Project Name: **C&SF: CERP WCA 3 Decompartmentalization and Sheetflow Enhancement (AA) (QQ P1 & QQ P2) (SS) (ZZ)**
WCA 3 Decompartmentalization and Sheetflow Enhancement Part 1 and Part 2 (DECOMP) [raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within Water Conservation Area 3 (QQ), North New River Improvements (SS); *Restoring Eastern Everglades Flow Path and Restoring Western Everglades Flow Path]*; and *Water Conservation Area 3A/3B Flows to Central Lake Belt Storage (ZZ)]*
Project ID: 1301 (CERP Project WBS # 12, WBS # 13, and WBS #47)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (*only 'QQ P1' and 'SS' – were Initially Authorized Projects);*
Other components not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.3

Measurable Output(s): 240 miles of impediments removed

April 1999 (Restudy) Project Synopsis: The Water Conservation Area (WCA) 3 Decompartmentalization and Sheetflow Enhancement project includes the following components:

AA: Construction of additional S-345 conveyance structures (through L-67A and L-67C levees and borrow canals), to improve flow of water from WCA3A to 3B.

QQ Phase 1: Raise and bridge *(using ten 100-foot box culvert bridges)* the eastern portion of Tamiami Trail and to completely backfill the Miami Canal within WCA-3.

SS: North New River Improvements, as needed to improve the discharge capability of an expanded/improved North New River Canal and to compensate for any water conveyance capacity lost via removal of the Miami Canal.

QQ Phase 2: Remove the remaining sheetflow obstructions, i.e., L-67A borrow canal (by filling in the southern 7.5 miles), L-68A, L-67C, L-29, L-288 tieback levees and borrow canals (formerly WBS #13).

ZZ*:* Pumps, water control structures, canals around conveyance improvements adjacent to WCA 2 and 3 in Broward County. As stages in WCA 2 B, 3A or 3B exceed target depths, excess water will also be transported to the Central Lake Belt Storage Area.

Current Project Synopsis: The natural flow of water volume, direction, speed and depth create the unique characteristics of the Everglades ecosystem. Decompartmentalization entails removing constructed canals, levees and other barriers that impede the natural sheetflow of water into and through the historic Everglades and restoring a more natural water flow. The primary impediment to the natural flow of water through WCA-3A is the Miami Canal, separating WCA-3A north from WCA-3A south.

Because of scientific and ecological uncertainties, and dependence upon the Modified Water Deliveries Project (per WRDA 2000), the DECOMP Project Delivery Team is utilizing a multiple PIR phased approach for implementation that uses adaptive management, construction of a first phase, monitoring of component performance, and additional construction to achieve the desired results. In 2006, WCA 3 Decompartmentalization and Sheetflow Enhancement – "Part 2" (Restudy - QQ P2/WBS #13) was combined with "Part 1" (Restudy - AA, SS, and QQ P1 - WBS #12) for reporting.

PIR 1 (Miami Canal portion of QQ P1 and SS) includes WCA-3 and extends as far north as the southern end of Lake Okeechobee and as far south as the Tamiami Trail within Broward and Miami-Dade counties. Potential modifications to the Miami Canal and the North New River Canal will be analyzed.

Additional project implementation reports will address barriers to sheet flow in other parts of the ecosystem. This PIR focuses on options to backfill the Miami Canal, and on any North New River improvements needed to offset conveyance lost in the Miami Canal. Alternatives being examined include complete backfill, partial backfill, plugging of the canal and removal of existing canal spoil mounds. A hydration feature, more specifically a hydropattern restoration feature (HRF) has been added to PIR 1 to maximize sheetflow in WCA-3A. HRF was originally part of SFWMD's long term plan but got postponed due to funding.

