOSOM, a large scale non-CERP project lead by the USACE. Lake Okeechobee serves as one of the major sources of water to south Florida during the dry season and is part of the complex water management operations. This network and its operations are overseen primarily by the State of Florida and USACE in providing water to the diverse water interests of south Florida. Water can be brought south through the canals to supply water to the environment, agriculture or urban areas. The water level and discharges of Lake Okeechobee are managed based on a regulation schedule maintained by the USACE. The LOSOM is a key step for regional water supply, improving the health of the lake and northern estuaries, and achieving Everglades restoration success, including NPS/DOI resource protection. LOSOM review and analysis is intended to update Lake Okeechobee operations and water movement after the construction and inclusion of infrastructure and for the operation of new projects. These projects include the Herbert Hoover Dike rehabilitation and the Kissimmee River Restoration Project.
- The NPS will continue participating in LOSOM public workshops and interagency technical meetings and will help prepare the NEPA document. The NPS has also been contributing to and reviewing alternative operation plans for the LOSOM. The primary focus in reviewing these plans has been to ensure water is available to be moved south towards the Everglades ecosystem and ENP during the dry season. In the process the NPS has recommended the addition of a dry season metric to evaluate water delivery south to

ENP during the dry season among promoted plans going forward. At this stage, the NPS staff is evaluating five final alternatives, each to project possible conditions associated with different assumptions and water input. The outcome of this stage is the development of the final alternative lake schedule, with a final NEPA document expected in July 2022. The effort to find the final balanced plan that promote water delivery to the Everglades in the most advantageous manner is still underway.

Park Management ($34,591,000)

Big Cypress National Preserve (BCNP)
FY 2022 funding will support the preservation of management activities promoting public use and resource protection through the implementation and interpretation of an extensive backcountry off-road vehicle (ORV) trail system in BCNP. The NPS will continue to support mandated programs, such as the protection, inventory, and monitoring of 10 threatened and endangered species (including the Florida panther, Cape Sable seaside sparrow (CCSS), and Florida manatee) and a large hydrology program that includes restoration of sheet-flow to ENP and the Ten Thousand Islands. The NPS will also continue to support monitoring and controlling invasive fauna and flora in Big Cypress. Additional mandated programs include special uses, such as oil exploration and production, the largest recreational hunting wildlife management area in south Florida, implementation of the largest recreational ORV program in the lower 48 States, and 22 American Indian (Seminole, Miccosukee, and independent) sites on preserve lands. The preserve also supports the largest prescribed fire program in the NPS; visitor and resources protection of 728,000 acres of predominately backcountry areas; maintenance of 26 employee housing units, two major visitor support facilities, public utility systems, five primitive campgrounds, three developed campgrounds, and 66 miles of roads; and management of approximately 460 known archeological sites.

The natural resources management program will continue to collect baseline data in formats that are compatible with interagency regional hydrologic and community/species-based models, control non-native plants, protect threatened and endangered species, mitigate visitor impacts, and manage funds to support direct inventory and monitoring of resources and a geographic information system.
For more information, please visit http://www.nps.gov/bicy/index.htm.

Biscayne National Park (BNP)
FY 2022 funding will support the park's area management activities, including promoting public use and mitigation of public use; interpretation and education programs; protection of resources; and efforts to address impacts and threats associated with urban sprawl, increased urban freshwater use, four solid waste landfills, and a nuclear power facility. All of these threats exist along the park's western boundary and are "upstream" with respect to surface- and groundwater flow into the park.

Park employees perform other area management activities associated with the protection of the park's natural, cultural, and historic resources, as well as maintenance of park facilities. Park staff protect 173,000 acres of resources that include Biscayne Bay, the largest living coral reef system in the NPS, eight known terrestrial cultural sites, 67 known submerged cultural sites, approximately 20 historic structures, and two national historic districts within a boundary that

has unlimited access points. Park staff maintain three developed islands and two mainland sites that include six harbors/docking facilities, two campgrounds, six picnic areas, approximately 10 miles of trails, six residences, an environmental education camp, and a major visitor center.

The park's natural resources management will continue to protect Biscayne Bay estuarine resources, coral reefs, seagrass beds, and hard bottom communities; monitor water quality; document and mitigate impacts due to visitor and commercial uses; control exotic vegetation; and monitor 17 federally listed threatened and endangered species. Staff make special efforts to prevent extensive damage to seagrass beds and coral reefs from boat groundings and to restore those areas. Park staff also make extensive efforts to work with local, state, and federal government agencies on development and impact issues.
For more information, please visit http://www.nps.gov/bisc/index.htm.

Dry Tortugas National Park (DTNP)
Funding in FY 2022 will support operations of this 65,000-acre marine and historical park located 70 miles west of Key West. Current funding will continue to support natural and cultural resource management, including a preservation and maintenance program for Fort Jefferson. The NPS will continue to document and recommend management strategies for submerged cultural resources. The NPS will also continue to track the Stony Coral Tissue Loss Disease, that recently was detected in the park and will continue to treat impacted corals. These efforts are supported by park staff with overall technical direction provided by the NPS Submerged Cultural Resources Unit. Natural resource activities include continuation of park-funded science and monitoring to analyze the efficacy of the Dry Tortugas Research Natural Area, natural resource damage assessment and restoration, and monitoring of sea turtles. Natural resource activities are performed by DTNP natural resources staff, with technical and additional staff support provided by ENP (South Florida Natural Resources Center).
For more information, please visit http://www.nps.gov/drto/index.htm.

Everglades National Park (ENP)
Funding for ENP in FY 2022 will support area management activities, including operations, natural and cultural resource management, planning, maintenance, and ecosystem restoration. The park continues to attract significant national and international attention as a symbol of the effort to restore the Everglades and of the balance being sought in striving to secure south Florida's future. With more than 1.5 million acres of fragile resources, in excess of seven million people living within 100 miles of the park boundary (as of the 2010 census), and more than one million visitors each year, ENP has special challenges. The park engages in outreach programs to the local community and has traditionally sustained a large backcountry/wilderness operation.

