Appendix 8-3: List of Completed and Planned Projects and Activities in the Lake Okeechobee Watershed

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Table 1. A comprehensive list of completed and planned projects and activities to improve the quantity, quality, timing, and distribution of water in the Lake Okeechobee Watershed.

Type	Project/Activity	Description	Phase
Program	FDACS Agricultural BMPs – Owner-Implemented and Cost-Share	The FDACS utilizes incentive-based methods to encourage enrollment in their agricultural nonpoint source BMP programs. Incentives for agricultural operations to enroll in the FDACS BMP Program include a presumption of compliance with state water quality standards, pursuant to Chapter 403.067, F.S., and eligibility to participate in cost-share programs that provide assistance with BMP implementation. To date, the FDACS has adopted BMP manuals for most agricultural commodities, both regionally and statewide. Currently, manuals for container nursery and vegetable and agronomic crops are being revised to incorporate BMPs for in-ground nursery, and sugar cane and caladiums, respectively. Total agricultural and rangeland acreage in the Lake Okeechobee Watershed is approximately 2,150,000 acres, of which approximately 1,600,000 acres (74%) have been enrolled in the FDACS BMP Program.	Implementation
Program	SFMWD Regulatory Source Control Program 40E-61 F.A.C)	Chapter 40E-61, F.A.C., the Lake Okeechobee Works of the District Rule, is the District's regulatory nutrient source control program for the lake. It was originally authorized by the Surface Water and Improvement Management Act (1987), which eventually became NEEPP in 2007. Continue implementing existing Chapter 40E-61, F.A.C., WOD rules: issuing permits, approving phosphorus control plans, verifying compliance with permit conditions, and monitoring water quality to determine if water quality goals are met.	Implementation
Program	FDEP – Basin Management Action Plan	A BMAP is the "blueprint" for restoring impaired waters by reducing pollutant loadings to meet a Total Maximum Daily Load (TMDL). In early 2013, the FDEP initiated development of a BMAP for the LOW. The LOW BMAP will build upon the decade plus work already done under the LOWPP. The BMAP is being developed collaboratively with existing and new stakeholders and will work in combination with the regulatory programs and provide for an enforceable framework necessary to achieve restoration. These actions, coupled with the SFWMD Lake Okeechobee watershed protection plan, make for a comprehensive suite of actions developed by the coordinating agencies to address Lake Okeechobee restoration.	Development
Program	Environmental Resource Permit (ERP) Program	Permit program that regulates activities in, on, or over wetlands or other surface waters and the management and storage of all surface waters.	Implementation

Type	Project/Activity	Description	Phase
Program	NPDES Stormwater Program	The NPDES is a federal program established by Section 402 of the Clean Water Act. The NPDES Program requires point source dischargers to obtain permits that place limits on the type and quantity of pollutants that can be released into the nation's waters. The USEPA has delegated the authority to the FDEP to administer the NPDES Program.	Implementation
Program	Florida Yards and Neighborhoods	Through the Florida Yards and Neighborhoods Program, a sub-program of the Florida-Friendly Landscaping Program, citizens and builders about proper landscape design to minimize nutrient loading to Lake Okeechobee by reducing use of pesticides, fertilizers, and irrigation water.	Implementation
Program	Dispersed Water Management – Overview	The DWM Program is a multi-faceted approach to working cooperatively with public and private land owners to identify, plan and implement mechanisms to retain or store water. The total storage, retention and detention created by the Dispersed Water Management Program since 2005 is approximately 49,600 ac-ft, which includes contributions from the USDA NRCS WRP and other programs, the FDACS BMP Program, agricultural landowners, agricultural organizations, NGOs, and local governments.	Implementation
Program	Dispersed Water Management – Public Lands	Projects on public land enhance Lake Okeechobee and estuary health by reducing discharge volumes and nutrient loading to downstream receiving waters through modifications to existing water management structures and implementation of operational strategies. In many cases, storage, retention and detention is obtained by increasing the discharge control elevation of on-site drainage facilities or impounding water in shallow retention and detention areas. There are several projects that fall in this category, which are in various stages of implementation. Additional opportunities continue to be investigated.	Implementation
Program	Dispersed Water Management – Private Lands	Projects on private land enhance Lake Okeechobee and estuary health by reducing discharge volumes and nutrient loading to downstream receiving waters through modifications to existing water management structures and implementing operational strategies. In many cases, storage, retention, and detention are obtained though the execution of cooperative agreements that maximize the benefits the project can provide. There are several projects that fall in this category, which are in various stages of implementation. Additional opportunities continue to be investigated.	Implementation