Concurrent with PIR #1, a temporary field-scale test will be implemented to investigate the effective design of features for restoring sheet flow and for removing barriers to habitat connectivity in Water Conservation Area 3. The field test - also known as a ***Physical Model*** - is important because there are critical questions regarding design and effectiveness of decompartmentalization features that cannot be answered with current computer simulation models. The physical model will gather data to better understand the hydrological and ecological effects associated with different types of canal and levee modifications to maintain the landscape characteristics of the Everglades.

The field test will take place along the L-67A and L-67C levees and canals in Water Conservation Area 3 (A&B) in northern Miami-Dade County, approximately 10 miles north of S-333. Flow will be manipulated by allowing water to pass from the L-67A canal (WCA-3A) into a region known as "the pocket" through proposed Structure 152 (S-152), consisting of ten gated 60-inch diameter culverts at the levee. The culverts will be installed side-by-side and will discharge directly into sloughs within the flow-way. To establish sheet flow and evaluate canal backfilling options, a 3,000-foot gap will be opened in the L-67C levee downstream of S-152. Levee material will be deposited in the L-67C canal to create a 1,000-foot long *completely* backfilled segment and a 1,000-foot long *partially* backfilled segment. The remaining 1,000-foot segment of the L-67C canal will not be altered. These features will provide a controllable hydrologic connection between WCA-3A and WCA-3B delivering pulsed flows at velocities of at least 3 cm/sec over a period of days. DPM data and assessment of the effects of pulsed flows on hydrology, transport, vegetation and wildlife will guide planning, design and operational guidance for alternatives for both PIRs #2 and #3 of the DECOMP project.

The entire DECOMP Physical Model (DPM) project includes planning and evaluation of test alternatives in an Environmental Assessment, baseline monitoring, installing test features, operation, post-installation monitoring and removal of all field test features. A Project Operating Manual will be developed. The Corps has designed the project to be completely reversible -- so following testing, the area will be returned to its pre-test condition.

Water levels in WCA-3A are currently managed according to the WCA-3A Interim Regulation Schedule and the Everglades Restoration Transition Plan (ERTP) for protection of the Cape Sable Seaside Sparrow (2006). ERTP includes the WCA-3A Regulation Schedule and South Dade Conveyance System operations. The current WCA-3A regulation schedule and ERTP will continue to be used during the field test. Total surface water deliveries to Northeast Shark River Slough and Everglades National Park during the field test are anticipated to remain about the same as they would under current ERTP operations. Water managers may consider additional deliveries, if allowable, given consideration of system-wide conditions.

PIR 2 (Tamiami Trail portion QQ - P1 and AA) focuses on modifying eastern sections of Tamiami Trail to improve water flows.

PIR 3 (QQ - P2) includes backfilling the southern 7.5 miles of L-67A borrow canal, removal of the L-68A, L-67C; degradation of western portions of L-29 below WCA 3A, L-28, and L-28 Tieback Levees and Borrow Canals; and elevating the western portion of Tamiami Trail south of WCA 3A.

An adaptive management strategy will be developed for the overall project, including formation of an interagency adaptive management team. Sequencing with the Modified Water Deliveries, C-111 South Dade, and CERP projects (e.g., L-31N Seepage Management Pilot, ENP Seepage Management, Broward County Water Preserve Areas, and Everglades Agricultural Area) is critical because of inter-relationships.

Current Status:

PIR 1

At a June 2008 Feasibility Scoping Meeting, the PDT recommended an Incremental Adaptive Restoration (IAR) strategy. An initial plan formulation summary was drafted and RECOVER has completed its performance measure consistency review. Conceptual alternatives were modeled using the South Florida Water Management Model to determine which segment(s) of the Miami Canal yielded the most benefits when backfilled. The RMA-2 (developed by Resource Management Associates for the USACE 1973) model was used to determine optimal plug length and spacing given variable fill quantities. These model results, along with additional considerations, were used to formulate a preliminary array of alternatives. The PDT used a structured screening process to reduce the preliminary alternatives to a final array of ten to be further analyzed using the Regional Simulation Model (RSM).