The park operates major visitor use areas at Flamingo, Shark Valley, and Everglades City and oversees multiple concessions operations. Infrastructure requires extensive short-term maintenance, as well as long-term upgrades. The park has 82 miles of surfaced roads, 160 miles of trails, two campgrounds, 48 backcountry campsites, and two fee-collection stations.

The park continues to conduct management of invasive plants and animals in conjunction with restoration partners. This includes treatment of some of the last remaining infestations of Australian pine and melaleuca and efforts to slow the spread of and reduce impacts to wildlife from invasive tegus, Burmese pythons, and several other species. These activities are important

to protect park resources, and are also integral to achieving the outcomes envisioned with Everglades restoration. This funding and activity complements efforts and funding through the Critical Ecosystem Studies Initiative (CESI) (see below).

ENP remains one of the most ecologically complex parks in the nation and is unique in that it has an unprecedented four international treaty designations. It is home to approximately 750 native plant species, 61 of which are considered critically imperiled in south Florida, and hosts 39 species of orchids, of which 12 species are critically imperiled. More than 360 species of birds have been found in the park. Florida Bay, making up about 40 percent of the ENP area, is continuing to experience dramatic changes, including alterations between hypo- and hyper-salinity, increased turbidity, seagrass die-offs, and persistent and increasing spreads of algae blooms. Exotic plants have and are continuing to replace native plant communities in the park and adjacent natural areas. Exotic animals, particularly reptiles, have become a major natural resource management issue for the park.
For more information, please visit http://www.nps.gov/ever/index.htm.

Everglades Research—Critical Ecosystem Studies Initiative (CESI) ($4,014,000)

Since its inception in 1997, the CESI has been the primary investment by DOI to provide scientific information to advise restoration decision making and to guide its own land management responsibilities for South Florida Ecosystem restoration. CESI supports ecological and environmental monitoring and research, restoration project assessment, hydrologic and ecological model development, and information synthesis, enabling the provision of scientific information and insight needed to promote Everglades restoration and management success.

The CESI planned activities for FY 2022 will address major restoration and management issues and support multiple restoration projects listed below. While these projects are critical to increase our understanding of the natural system, the NPS, in parallel, will organize internal and external workshops in FY 2022 to prioritize scientific projects, monitoring, modeling, and synthesis efforts to better support CERP and non-CERP projects for the next 5 years. The NPS is also gradually expanding its research efforts and resources management to address impacts of climate change and sea level rise on the Everglades ecosystem and how Everglades restoration will mitigate those impacts.

Restoration Project Monitoring, Planning, Assessment, and Decision Support

- Assessing the monitoring network and protocol as decision support tools to determine if the monitoring program is adequately informing CERP and non-CERP projects. A statistical analysis will be conducted to check if the monitoring program is connected to formulated objectives from a restoration perspective, is developed with sufficient power to answer the questions asked, and is integrated into the management decision-making process.
- Implementing applied science and monitoring to fill gaps in the Mod Waters monitoring program through cooperative agreements that track the effects of the operation of the Mod Waters and C-111 SD projects on ENP resources.
- Continuing support of hydrologic, water quality, and ecological monitoring, modeling and synthesis of knowledge to improve forecasting capability and inform restoration project planning, design, implementation, and adaptive management and operations; this includes support of Mod Waters, TTNS, the Upper Taylor Slough project, and the CEPP.

- Initiating research in BCNP to provide an assessment tool and a water quality target for the WERP project. This is essential to increase understanding and develop a quantitative methodology to document CERP benefits to this ecosystem.
- Continuing development and management of biological and hydrologic databases that organize and protect information, along with development of decision support tools that enable rapid support for resource managers, decision makers, and the public about trends in NPS and DOI natural resources as they relate to resource management changes, restoration progress, and climatic events and variations; these databases contain more than 80 years of continuous measurements on some subjects.
- Continuing support of the Task Force, OERI, and DOI's oversight of the Everglades Restoration Initiative.
- Continuing support to OERI for the Department's cost-share responsibility for the CISRERP.

Invasive Exotic Species Management

- Increasing support of applied science on the effects of exotic invasive species on the natural resources of ENP, BCNP, and BNP and the development of methods of detection, suppression, and control of invasive species, especially invasive reptiles and plants; projects informing potential management of Burmese pythons and Argentine black and white tegus are ongoing.
- Developing innovative tools to improve control of invasive pythons, including: 1) evaluating feminizing hormones as a means to manipulate sex pheromones as a potential lure; 2) using radio telemetry to target removal of large reproductive snakes in otherwise unsearchable terrain; and 3) in conjunction with USGS, explore the feasibility of genetic biocontrol tools for pythons and other invasive reptiles.
- Working to control other invasive reptiles that threaten NPS resources. The NPS maintains a tegu trapping program and has removed approximately 3,000 tegus since 2012, with over 270 tegus removed through May in FY 2021, mostly from adjacent state-managed lands. The NPS is developing new tools to improve tegu bait type and trap style.
- Developing hyperspectral remote sensing technologies to detect and map invasive plants. This new tool will help delineate the spatial extent and the severity of infestation.
- Assessing fire management options to better control invasive exotic plants while protecting soils and native plants; ongoing analysis of the combined influence of freshwater flow restoration and fire management on coastal wetlands soils is particularly important to minimize saltwater intrusion impacts.

Florida Bay and Coastal Resource Management and Restoration

- Supporting marine and estuarine applied science and enhanced monitoring of the physical and ecological indicators of the health of Florida Bay, including monitoring and research of the 2015–2016 Florida Bay seagrass die-off and recovery and the cause and effects of associated algal blooms that persist in the bay.
- Assessing how freshwater flow restoration affects salinity and other environmental factors and can benefit seagrass habitat and recreational fishing.

Threatened and Endangered Species, Biodiversity, and Wildlife

- Monitoring and supporting research on the endangered CSSS to enhance the ability to manage this species during the next decade, as water inflows to ENP are redistributed.