Type	Project/Activity	Description	Phase
Program	Dispersed Water Management – FRESP	As the basis for the NE-PES Program, the FRESP was a five-year pilot project to field-test and develop a Payment for Environmental Services Program. FRESP partners included eight ranchers, World Wildlife Fund, Florida Cattlemen's Association, FDACS, FDEP, UF/IFAS, USDA NRCS, MacArthur Agro-ecology Research Center, and District. Two of the eight storage pilot projects are still operational, two have converted to the NRCS WRP Program, and three are now being implemented under the NE-PES first solicitation.	Implementation
Program	Dispersed Water Management – NE-PES	The coordinating agencies (SFWMD, FDEP, and FDACS) have expanded opportunities for DWM in the Northern Everglades watersheds whereby private landowners manage water on parts of their property to provide two different water management services: water retention/storage or nutrient (TP or TN) load reduction through the District's NE-PES Program. Solicitations released through this program allow for an innovative approach by offering eligible cattle ranchers the opportunity to compete for contracts for water and nutrient retention. The goal of the NE-PES Program is to establish relationships via contracts with private landowners to obtain the water management services of water retention and nutrient retention to reduce flows and nutrient loads to Lake Okeechobee and the estuaries from the watersheds. The first NE-PES solicitation, released in January 2011, resulted in eight water retention contracts with 4,778 ac-ft of water retention. Of those, seven are operational and one is under construction. The District's Governing Board has approved entering into negotiations for the next series of NE-PES projects under the second solicitation. The first two ranked projects, Blue Head Ranch and Mudge Ranch, have entered into agreements with the District for a total estimated retention volume of 3,858 ac-ft. Upon identification of additional funding, negotiations with respondents will continue in ranked order.	Implementation
Program	Dispersed Water Management – Water Farming-PES	Another innovative approach to delivering environmental services, similar to NE-PES, is the WF-PES Program. This concept seeks to field test the potential for retaining water on fallow citrus lands. A feasibility analysis was completed in April 2012 by the Indian River Citrus League under a cooperative agreement with the District. A WF-PES Pilot Project RFP solicitation for the St. Lucie Estuary watershed area (Martin and St. Lucie counties) closed on June 5, 2013, and resulted in five submitted proposals. The proposals were evaluated and ranked based upon defined evaluation criteria and staff will be starting negotiations with the respondents in ranked order. Three of the five proposals have been negotiated and agreements have either been executed or are in the process of being executed.	Implementation

Type	Project/Activity	Description	Phase
Program	Farm and Ranchland Protection Program	This is a voluntary USDA NRCS Program that helps farmers and ranchers keep their land in agriculture. The program provides matching funds to state, tribal, or local governments and non-governmental organizations to purchase conservation easements.	Implementation
Program	Wetland Reserve Program (WRP)	The USDA NRCS provides technical and financial support to help landowners with their wetland restoration efforts. The goal of NRCS is to achieve the grater wetland functions and values, along with optimum wildlife habitat, on every acre enrolled in the program.	Implementation
Program	Dairy Buyout Program	From 1989–1992, owners of dairy cows in the Okeechobee drainage basin were offered a one-time payment in exchange for moving operations out of the basin and accepting restrictions on future use of the lands on which the dairies had been located.	Completed
Rule	40E-61 Rule Amendments	Proposed amendments to the Lake Okeechobee Works of the District Rule, as required under NEEPP.	Planning
Rule	ERP – Statewide ERP Rule	The Statewide Environmental Resource Permit became effective on October 1, 2013. The legislative mandate for this rulemaking provided that the individual water management districts maintain their water quality rules, and ability to promulgate water quality rule. These rules are set forth in SFWMD ERP Applicant's Handbook. Volume II.	Implementation
Rule	ERP – SFWMD Future Water Quality Rulemaking	Water quality rulemaking was included in the SFWMD Regulatory Plan filed in June 2013. It is anticipated that the rulemaking would be limited to an amendment to Part IV of the ERP Applicant's Handbook, Volume II, to codify the existing guidance memorandum on water quality evaluations for discharges to outstanding Florida waters and water bodies that do not meet the state water quality standards.	Planning
Rule	Urban Turf Fertilizer Rule	The Urban Turf Fertilizer Rule is another statewide regulatory program targeting non-point source phosphorus in urban discharges. The rule, which is led by the FDACS and was adopted in 2007, limits the phosphorus and nitrogen content of fertilizers used for urban turf and lawns.	Implementation