Inclusion and evaluation of hydration feature(s) or hyrdropattern restoration feature (HRF) along the northern boundary of WCA 3 was added in 2010. The team developed a final array of alternatives that include hydration features and various Miami Canal backfill configurations. Initiation of the Central Everglades Planning Project (CEPP) that includes Water Conservation Area 3 has incorporated ALL the study that has occurred to date into its planning process. Therefore, all efforts on PIR1 have been compiled into the Decomp Project Documentation Report and no additional work will be conducted solely on PIR1.

Physical Model:

Water quality certification is complete and the contract was awarded in May 2012. A science and engineering report underwent review in 2009. The draft NEPA document, Environmental Assessment (EA) and Design Test Documentation Report was released November 6, 2009 and the Corps accepted written comments on the EA and Operations Plan through December 6, 2009. In February 2010, a public meeting on the Draft Operational Guidance was held. A FONSI was signed in April 2010. The original project duration was anticipated to last five-years and included: two years of baseline monitoring, one year for installation, and two years of post-installation monitoring and evaluation. The SFWMD and USACE have agreed to add an additional operational/testing year beginning Nov 2015. This temporary project will be dismantled at the close of the monitoring period.

The installation was completed in October 2013. The gates were opened on November 5 and will remain open until the end of December 2013. Data collection is also underway.

Est. Cost: $163,395,000

Project Schedule:

2013	Install and Operate DECOMP Physical Model
2015	Decommission Physical Model
TBD	Construction of Features included in CEPP

Detailed Project Budget Information (rounded):

DECOMP	Obligations Thru FY 2016
USACE	$20,528,000
SFWMD	$7,981,000
Total	**$28,509,000**

Hyperlinks: http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/

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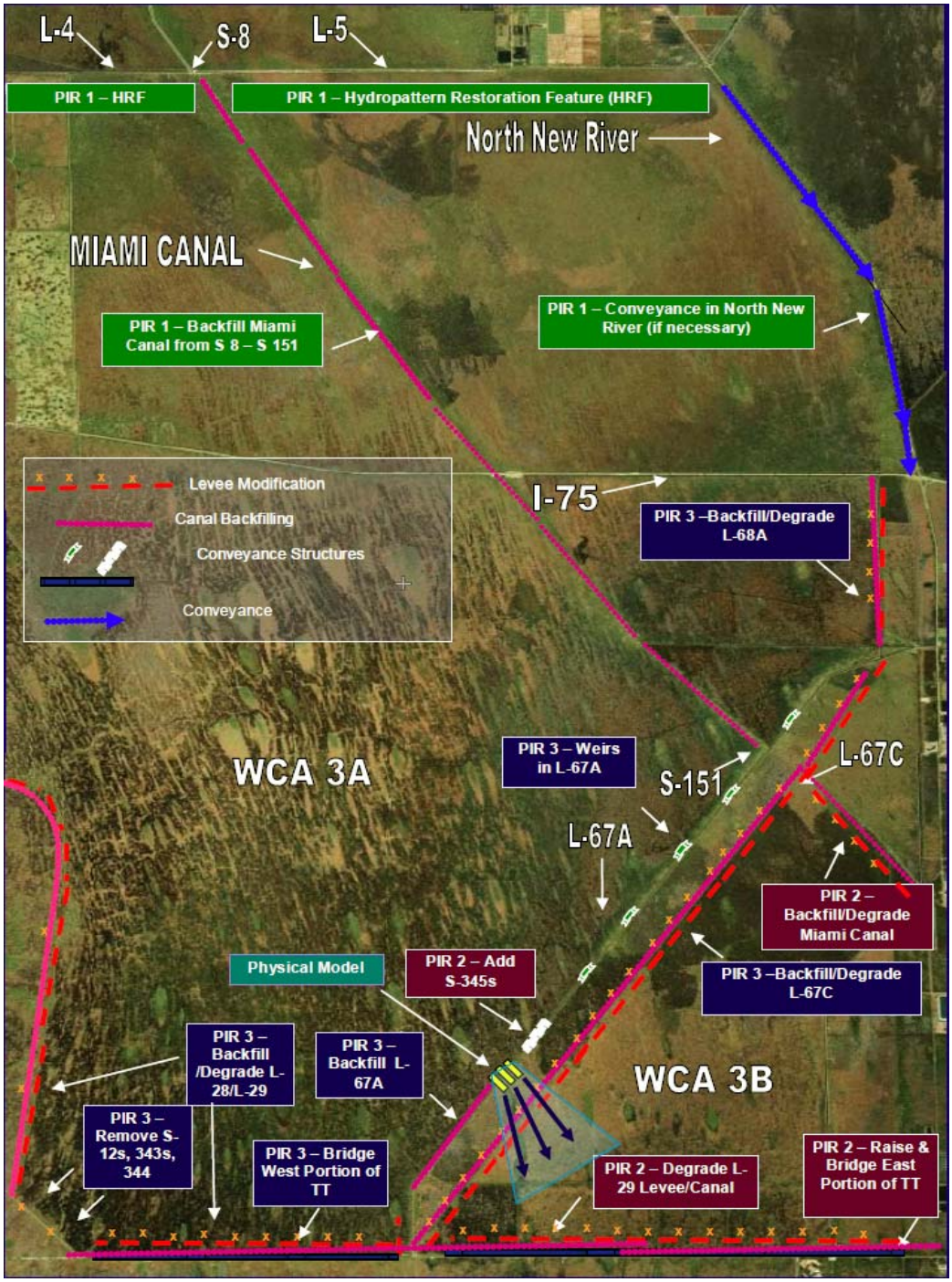
Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Cost estimate information is updated to reflect current price levels in October 2011 dollars. Actual expenditures include all federal expenditures through FY11 (Sept, 2011) and sponsor verified and approved in kind credit through 4th quarter FY11.