- Continuing critical long-term hydrologic and biological monitoring projects that support assessments of the effect of restoration projects on Everglades species, habitats, and communities, including monitoring of fish and macro-invertebrates, plant communities, wading birds, waterfowl, and alligators and crocodiles.
- Developing a multi-species optimization tool for landscape planning and operational forecasting. This will allow water managers to identify water management benefits for a suite of ecological communities, while explicitly quantifying the potential costs to others (e.g., endangered species, wading birds, prey fishes, seagrasses, landscape responses).
- Investigating how complementary combinations of water management and fire management can best protect and restore Everglades biodiversity, including the improvement of habitat for endangered butterflies and CSSS populations.

Resilience and Sustainability of the Natural System

- Developing research and modeling projects focusing on investigating the effects of climate change on the Everglades and how Everglades restoration can best mitigate those effects.
- Initiating research to integrate a geospatial and ecological assessment of Everglades freshwater marshes and coastal habitat vulnerability to sea level rise at a landscape level. The vulnerability of freshwater marshes and coastal wetlands to future sea level rise needs to be understood in terms of how local, site-specific processes that control elevation changes aggregate in space and time to produce larger scale, basin level changes.
- Continuing to work on a research project to assess the net ecosystem exchange of carbon fluxes in coastal Everglades mangrove ecosystems, playing an essential role in the global carbon cycle. This study will advance our understanding of coastal vulnerabilities by integrating site specific information into larger scale profiles of carbon flux. These larger-scale processes can be influenced by watershed managers to correct, mitigate, delay, or avoid coastal water management challenges.
- Improving monitoring and reporting of salinity and ecological conditions within Florida Bay and Biscayne Bay. This will be critical to understanding the effects of Everglades Restoration efforts in light of climate change and sea level rise.

For more information, please visit https://www.nps.gov/ever/learn/scienceresearch.htm.

U.S. Department of the Interior - Fish and Wildlife Service (USFWS) ($9,897,000)

Resource Management

Ecological Services ($3,950,000)

These funds will allow the USFWS to continue coordination, technical assistance, and partnering efforts with the NPS, the USGS, Tribal governments, state agencies, and private organizations involved in the restoration of the South Florida Ecosystem. The funds for FY 2022 will also enable the USFWS to continue implementing the Multi-Species Recovery Plan, which provides a blueprint for protecting, conserving, and managing threatened and endangered fish and wildlife resources. The USFWS is undertaking comprehensive habitat-based strategies for restoration and

recovery of species. Examples include the establishment of panther conservation banks and multi-species management plans.

The USFWS will continue consulting with and providing technical assistance to the USACE, the NPS, and other federal agencies relative to those agency activities that potentially affect federally listed species. The USFWS continues its historically active role in reviewing applications for impacts on wetlands under the USACE's regulatory program. In addition to the analysis of direct, indirect, and cumulative impacts, the USFWS ensures that private development proposals are compatible with the CERP. The planning and building of several CERP components require careful review of applications by the local sponsor, mainly the SFWMD, through the USACE's regulatory process. In FY 2022, the USFWS will continue consultation with the USACE on the CERP, as well as other ongoing or new federal projects. Further, the USFWS will evaluate the potential need to list additional species pursuant to the ESA and develop cooperative agreements with landowners for the protection and conservation of listed species through Candidate Conservation Agreements, Safe Harbor Agreements, and Habitat Conservation Plans.

Also included in this program category, the South Florida Coastal Habitat Restoration Program actively forms partnerships with other federal and state agencies, local governments, nongovernmental entities, and private property owners to implement on-the-ground restoration projects as well as to conduct research, monitoring, and public outreach activities. The Coastal Program complements the larger, more comprehensive South Florida Ecosystem Restoration Initiative by implementing immediate on-the-ground actions designed to protect, conserve, and restore coastal living resources. For the past several years, the importance of on-the-ground restorative actions has been reflected by the distribution of half of the Coastal Program's budget toward actual habitat restoration.

In FY 2022, the USFWS will address new USACE project starts and continue to be actively involved in threatened and endangered species consultation and recovery, private land partnerships, environmental contaminant reviews, coastal restoration projects, preparation of Fish and Wildlife Coordination Act reports, system-wide water quality improvement, and myriad multi-agency planning, science, and outreach efforts. The USFWS will ensure that ecosystem benefits are maximized consistent with Everglades restoration goals. The role of the USFWS will be to support and advance adaptive management and the principal goals of Everglades restoration.

Refuges and Wildlife ($5,144,000)
The NWRS has embarked on strategically and collaboratively addressing the mounting challenges faced with conserving America's wild plants, fish, and animals and their habitats in our rapidly changing world. These efforts are finding new ways to conserve America's wildlife and wildlife places. Management focuses on scientific excellence at a landscape scale for the benefit of a diverse public while nurturing the next generation of conservation leaders. The mission of the NWRS is to administer a national network of lands and waters for the conservation, management, and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats for the benefit of present and future generations of Americans.

The NWRS administers 17 refuges in central and south Florida. Resource management funds will foster the restoration and management of lands and protection of fish and wildlife including

migratory birds and threatened and endangered species. These funds will support operations and management of refuges to address ecosystem restoration efforts, and impacts and threats associated with urban development, increased freshwater demands, sea level rise, and a warming climate. The following are supported refuges:

> Everglades Headwaters, Lake Wales Ridge, Pelican Island, Archie Carr, Arthur R. Marshall Loxahatchee, Nathaniel P. Reed Hobe Sound, J.N. Ding Darling complex, (including the Caloosahatchee, Island Bay, Matlacha Pass, and Pine Island refuges), Florida Panther, Ten Thousand Islands, and refuges in Florida Bay and the Florida Keys, including Crocodile Lake, National Key Deer, Great White Heron, and Key West refuges.

Migratory Birds ($92,000)
While coordinating with the Service's South Florida Ecological Services Field Office and the Loxahatchee NWR, the Division of Migratory Birds works cooperatively with the FWC and the SFWMD to provide technical expertise relative to MBTA implications on the various CERP projects, especially for avian protection plans and management of invasive exotics species such as the purple swamp hen. Effective implementation of the CERP with the cited partners, the USACE, the NPS, and others is critical to restoring water quantity, quality, timing, and distribution for the benefit of people, migratory birds, and other wildlife and their habitats.