Type	Project/Activity	Description	Phase
Rule	Biosolids Rule	The FDEP adopted amendments to Chapter 62-640, F.A.C., which the Environmental Regulation Commission approved on May 20, 2010, to improve site accountability and management of biosolids. The new rule became effective on August 29, 2010. Currently, there are no Class B facilities within the Lake Okeechobee Watershed. Since 2007, the number of active biosolids sites has decreased from 22 to 0. There are currently no permitted biosolids sites in the Northern Everglades.	Implementation
Rule	Dairy Rule/ Concentrated Animal Feeding Operations (CAFO)	Chapter 62-670, F.A.C., identifies feedlot and dairy wastewater treatment and management requirements. Agricultural operations regulated under Chapter 62-670, F.A.C., include concentrated animal feeding operations (CAFOs), dairy farms in the Lake Okeechobee Drainage Basin, and commercial egg production facilities. In 2003, the USEPA adopted the NPDES Permit Regulation and Effluent Limitation Guidelines and Standards for CAFOs. In December 2008, the USEPA revised the NPDES requirements for CAFOs and the FDEP has amended Rule 62-620.100, F.A.C., to incorporate by reference the current federal CAFO requirements.	Implementation
Rule	Comprehensive Planning – Land Development Regulations	Basin-wide work with cities and counties to review current comprehensive plans, plan amendments and evaluation and appraisal reports (EAR), and ensure promotion of low impact design for stormwater treatment. The FDEP developed a “white paper” in January 2009 to provide guidance to FDEP and SFWMD staff when working with local governments to meet the NEEPP and to explain how existing growth management processes can further restoration and water quality objectives of the NEEPP.	Implementation
Regional Project	Taylor Creek STA Critical Project	This 142-acre STA, located at the District-owned Grassy Island Ranch Site, receives flows from and discharges to Taylor Creek. By the end of WY2013, the Taylor Creek STA had almost 37 months of flow-through operations which resulted in 4.04 mt of TP removal. Drawdown and planting activities were conducted to help rejuvenate the existing vegetation and to allow recruitment of cattail and bulrush, a management strategy should help improve the phosphorus removal capability of the STA, which resumed flow-through operations in July 2013.	Constructed