Additional Information: For wetlands in the footprint of the DECOMP Project, and downstream into the southern estuaries, the objective restoration: Given the nature of irreversible constraints in modern south Florida, true restoration is an ecosystem that, as closely as possible, is a self-regulating system that has recovered the ecological functions, relationships and physical and biological components that defined the pre-drainage ecosystem. Defining characteristics include the extent of naturally connected and inter-related wetland landscapes, uninterrupted marsh and slough "sheet flow", low levels of nutrients in freshwater wetlands, numerous and healthy tree islands and solution "holes", resilience of plant community mosaics, an abundance of large aquatic vertebrates exemplified by otters, storks, ibis and alligators, and high levels of downstream, estuarine productivity.

Although a "new" Everglades will be smaller than the pre-drainage system -- the DECOMP project will have been successful when the new system no longer acts like a set of managed, disconnected wetlands—but, rather responds to the recovery of these defining characteristics by functionally and organizationally behaving, both in space and time, as the wild Everglades system.


L-4
S-8
L-5
PIR 1 – HRF
PIR 1 – Hydropattern Restoration Feature (HRF)
North New River
MIAMI CANAL
PIR 1 – Backfill Miami Canal from S 8 – S 151
PIR 1 – Conveyance in North New River (if necessary)
Levee Modification
Canal Backfilling
Conveyance Structures
Conveyance
I-75
PIR 3 –Backfill/Degrade L-68A
WCA 3A
PIR 3 – Weirs in L-67A
S-151
L-67C
L-67A
PIR 2 – Backfill/Degrade Miami Canal
Physical Model
PIR 2 – Add S-345s
PIR 3 –Backfill/Degrade L-67C
PIR 3 – Backfill /Degrade L-28/L-29
PIR 3 – Backfill L-67A
WCA 3B
PIR 3 – Remove S-12s, 343s, 344
PIR 3 – Bridge West Portion of TT
PIR 2 – Degrade L-29 Levee/Canal
PIR 2 – Raise & Bridge East Portion of TT