Law Enforcement ($568,000)
Funding will be used to enhance law enforcement's ability to handle the quickly escalating regional workload. There has been a marked increase in the illegal trafficking of exotic protected species and the unlawful "taking" of endemic species protected by the ESA and the MBTA throughout south Florida. Southwest Florida is one of the most ecologically sensitive and rapidly growing areas of the State of Florida, requiring the highest priority for establishing an increased law enforcement presence. Funding will allow the purchase of vehicles, boats, and marine equipment needed by law enforcement personnel to conduct investigations in remote areas.

Additional personnel will be detailed to "task force" enforcement operations within the ecosystem as needed. Increased efforts to educate the public regarding the law and illegal activities will be emphasized.

Fisheries ($143,000)
Efforts will be directed toward restoration of anadromous and coastal fish species in south Florida. Emphasis will be placed on ensuring that non-indigenous fish species are adequately evaluated for potential effects on restoration activities.

U.S. Department of the Interior - U.S. Geological Survey (USGS) ($8,192,000)

Greater Everglades Restoration—Integrating Research, Planning, and Interagency Coordination

South Florida is particularly vulnerable to the introduction and spread of invasive plants and animals and is home to a wide variety of non-native species, such as melaleuca trees, Old World climbing ferns, the Burmese python, and most recently, the Argentine black and white tegu. In FY 2022, the USGS will continue to support high-priority research needs identified by the Task

Force through its Invasive Exotic Species Strategic Action Framework and requested by DOI and other partners.
(For more information, please seehttps://www.evergladesrestoration.gov/invasive-exotic-species-strategic-action-framework)

The Task Force-led Strategic Action Framework process included participation from federal, state, and local governments; Tribes; NGOs; academia; and private citizens, and it was updated in FY 2021. Analysis identified early detection and rapid response (EDRR) as the best way to stop invasive species early in their invasion process. It also identified the need for a risk assessment framework to help natural resource managers decide how to allocate limited resources in the face of new invasive threats. An initial framework was developed by the USGS and is now being used by partner agencies. Research will focus on aspects of EDRR, such as using environmental DNA (eDNA) to determine the northern extent of the Burmese python expansion; examining the biology, distribution, and impacts of tegus and pythons; collecting vital rate date to better understand python life history, which will support the development of population models and decision support tools to develop better monitoring and management efforts; finalizing a synthesis document summarizing all research on Burmese pythons, and beginning an exploratory program to evaluate the feasibility of synthetic biology approaches to Burmese python control.

Greater Everglades Restoration Alternatives

The USGS will maintain existing products such as the Everglades Depth Estimation Network (EDEN, https://sofia.usgs.gov/eden) the publicly accessible, field-scale, physical model of sheet flow, the relationships between restoring hydropattern (i.e., the time series of water levels) and water quality, and the existing global-scale climate models that were downscaled for use on the Everglades system. The USGS will start to develop single-species models to predict the possible impacts of different Everglades restoration alternatives.

Everglades Water Quality and Water Flow

The USGS provides science to support management and restoration of America's Everglades in collaboration with federal and state partners, including the USACE and the SFWMD. The USGS will continue its two-decade investigation into the driving forces behind the mercury problem, which results in fish consumption advisories throughout the Everglades. USGS scientists have identified sulfate as one of the primary drivers of mercury methylation – the conversion of elemental mercury to its most toxic form. The USGS also monitors water flows from the Everglades into Florida Bay and the Gulf of Mexico. The Groundwater and Streamflow Information Program/Water Observing System Program provides cooperative matching funds for groundwater monitoring in the Everglades, which supports monitoring of water levels in approximately 290 groundwater wells; cooperative matching funds for surface-water monitoring in the Everglades, which supports water-level only or water-level and streamflow monitoring at 63 streamgages; and Federal Priority Streamgage funds to support water-level and streamflow monitoring at one streamgage in the Everglades. Finally, a new initiative is beginning to examine what leads to the formation of harmful algal blooms (HABs) causes by blue-green algae.

Federal Everglades Ecosystem Restoration Projects

The Southeast Climate Adaptation Science Center will provide ad hoc technical assistance on climate science and data needs to support the Everglades area.

U.S. Department of the Interior - Bureau of Indian Affairs (BIA) ($380,000)

In FY 2022, $380,000 will be used for continuing efforts to restore the South Florida Ecosystem for the Seminole Tribe of Florida and the Miccosukee Tribe of Indians of Florida. That funding ($190,000 each) is included within each Tribe's base funding and is provided to support research, studies, and planning on water quality and distribution systems; ecosystem development and management; and planning for compliance with the ESA in stormwater areas on the Seminole and Big Cypress reservations.

U.S. Environmental Protection Agency (USEPA) ($5,700,000)

The USEPA priorities for restoring and protecting the South Florida Ecosystem in FY 2021 include continuing to work with the USACE and the State of Florida to implement the CERP via the USEPA authorities under the Clean Water Act and the NEPA through the following activities:

- Provide support for Everglades Water Quality Restoration Strategies;
- Provide one EPA staff member co-located with the USACE to promote early engagement efforts and face-to-face opportunities for the CERP and other south Florida activities.

In addition, the USEPA anticipates carrying out the following activities during FY 2022. Some areas are pending the availability of South Florida Geographic Initiative (SFGI) funding:

- Serve as co-chair, with the FDEP, for the FKNMS Water Quality Protection Program (WQPP) to adopt enforceable pollution control measures and BMPs to reduce or eliminate point and nonpoint source pollution impacting the FKNMS;
- Implement the comprehensive long-term monitoring programs (water quality, coral reef, and seagrass), special studies, data management, and public education components of the FKNMS WQPP as required by the National Marine Sanctuaries Program Act of 1990;
- Aid in the protection of southeast Florida coral reef ecosystems by the reduction of land-based sources of pollution on a watershed scale including the control of discharges from point sources and trash entering waterways; and
- Provide funding opportunities for various water quality and ecosystem monitoring efforts throughout south Florida.

Specific areas of focused funding for FY 2021 grants include stormwater pollutant reduction, water quality connectivity, non-municipal wastewater sources, public education and outreach, and water quality in Key West Harbor and the adjacent marine ecosystem within the Florida Keys. Within the wider context of south Florida, funding will also be focused on: Florida Reef Tract coral health, harmful algal blooms, water quality and seagrass monitoring, aquatic habitat restoration, reducing trash entering water, analyses of existing water quality data, sponge restoration techniques, and impacts of contaminants of emerging concerns on South Florida Aquatic Ecosystems.