Type	Project/Activity	Description	Phase
Regional Project	Nubbin Slough STA Critical Project	This 809-acre STA, located at the District-owned New Palm Dairy Site, receives flows from and discharges to Nubbin Slough. It was designed to remove approximately 5 mt/yr TP. The USACE completed construction of the facility in June 2006 but it remains inoperable as repairs are ongoing. The USACE and SFWMD have agreed to a one-year time extension, until September 9, 2014, for completion of repairs, commissioning of the pump station, and transfer of the facility to the SFWMD.	Constructed
Regional Project	Comprehensive Everglades Restoration Project (CERP) Lake Okeechobee Watershed Project	CERP Lake Okeechobee Watershed Project includes reservoirs to provide storage to attenuate flows to the lake, STAs to provide nutrient reduction and wetland restoration. CERP is implemented through a 50/50 partnership with the SFWMD and the USACE. The District has expedited construction on a portion of the overall project with the construction of the Phase I of Lakeside Ranch STA. In addition, the District has acquired a portion of lands necessary for the CERP project including the remainder of Lakeside Ranch and Brady Ranch. Completion of the Project Implementation Report necessary for congressional authorization of the CERP LOWP has been delayed primarily due to unresolved policy issues regarding the USACE's cost sharing of water quality components.	Planning
Regional Project	CERP LOW Project – Taylor Creek Reservoir	This is a 1,600-acre, 16-foot deep reservoir on District-owned lands at the Grassy Island Ranch Site, estimated to provide 24,000 ac-ft of storage. The project is indefinitely on hold pending resolution of cost sharing issues related with the water quality components of the project.	Planning
Regional Project	CERP LOW Project – Paradise Run Wetland Restoration	3,730-acre wetland restoration site located at the confluence of Paradise Run, oxbows of the Kissimmee River, and Lake Okeechobee. The project is indefinitely on hold pending resolution of cost sharing issues related with the water quality components of the project.	Planning
Regional Project	CERP LOW Project – Kissimmee Reservoir	This will provide approximately 161,263 ac-ft of storage in a 10,281-acre, 16-foot deep reservoir in the Istokpoga/Indian Prairie Sub-watershed and will capture flows from the Lower Kissimmee Sub-watershed. The project is indefinitely on hold pending resolution of cost sharing issues related with the water quality components of the project.	Planning

Type	Project/Activity	Description	Phase
Regional Project	CERP LOW Project – Istokpoga Reservoir	This will provide 79,560 ac-ft of storage in a 5,416-acre, 16-foot deep reservoir located in and will capture flows from the Istokpoga/Indian Prairie Sub-watershed. The project is indefinitely on hold pending resolution of cost sharing issues related with the water quality components of the project.	Planning
Regional Project	CERP LOW Project – Istokpoga STA	This will provide approximately 29 mt/yr of TP load reduction in an 8,044-acre treatment facility that will target flows from the Istokpoga sub-watershed. The project is indefinitely on hold pending resolution of cost sharing issues related with the water quality components of the project.	Planning
Regional Project	CERP – Lake Okeechobee Aquifer Storage and Recovery Pilot Project (a/k/a Kissimmee ASR Pilot)	Aquifer Storage and Recovery (ASR) is the technology of utilizing underground strata (aquifers) to store large volumes of water for later retrieval. Often, the process involves utilizing pumps, treatment processes and a large diameter, deep well to inject water into the aquifer and utilizing the same well to recover the water later. The Pilot Project is a 5 million gallon per day pilot ASR system, which constructed by the USACE to evaluate the feasibility of ASR in the Lake Okeechobee region. A series of cycle tests were conducted successfully, indicating the feasibility of ASR at this location. The system is now inactive and the USACE has initiated the process of transferring ownership to the SFWMD.	Pilot Complete
Regional Project	CERP Aquifer Storage and Recovery Regional Study	The ASR Regional Study is designed to address regional technical issues associated with the large-scale implementation of CERP ASR technology beyond the scope of the pilot projects. Regional information is being collected on hydrology, geology, water quality, and other areas to (1) adequately extrapolate information collected at the pilot sites and from other non-CERP ASR facilities in South Florida, and (2) collect information from areas where there is little or minimal information to address ASR uncertainties. Findings of the first five years of data, summarized in the 2008 ASR Program Interim Report (SFWMD and USACE, 2008[1]), indicate that ASR will work to some degree in most areas of South Florida, although local variations in hydrogeologic conditions will impact well flow rates and recovery efficiencies.	Planning

[1] SFWMD and USACE. Aquifer Storage and Recovery Program Interim Report. South Florida Water Management District, West Palm Beach, FL, and U.S. Army Corps of Engineers, Jacksonville, FL. 120 pp. June 2008.

Type	Project/Activity	Description	Phase
Regional Project	CERP IRL-S C-44 Reservoir and STA	The project includes construction of a 3,400-acre reservoir (50,600 acre feet) and an adjacent 6,300-acre STA. Implementation of this project is expected to reduce damaging freshwater discharges, decrease nutrient loads, and aid in maintaining desirable salinity regimes. The SFWMD has acquired all lands needed for the project with contribution from the State and Martin County. Contract 1 is under construction by the Corps of Engineers. Construction plans and specifications for the reservoir (Contract 2) are nearing completion. Funding for the initial phase of STA construction was provided to SFWMD by the State Legislature through the Save Our Everglades Trust Fund in the 2013 legislative session, which is scheduled to begin in 2014.	Construction
Regional Project	Brady Ranch STA	This is a 1,800-acre STA proposed in Western Martin County between the Beeline Highway and Lake Okeechobee immediately east of Lakeside Ranch. It would receive flows from L-63 and discharges to Lake Okeechobee. It is estimated to provide 5 mt TP load reduction to the lake. The land has been acquired for this project. The project is indefinitely on hold pending resolution of cost-sharing issues related with the water quality components of the project.	Planning
Regional Project	Lakeside Ranch STA Phase I (North) and Phase II (South)	Phase I is a constructed 919-acre treatment wetland (STA) in western Martin County between Beeline Highway and Lake Okeechobee that will provide an annual average TP load reduction of approximately 9 mt/yr. Two of the three cells are currently flow-through operational. Phase II is a proposed 788-acre treatment wetland (STA) in western Martin County between Beeline Highway and Lake Okeechobee that will provide an annual average TP load reduction of approximately 10 mt/yr. Design has been completed and construction is contingent on performance of Phase I and funding at that time.	Phase I Constructed and Operational/ Phase II Design
Regional Project	Deep-injection Well (S-154 Basin Deep Injection Well)	This proposed four-well cluster and 1,000-ac-ft storage pond is expected to provide approximately 19,000 ac-ft of storage and a TP load reduction of 8.3 to 10.6 mt/yr. This feature will consist of a single deep-injection well system at the intersection of the S-154 connection to the C-38 canal.	Conceptual

Type	Project/Activity	Description	Phase
Regional Project	Everglades Headwaters National Wildlife Refuge and Conservation Area	The Everglades Headwaters National Wildlife Refuge and Conservation Area is an initiative to preserve the natural resources and rural way of life in the Kissimmee River Valley. This multi-partnered effort will promote habitat conservation through land acquisition, permanent conservation easements, and agreements with willing landowners. The refuge and conservation area was authorized to protect 150,000 acres in the threatened grassland and long-leaf pine savanna landscapes north of Lake Okeechobee, through fee title acquisition and permanent conservation easements on private lands allowing continued cattle and agricultural production while preventing future development. The initial planning occurred with a proposal (http://www.fws.gov/southeast/evergladesheadwaters/pdf/GEPIProjectProposal.pdf), developed in August 2010 by the USFWS.	Planning
Regional Project	Wetland Reserve Program (WRP) – Fisheating Creek Wetland Reserve Special Project	In 2010, approximately 26,000 acres were enrolled in the WRP within the Fisheating Creek Sub-watershed. Another 8,000 acres were enrolled in 2011. Conceptual design of the necessary drainage modifications is ongoing.	Planning
Restoration	Kissimmee River Restoration	The SFWMD is continuing to coordinate with the United States Army Corps of Engineers on the Kissimmee River Restoration Project (KRRP). The first three construction phases of restoration, completed between 2001 and 2009, have reestablished flow to 24 miles of river channel and allowed intermittent inundation of 7,710 acres of floodplain.	Construction
Restoration	Rolling Meadows/Catfish Creek Wetland Restoration	The goal of this project is to restore historic Lake Hatchineha floodplain wetlands and habitat within the Rolling Meadows property which was purchased jointly with FDEP. Phase I, which is fully funded, seeks to restore approximately 1,900 acres of previously drained floodplain marsh with an anticipated construction start of late 2014. Phase 2 consists of the restoration of approximately 600 acres associated with Catfish Creek. Phase 3 consist of the restoration of Catfish Creek proper. Phases 2 and 3 are in planning and require funding for further progress.	Phase I Final Design/ Phase II Planning/ Phase III Conceptual
Restoration	Gardner-Cobb Marsh	This restoration project, located south of Cypress Lake, includes 23 ditch plugs, berm removal, exotic treatment, and culvert replacement. It helps attenuate regional stormwater runoff and provide incidental nutrient reductions due to plant uptake from overland flows in the marsh. The potential for the benefits to be fully realized with this project is dependent on the headwaters revitalization project.	Completed