For more information, please visit:
http://ocean.floridamarine.org/fknms_wqpp/home.htm
https://www.epa.gov/everglades

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Section 3.0

State of Florida Everglades Ecosystem Restoration Projects and Funding Requests

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Section 3.1: State of Florida Comprehensive Everglades Restoration Plan (CERP) Projects and Funding Requests ($305,070,508)

Florida Department of Environmental Protection (FDEP) ($273,461,850)

The implementation of the CERP is a high priority for the FDEP, in partnership with the SFWMD, other state, federal, and local agencies, tribes, and environmental groups.

The FDEP administers the Save Our Everglades Trust Fund (SOETF), which is used to pay for a portion of the State's share of CERP (https://floridadep.gov/eco-pro). Additional Everglades restoration funding from the Land Acquisition Trust Fund (LATF) is used to fund CERP, the Northern Everglades and Estuaries Protection Program (NEEPP), and the Restoration Strategies Regional Water Quality Plan (Restoration Strategies), which will be discussed further in section 3.2. The Florida Legacy bill was signed into law during the 2016 legislative session and provides continual funding beginning in FY 2017-18 with a minimum of $200 million for Everglades project implementation with a preference given to projects that reduce harmful discharges from Lake Okeechobee to the St. Lucie or Caloosahatchee estuaries. The 2018 legislative session saw the passage of Senate Bill (SB)10 which provides $64,000,000 annually for the implementation of the EAA A-2 Reservoir and associated projects.

The Governor's "Florida Leads" FY 2021-22 budget for CERP includes a total of $273,461,850. Project funds will be distributed through the FDEP to the SFWMD for the planning, design, engineering, and construction of various CERP projects including the C-43 West Basin Storage Reservoir, BBCW, CEPP, IRL-South, CERP Planning, and the EAA Reservoir and associated projects.

The FY 2021-22 budget included another $50 million for the design, engineering, and construction of the specific project components designed to achieve the greatest reductions in harmful discharges to the Caloosahatchee and St. Lucie Estuaries as identified in the CERP Lake Okeechobee Watershed Restoration Project (LOWRP) PIR.

Additional funding not included in the above total, but part of the Governor's Budget, includes $58,993,065 for Everglades restoration including CERP and Restoration Strategies projects, and $48 million provided for C-51 Restoration, to provide restorative flows to parts of the Everglades.

Office of Water Policy and Ecosystems Restoration

The Office of Water Policy and Ecosystems Restoration (OWPER) oversees implementation of CERP projects. Tasks include policy, regulatory, planning, program coordination, technical and engineering support, and coordination with other FDEP staff regarding issues related to CERP and non-CERP projects. Projects funded during FY 2020-21 include the EAA A-2 Reservoir, C-43 West Basin Storage Reservoir , C-44 Reservoir & STA, LOWRP, C-23 to C-44 Interconnect Project, WERP, BBCW, Picayune Strand Restoration project, CEPP South, and CERP Planning.

Waste Management in Tallahassee

Tasks include technical support and review of potential impacts from residual agrochemicals on lands acquired for CERP restoration projects.

Florida Fish and Wildlife Conservation Commission (FWC) ($5,244,399)

FWC contributes to CERP projects by providing technical assistance to the sponsoring agencies, ensuring that CERP activities address the needs of fish and wildlife and their associated habitats. The Office of Conservation Planning Services facilitates official consultations for CERP projects through various processes including inter-agency planning teams, the Coastal Zone Management Act, the Fish and Wildlife Coordination Act, and the NEPA.

FWC's Office of Strategic Initiatives (OSI) identifies and coordinates programs with boundary-spanning implications that benefit wildlife and their habitats. FWC maintains an Everglades Coordinator position housed within OSI that leads an agency organized inter-divisional team to prioritize and coordinate the agency's contributions to all South Florida Ecosystem restoration activities including CERP.

FWC's CERP related funding includes positions and salaries that directly support CERP planning, implementation, monitoring, and restoration. These include staffing various project and RECOVER teams, providing biologically based recommendations to state and federal water managers, and conducting various monitoring and management programs related to state and federally listed species within CERP project areas.

CERP related expenditures for FY 2020-21 were impacted by the COVID-19 pandemic but remained at a high level to facilitate good progress and support restoration. Many facilities and laboratories were closed for portions of the year and many programs with field components were impacted by access restrictions. Some of the most prevalent impacts were observed in the RECOVER field monitoring programs and field based restoration activities whereas activities tied to CERP planning efforts were less affected. CERP related projects that were delayed due to the pandemic response are generally scheduled in the FY 2021-22 time frame and are reflected in the increased funding request for FY 2021-22.

South Florida Water Management District ($26,364,259)

The SFWMD is the local sponsor for the majority of the 68 projects included in the CERP. Planning, design, and construction are currently underway on some of these projects. While some projects are in the planning and design phase, others such as the IRL-S C-44 Reservoir and STA Project, C-43 Reservoir Project, Picayune Strand Restoration Project, BBCW Phase I, CEPP, and the LOWRP Aquifer Storage and Recovery (ASR) wells are currently under construction.

The IRL-S restoration project will reduce harmful freshwater inflows and generate habitat and water quality improvements in the St. Lucie Estuary and the Indian River Lagoon. The SFWMD has completed construction of the C-44 Communication Tower, the S-404 System Discharge structure and the S-401 Pump Station. The 6,300-acre C-44 STA and Reservoir, which can store up to 50,600 acre-feet of water, were completed in 2021. The project construction includes up to a year of operational testing and monitoring through 2022.

The Picayune Strand Restoration project will restore natural sheetflow to enhance wetlands in the 55,000-acre Picayune Strand and provide more natural freshwater inflow to the Ten Thousand Islands National Wildlife Refuge. The SFWMD initiated construction of the Manatee Mitigation Feature of the Picayune Strand Restoration Project in late Spring 2015 and construction is now complete. The operational testing and monitoring periods for the Merritt, Faka Union, and Miller pump stations are complete, and the facilities have been transferred to the SFWMD for long term operations and maintenance. The upper three miles of the Faka Union Canal is currently being plugged and the final roads and logging trams are being removed. The construction of the southwestern protection feature is in progress and the acquisition of remaining project lands in the Belle Meade area is underway with most parcels now in SFWMD ownership.

The C-43 West Basin Reservoir Project will capture and store approximately 170,000 acre-feet of Lake Okeechobee regulatory releases, improving salinity balance for the Caloosahatchee Estuary by controlling peak flows during the wet season and providing essential flows during the dry season. Preloading, demolition work, and construction of the irrigation pump station (195 cfs) is complete. The intake pump station (1500 cfs) and embankment construction is underway and scheduled for completion in September 2024.

The CEPP includes a suite of storage, treatment, conveyance, and seepage management measures that will provide the necessary components to deliver additional fresh water from Lake Okeechobee south to WCA 3, ENP, and Florida Bay. The project was first authorized by Congress in 2016 and amended in 2018 and 2020. There are several CEPP South components currently in design or under construction including: the S-356E pump station, the S-334E structure located in the L-29 Canal, adding new structures to L-67A, filling agricultural ditches, removing a portion of the L-67C levee, and the S-355W divide structure. Construction of the S-333N structure to increase the conveyance capacity is complete and removal of approximately 5 miles of Old Tamiami Trail will be complete in FY 2021. These project features facilitate additional deliveries of water from WCA 3A directly to ENP and aid in alleviating the high-water conditions being experienced in WCA 3A.

In September 2020, the SFWMD and USACE started the process of completing a Validation Report for the CEPP North Phase. The CEPP North component currently under design by the SFWMD is the L-6 Diversion. This feature is anticipated to be completed in 2025 and will move water into and through the northwest portion of WCA 3A in conjunction with other CEPP North conveyance components. Congress approved the CEPP Post Authorization Change Report (PACR), which included additional canal conveyance, 240,000 acre-feet of storage, and 6,500 acres of treatment south of Lake Okeechobee, in WRDA 2018 as amended in WRDA 2020. These changes were intended to further reduce the volume of damaging discharges from Lake Okeechobee to the northern estuaries and to provide increased conveyance south to the Everglades. For the CEPP EAA Phase 1, a SFWMD-USACE Project Partnership Agreement (PPA) was executed on April 29, 2021 and SFWMD-FDOT Local Funding Agreements for design and mitigation of US 27 bridges over the proposed A-2 Inflow-Outflow Canal were executed on June 4, 2021. To date, the SFWMD's contractors have made significant progress with respect to construction of the A-2 STA portions of the Inflow-Outflow and Seepage Canals, and the SFWMD has recently awarded a contract for build out of the entire A-2 STA.

The purpose of the Lake Okeechobee Watershed Restoration Project (LOWRP) is to improve the ecology of Lake Okeechobee, decrease regulatory releases to the St. Lucie and Caloosahatchee estuaries, restore freshwater wetlands in the watershed, and improve water supply for existing legal water users. A Final Integrated Project Implementation Report and Environmental Impact Statement was released in August 2020 for public review. A Final Chief's Report and Congressional Authorization is pending for the project. The recommended plan includes construction of up to eighty (80) ASR wells located in clusters in various locations throughout the Lake Okeechobee watershed. The Florida State Legislature appropriated funding to the SFWMD for the design, engineering, and construction of the specific project components designed to achieve the greatest reductions in harmful discharges to the Caloosahatchee and St. Lucie Estuaries, and is proceeding with the construction of the ASR Well program.

The SFWMD and USACE completed the Integrated Delivery Schedule (IDS) in 2015 and updated it again in 2018, 2019, and 2020 based on funding availability from the implementing agencies. The 2020 IDS was completed in October 2020. In accordance with this publicly supported project delivery schedule, several projects were added to the planning phase as initiated or proposed. The Final Integrated PIR and Environmental Impact Statement for the Loxahatchee River Watershed Restoration Project was published in the Federal Register in February 2020 and authorized within WRDA 2020. In July 2020, the agencies kicked off the BBSEER planning study, which includes six CERP components in Miami-Dade County. The WERP is scheduled for authorization in WRDA 2022. The LOWRP was not budgeted in the President's FY 2022 budget appropriations but plans are to move forward with data collection and monitoring.

In addition to the projects listed above, the SFWMD partners with the USACE on several other projects. The Melaleuca Mass Rearing Annex project to raise biological control agents to aid in the eradication of exotic plant species in the Everglades was the first CERP project transferred into the operations and maintenance phase under the 50/50 cost share agreement between the USACE and the SFWMD. The C-111 West Spreader Canal, BBCW, and Broward County Water Preserve Areas are in different stages of design , construction or operation.

The status of these projects can be found in the Everglades Restoration Progress document at https://www.sfwmd.gov/our-work/everglades.

Section 3.2: State of Florida Non-CERP Everglades Ecosystem Restoration Projects and Funding Requests ($669,348,222)

Florida Department of Agriculture and Consumer Services (FDACS) ($23,232,449)

Under the Florida Watershed Restoration Act (section 403.067, F.S.), the FDEP is charged with identifying impaired surface waters and establishing total maximum daily loads (TMDLs) for pollutants entering the impaired waters. Once a TMDL is adopted, the FDEP develops and adopts a basin management action plan (BMAP) for the applicable watershed. In South Florida, BMAPs have been developed for the Lake Okeechobee, St. Lucie, and Caloosahatchee basins. The BMAPs outline the load allocations for different source inputs and specific activities that stakeholders must undertake to reduce pollutants to meet the applicable TMDL. In watersheds with adopted BMAPs, nonpoint source agricultural landowners are required to either enroll in and implement the FDACS' BMPs or conduct water quality monitoring prescribed by the FDEP or a water management district. The FDACS has adopted by rule BMPs for cow/calf, citrus, vegetable and agronomic crops, nurseries, equine, sod, dairy, poultry, specialty fruit and nut, forestry, and silviculture operations. The FDACS Office of Agricultural Water Policy also works with agricultural landowners outside of BMAPs to implement water quality and water conservation BMPs to further water resource protection and ecosystem restoration. The FDACS provides technical and financial assistance to producers for the implementation of prioritized BMPs, as well as other innovative practices and projects. Some examples of other practices and projects include advanced precision agricultural practices, structures for onsite water management, wetland restoration, floating aquatic vegetative tilling, and hybrid wetlands treatment technology. BMPs are just one strategy used to achieve pollutant reductions within BMAPs. Other strategies and projects must also be implemented.