Type	Project/Activity	Description	Phase
Restoration	Lykes Basinger Grove and Boatramp Nursery	The Kissimmee River Restoration Project alters river stages at the discharge point of Basinger Grove and Boatramp Nursery requiring that the existing surface water system serving the property be modified. The total area of the grove is 43,700 acres, of which approximately 350 acres will be involved in the required modification, designed to provide flood protection without significantly altering existing drainage patterns on the property. The modifications will have the potential to store approximately 50 ac-ft.	Completed
Restoration	Otter Slough	This restoration project, located south/southwest of Lake Kissimmee, includes five ditch plugs and removal of two berms. It helps attenuate regional stormwater runoff, as well as providing incidental nutrient reductions due to plant uptake from overland flows.	Completed
Restoration	Rough Island	This restoration project, located southwest of Cypress Lake and west of the C-36 Canal, includes 31 ditch plugs and exotic removal. It helps attenuate regional stormwater runoff and provides incidental nutrient reductions due to plant uptake from overland flows.	Completed
Restoration	Lake Wales Ridge Wildlife and Environmental Area Restoration (Royce Unit)	This 120-acre site in the Lake Istokpoga Sub-watershed has the potential to store approximately 20 ac-ft.	Completed
Restoration	Three Lakes Wildlife Management Area Hydrologic Restoration	The Three Lakes Wildlife Management Area Hydrologic Restoration Project is a FWC initiative to restore wetlands and historical flow patterns to the Three Lakes Wildlife Management Area. The ultimate goal of the restoration project is to restore flow through Fodderstack Slough and improve the hydrology of over 6,000 ac of wetland area in this state-managed site of over 61,000 ac. Construction of the replacement G-113 structure was completed in September 2012. This structure replaces the former dilapidated structure and provides the same functions and services as the former structure plus the features needed to support restoration of flow to Fodderstack Slough. FWC, independent of SFWMD in-kind service support, initiated design of the Fodderstack Slough restoration features in early 2013. Future construction of Fodderstack Slough restoration features is dependent upon FWC revenues and priorities.	Construction

Type	Project/Activity	Description	Phase
Restoration	Shingle Creek Hydrologic Restoration	The area receives water from the Valencia Water Control District (drainage from surrounding area to the north) which sheet flows naturally across the swamp to Shingle Creek. Over the last 15 years the site has undergone restoration efforts including debris removal, removing exotics, reestablishing hydrologic connectivity within the swamp and between the swamp and creek, and reintroducing the regular application of prescribed fire in the pine islands.	Completed
Restoration	Oasis Marsh Restoration	The Oasis wetlands are located in floodplain of the southwest corner of Lake Kissimmee. This mosaic site of dewatered wetlands and uplands was purchased by the SFWMD in 1998 as part of the Kissimmee Chain of Lakes Project to raise lake stages. Prior to 1998, the land was ditched by private ownership to dewater the site primarily for cattle farming and therefore altered the hydrology of the existing wetlands on site and connectivity to Lake Kissimmee. In an effort to restore the floodplain function to these wetlands, four ditches totaling 2.4 acres in size were filled with 3,144 cubic yards of sediment material from a levee adjacent to the site in spring 2010. The restoration of the topography of Oasis Marsh will restore approximately 77 acres of wetlands and reconnect them to the littoral zone of Lake Kissimmee.	Completed
Sub-regional Projects	Watershed Phosphorus Source Control Projects – Phosphorus Source Control Grant Program Projects	The Phosphorus Source Control Grant Program was to fund early implementation of projects that have the potential for reducing phosphorus exports to Lake Okeechobee from the watershed. Began in 2001, the funded program originally consisted of 13 projects with nine operational (Tampa Farms – Indiantown, QED – McArthur Farms 3, Davie-Dairy Cooling Pond, Evans Properties – Bassett Grove, OUA-Ousley, Smith Okeechobee Farms, Lofton Ranch, Solid Waste Authority, and Lazy S Ranch Iron Humate. These projects varied in size and complexity and the Grant recipients included landowners, public facilities, and private corporation.	Completed
Sub-regional Projects	Watershed Phosphorus Source Control Projects – Isolated Wetland Restoration Projects	The following isolated wetland restoration projects were designed to enhance and restore wetlands, reduce TP load discharges, and retain stormwater flows by increasing storage: Kirton Ranch, Nubbin Slough Area A Restoration, Eckerd Youth Center, and Lemkin Creek.	Completed