The FDACS also plays an important role in the management of public lands through the Florida Forest Service, which is the lead managing agency on the Picayune State Forest (Southern Golden Gate Estates and Belle Meade) and is the state agency responsible for wildfire suppression and prevention and forest protection in south Florida.

Florida Department of Environmental Protection (FDEP) ($139,861,306)

The FDEP's non-CERP South Florida Ecosystem restoration priorities include implementation of the Everglades Forever Act, Restoration Strategies, and the NEEPP. (https://floridadep.gov/eco-pro). The Governor's "Florida Leads" FY 2021-2022 budget includes funding for the following programs: $63,475,000 for Restoration Strategies (a series of projects designed to improve water quality in the Everglades Protection Area) and $71,386,306 for the implementation of the NEEPP and water storage projects that provide relief from discharges to the St. Lucie and Caloosahatchee rivers and estuaries. The budget also includes $5 million distributed through the FDEP to the SFWMD for Dispersed Water Management, a shallow water storage program initiated by the state that retains water on public and private lands providing local basin runoff relief.

The Governor's enacted budget also includes an additional $10 million for the purpose of supporting the evaluation and implementation of innovative technologies and short-term

solutions to combat or clean up harmful algal blooms and nutrient enrichment of Florida's fresh waterbodies, including lakes, rivers, estuaries, and canals.

In addition, the FDEP implements water quality improvement programs for the Clean Water Act Section 303d-listed water bodies; ecosystem restoration project management; watershed planning and coordination activities; BMAPs; and research and monitoring. The FDEP Office of Resilience and Coastal Protection manages more than 4 million acres of submerged lands and coastal uplands in Florida. With support from the NOAA, this office manages 41 aquatic preserves, three National Estuarine Research reserves, the FKNMS, and the Coral Reef Conservation Program. For more information, please visit: https://floridadep.gov/rcp https://floridadep.gov/dear/water-quality-restoration/content/basin-management-action-plans-bmaps

Non-CERP projects funded during FY 2020/21 include Restoration Strategies, Lakeside Ranch STA, C-111 SD land acquisition, Lake Hicpochee North Hydrologic Enhancement Project, Dispersed Water Management projects, and C-43 Water Quality Treatment Projects.

Florida Fish and Wildlife Conservation Commission (FWC) ($58,005,024)

FWC stewards the state's executive responsibility for managing Florida's freshwater, marine, and terrestrial fish and wildlife. To meet this mission, the agency contributes to South Florida Ecosystem restoration and conservation both operationally and through partnerships. Operations: Four of the agency's divisions manage fish and wildlife resources (Division of Freshwater Fisheries Management, Division of Habitat and Species Conservation, Division of Hunting and Game Management, and Division of Marine Fisheries Management), while the Division of Law Enforcement ensures that conservation laws protecting fish, wildlife, and their habitats are enforced. The Fish and Wildlife Research Institute (FWRI) administers the research and monitoring programs that support the FWC's mission and integrates research activities with management efforts of other divisions and partnering programs. The FWRI plays a key role supporting the CERP's RECOVER program through dedicated seagrass monitoring, oyster monitoring, fisheries independent monitoring, and RECOVER team support. FWC programs also support imperiled species management, freshwater and marine fisheries management; non-native species research, management, and removal; aquatic and terrestrial invasive plant management, and the recovery of endangered species such as the Florida panther, Everglade snail kite, red-cockaded woodpecker, marine mammals, and stony corals.

The FWC is either sole manager or a partnering manager on over three million acres of public lands throughout the South Florida Ecosystem. FWC contributes to state land acquisition programs targeting lands within or contiguous to areas currently managed by the agency. Further, FWC administers an on-going lake enhancement and restoration program to maintain quality habitat for wetland-dependent fish and wildlife.

Partnerships and Outreach: Partnerships with other governmental agencies (local, state, and federal), NGOs, and individuals help achieve conservation goals for wildlife. Working with

partners, the FWC provides both technical assistance and grant support to build public-private conservation partnerships with Florida landowners wishing to sustain fish and wildlife habitat on their properties. FWC partnerships also support the agency's broad outreach goals that encourage the responsible use of natural resources, education, and conservation.

FWC's Non-CERP Everglades ecosystem restoration project expenditures for FY 2020-21 were impacted by the COVID-19 pandemic but remained at a high level to facilitate good progress and to support restoration. Many facilities and laboratories were closed for portions of the year and many programs with field components, including the Division of Law Enforcement, were impacted by the pandemic response. Projects that were delayed due to the pandemic response are generally scheduled in the FY 2021-22 time frame and are reflected in the increased funding requested for FY 2021-22.

The FWC's planned funding for South Florida Ecosystem restoration during FY 2021-22 includes:

- Division of Habitat and Species Conservation ($37,273,699)
- Law Enforcement ($24,697,002)
- Division of Freshwater Fisheries ($476,000)
- Fish and Wildlife Research Institute ($709,961)

Florida Department of Transportation (FDOT) ($19,747,518)

The FDOT is a leader among transportation agencies in the nation for protecting wildlife, restoring habitat and redesigning roadways to restore natural water flow to over-drained areas. A notable expenditure in this fiscal year's plan is the FDOT District Six Tamiami Trail project along SR 90 / US 41 / Tamiami Trail, in western Miami-Dade County. This is entirely an Everglades restoration project to restore more natural flow to ENP and Florida Bay, restoring habitat within ENP and ecological connectivity between ENP and the WCAs.

The FDOT's expenditures for South Florida Ecosystem restoration during FY 2020-21 was $8,756,201 and included:

- Exotic and endangered/threatened species survey ($356,817)
- Research to determine the effectiveness of wildlife crossings ($762,200)
- Mitigation maintenance and monitoring ($227,950)
- Removal of exotic vegetation ($1,274,953)
- Wildlife and wetland mitigation ($326,947)
- Panther mitigation ($1,000)
- Water quality study ($5,000)
- Seagrass and mangrove mitigation ($108,360)
- Everglades restoration ($5,689,973)

The FDOT's planned funding for South Florida Ecosystem restoration during FY 2021-22 is $19,747,518 and includes:

- Exotic and endangered/threatened species survey ($325,168)
- Research to determine the effectiveness of wildlife crossings ($126,000)
- Mitigation maintenance and monitoring ($210,000)
- Removal of exotic vegetation ($1,361,174)
- Wildlife and wetland mitigation ($981,676)
- Panther mitigation ($15,000)
- Water quality study ($2,500)
- Seagrass and mangrove mitigation ($460,000)
- Everglades restoration ($16,266,000)

South Florida Water Management District (SFWMD) ($428,501,925)

The SFWMD is implementing the Long-Term Plan by including the structural and vegetation enhancements to the existing STAs, implementing BMPs, and working to ensure integration with CERP projects. In Water Year (WY) 2021 (May 1, 2020 – April 30, 2021), the STAs treated approximately 1.6 million acre-feet of water and recorded good annual performance, retaining 78% of phosphorus from water flowing through the treatment cells and treating water to a flow-weighted mean concentration of 24 parts per billion of phosphorus. During the water year, the STAs removed approximately 207 metric tons of phosphorus.
For more information, please visit: http://www.sfwmd.gov/sta.

During WY 2021, BMPs in the EAA resulted in a 68% reduction in phosphorus, exceeding the 25% statutory requirement. For the eleventh consecutive year, BMPs in the C-139 Basin complied with the requirement of maintaining historic phosphorus loads. Additionally, the SFWMD works closely with the FDEP and other local, state, federal, and Tribal governments on other non-CERP programs to restore and protect the South Florida Ecosystem.
For more information, please visit: https://www.sfwmd.gov/bmps.

During the 2013 legislative session, the Everglades Forever Act (EFA) was modified to incorporate the Restoration Strategies Regional Water Quality Plan, dated April 27, 2012, into the Long-Term Plan. Since the EFA and National Pollutant Discharge Elimination System permits and consent orders were issued in September 2012, six Restoration Strategies projects have been completed, seven others are ongoing, and 61 of 74 consent order milestones have been achieved, 49 of them ahead of their deadlines. In 2018, the SFWMD updated the *Science Plan for the Everglades Stormwater Treatment Areas* to identify studies that investigate the critical factors that collectively influence ultralow treatment performance and phosphorus reduction in the STAs. Seven studies have been completed and seven are under-way.
For more information, please visit: http://www.sfwmd.gov/restorationstrategies.

As part of an ongoing effort to maximize water storage in the greater Everglades system, SFWMD continues to partner with agencies and private landowners to bolster private-public partnerships and projects on public lands. Detaining or treating water on public and private lands is one tool to help reduce the amount of water flowing into Lake Okeechobee and/or discharged to the Caloosahatchee and St. Lucie estuaries during times of excess water conditions throughout the regional stormwater systems. During WY2021, the 22 operational projects provided an estimated

135,500 acre-feet (167.1 million cubic meters) of storage across the Northern Everglades watersheds, based on preliminary data. Also, four storage projects were in the planning, design/permitting, or construction phase, with one of these planned to be fully constructed by the end of FY 2021.
For more information, please visit: http://www.sfwmd.gov/storage.

Restoration of the Northern and Southern Everglades is integral to the core mission of the SFWMD and several initiatives and construction projects are now underway to revitalize and protect the South Florida Ecosystem. The SFWMD's priority non-CERP South Florida Ecosystem restoration and protection projects for FY 2021-22 include:

- Restoring the Kissimmee River and floodplain (in cooperation with the USACE) through construction, backfilling 22 miles of canal, reshaping 9 miles of remnant river channel, rehydrating 25,000 acres of river floodplain, and a comprehensive ecological evaluation program.
  For more information, please visit: http://www.sfwmd.gov/kissimmee.
- Implementing the C-111 SD project to improve hydrologic conditions in Taylor Slough, its headwaters, the Rocky Glades, and the eastern panhandle of ENP and to increase freshwater flows to northeast Florida Bay.
- Continuing implementation of NEEPP and associated watershed protection plans for the three northern watersheds (Lake Okeechobee, St. Lucie, and Caloosahatchee). For more information, please visit: http://www.sfwmd.gov/northerneverglades.
- Continuing implementation of provisions in the EFA and Long-Term Plan including STA operation and optimization, regulation, managing invasive exotic and nuisance vegetation on SFWMD lands, and implementing cost-effective solutions to improve water quality treatment, reduce nutrient loads, and achieve water quality standards. For more information, please visit: http://www.sfwmd.gov/sta.
- Updating and implementing regional water supply plans. For more information, please visit: https://www.sfwmd.gov/our-work/south-dade-projects
  For more information, please visit: http://www.sfwmd.gov/watersupply.
- Operating and maintaining one of the largest flood control systems in the world that includes over 650 water control structures, 621 project culverts, 77 pump stations, approximately 2,100 miles of canals, and 2,000 miles of levees/berms.
- Constructing 8.5 Square Mile Area Limited Curtain Wall to reduce seepage from current and future restoration flows to Northeast Shark River Slough in ENP. For more information, please visit: https://www.sfwmd.gov/our-work/south-dade-projects.

The Florida Legislature also requires the SFWMD to: manage water and related land resources; promote conservation, development, and use of surface and groundwater for reasonable beneficial uses; manage dams, impoundments, and other "Works of the District" to provide water storage; prevent flood and soil erosion damage; and promote outdoor recreation on publicly owned lands.

In addition to ecosystem restoration projects, the SFWMD expends a significant amount of staff time and contract dollars toward implementation of restoration program support activities such as land management, control of invasive exotic plants and animals, environmental resource permitting, and intergovernmental coordination.

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Section 4.0

Agency Contacts

The following individuals are designated as points of contacts concerning their agency information as provided in this Document.

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