Type	Project/Activity	Description	Phase
Sub-regional Projects	Watershed Phosphorus Source Control Projects – Former Dairy Remediation	The District implemented one or more remedial alternatives identified in the AGNMA plans on the following three privately owned former diaries: Mattson, McArthur 5, and Candler and on one former diary now owned by the District (Lamb Island East and West).	Completed
Sub-regional Projects	Watershed Phosphorus Source Control Projects – Dairy Best Available Technology Projects	Edge-of-farm stormwater treatment using retention/detention ponds and chemical treatment systems (also known as advanced BMPs) to reduce the export of phosphorus from dairy operations. There are two participating dairies: Milking R and Butler Oaks.	Completed
Sub-regional Projects	Spring Lake Improvement District (SLID) – Storage Improvements	Full implementation of the SLID Water Control Plan requires the construction of facilities that will provide additional runoff storage for retention, detention, and water quality purposes. Project implementation depends on funding availability.	Final Design
Sub-regional Projects	Okeechobee Utility Authority (OUA) – Treasure Island Force Main	Construction of a sewer line to help get the residents within Okeechobee's Treasure Island area off septic tanks. Removing the dependency on this septic system would improve water quality in the basin and reduce phosphorus discharges to Lake Okeechobee. Project implementation depends on funding availability.	Final Design
Sub-regional Projects	Istokpoga Marsh Water Quality Improvement Project	The project will capture excess stormwater that in turn, when available and needed, will be used before other surface water sources for farm irrigation. This will be accomplished through containment of stormwater runoff and gravity discharge back into the IMWID canal system as part of a DWM stormwater recycling system. The proposed system would include the phased design and construction of AGIs and the installation of pump stations to lift water into the AGI's as well as the design and installation of gravity control structures to allow the release of stormwater back into the IMWID canal system.	Construction

Type	Project/Activity	Description	Phase
Sub-regional Projects	Lake Hicpochee North Hydrologic Enhancement	The objective of the Lake Hicpochee Hydrologic Enhancement Project is to provide shallow water storage within the north half of the lake bed to promote habitat restoration and water quality treatment benefits. FY2013 activities included surveying, geotechnical investigations, and preliminary engineering design. Future design phases will rely on a proposed approximate 600-acre shallow storage feature that will be proposed on lands north of the lake bed that are part of the planned Duda land acquisition.	Design
Local	Local Water Quality Projects	These partnership projects between the coordinating agencies and local governments include stormwater and wastewater improvement projects, alternative water supply projects, flood improvement projects. Benefits include water quality improvements, water retention and water recycling. These projects provide benefits on a local and sub-regional scale and collectively provide water quality and quantity benefits on a regional scale. Some District partnership projects in the LOW funded in FY2014 include the Orange County and Windermere stormwater projects. The purpose of these projects is to reduce the nutrient loadings to the Butler Chain of Lakes coming from adjacent sub-basins.	Ongoing
Alternative Technology	Hybrid Wetland Treatment Technology	HWTT is a combination of wetland and chemical treatment technologies designed mainly to remove phosphorus at the sub-basin and parcel scales with ancillary nitrogen reduction benefits. There are currently six operational HWTT sites in the Northern Everglades (one in the Lake Okeechobee Watershed and one in the St. Lucie Watershed). Based on monitoring results of the six operational HWTT projects in the Northern Everglades, this effort is proving to be a promising technology. During the entire study period, results showed flow-weighted mean TP concentrations reductions of 67 to 96 percent and total nitrogen reductions of 20 to 58 percent. Funding for a new HWTT facility has been identified and a specific location is currently being evaluated.	Implementation
Alternative Technology	NE Chemical Treatment Parcel Level	Provides TP load reduction by implementing chemical treatment at the parcel level across the Lake Okeechobee Watershed.	Conceptual

Type	Project/Activity	Description	Phase
Alternative Technology	NE Chemical Treatment Regional Reservoirs	Addition of chemical treatment in CERP Lake Okeechobee Watershed reservoirs (Istokpoga Reservoir and Kissimmee Reservoir).	Conceptual
In-Lake Strategies	Feasibility Study	A feasibility study, completed in 2003, evaluated both sediment removal by lake-wide dredging and chemical treatment with aluminum sulfate or similar compound (Blasland, Bouck and Lee, Inc., 2003). The study concluded that sediment removal would not be effective in reducing internal phosphorus loading and there was no acceptance of the use of alum or any similar chemical treatment of lake sediments since the cost was estimated to be about $500 million every 15 years or so. It was determined that any management strategy would be temporary unless the external loads were reduced to meet the Lake Okeechobee TP TMDL. Additionally, to evaluate the effectiveness of chemical compounds on reducing P release from Lake Okeechobee mud sediments, laboratory studies were completed in 2008 using four chemical compounds [alum (aluminum sulfate), calcium hydroxide ($CaOH_2$), calcium carbonate ($CaCO_3$), and ferric chloride ($FeCL_3$)], each at four concentration levels (Golder Associates, Inc., 2008[2]). More details of these studies are available in the Lake Okeechobee Protection Plan Update (SFWMD et al., 2011[3]).	Completed
In-Lake Strategies	In-lake Strategies – Low stage Muck Scraping and Tilling	To address internal phosphorus loading in Lake Okeechobee, a low stage muck scraping and tilling effort was completed during the low stage levels in 2007 and 2008. Scraping removed 2,348,000 cubic yards of muck sediment from six locations between Fisheating Bay and Yankee Point. Tilling was conducted in 40 acres near Indian Prairie for phosphorus sequestering and exposure of the sand surface.	Completed

[2] Golder Associates, Inc. 2008. Assessment for the Feasibility of Using Chemical Inactivation to Reduce Internal Phosphorus Loading from Lake Okeechobee Pelagic Sediments. Report to the South Florida Water Management District, West Palm Beach, FL.

[3] SFWMD, FDEP and FDACS. 2011. Lake Okeechobee Protection Plan Update. South Florida Water Management District, West Palm Beach, FL; Florida Department of Environmental Protection, Tallahassee, FL; and Florida Department of Agriculture and Consumer Services, Tallahassee, FL. June 2011.

ac-ft – acre-feet
AGI - above-ground impoundment
ANMA – Agriculture Nutrient Management Assessment
ASR – Aquifer Storage and Recovery
BMP – Best Management Practices
CERP – Comprehensive Everglades Restoration Plan
DWM - Dispersed Water Management
ERP – Environmental Resources Permit
F.A.C. – Florida Administrative Code
FDACS – Florida Department of Agriculture and Consumer Services
FDEP – Florida Department of Environmental Protection
FRESP - Florida Ranchlands Environmental Services Project
F.S. – Florida Statutes
FWC - Florida Fish and Wildlife Conservation Commission
HWTT – Hybrid Wetland Treatment Technology
IMWQID – Istokpoga Marsh Water Quality Improvement District
LOWP – Lake Okeechobee Watershed Project
mt – metric tons
NPDES – National Pollutant Discharge Elimination System
NE-PES – Northern Everglades - Payment for Environmental Services Program
NEEPP – Northern Everglades and Estuaries Protection Program
NGO – non-governmental organization
SFWMD or District – South Florida Water Management District
SLID – Spring Lake Improvement District
STA – Stormwater Treatment Area
TN – total nitrogen
TP – total phosphorus
UF/IFAS – University of Florida Institute of Food and Agricultural Sciences
USDA NRCS – U.S. Department of Agriculture – Natural Resources Conservation Service
USEPA – U.S. Environmental Protection Agency
USFWS – U.S. Fish and Wildlife Service
WF-PES – Water Farming Payment for Environmental Services
WRP – Wetland Reserve Program
WY – water year