

1.0 INTRODUCTION

This report is an integrated Limited Reevaluation Report (LRR) and Environmental Assessment (EA) for Tamiami Trail Modifications (TTM) for Modified Water Deliveries (Mod Waters) to Everglades National Park (ENP). The study leading to this report was conducted by an interdisciplinary team, including hydrologists, design and cost engineers, water modelers, managers, physical scientists, archeologists, planners, biologists, ecologists and National Environmental Policy Act (NEPA) specialists. Cooperating NEPA agencies with the U.S. Army Corps of Engineers (USACE) include the National Park Service (NPS) and ENP. The South Florida Water Management District (SFWMD) would be a cost-sharing partner with the USACE for Operations and Maintenance of the project. Once construction is complete, this project would become part of the Central and Southern Florida (C&SF) Project.

The purpose of this LRR is to identify a recommended plan for modifying Tamiami Trail (U.S. Highway 41) to meet the objectives of the 1992 USACE General Design Memorandum (GDM) called “Modified Water Deliveries to Everglades National Park” (often called the “Mod Waters” or “MWD” Project). Through extensive public and agency coordination, a recommended plan for this project was previously evaluated in the 2005 Revised General Re-evaluation Report (RGRR) and Environmental Impact Statement (EIS). It was approved by the USACE and forwarded to Congress in 2006. However, estimated costs of the plan grew dramatically since original authorization. Consequently, Congressional managers drafting the Water Resources Development Act (WRDA) of 2007 directed the USACE to identify a lower-cost plan still capable of meeting the Mod Waters objectives, and to submit a revised report by July 2008. The present report is intended to tier from the detailed evaluations provided in the 2005 RGRR and EIS, which is available for viewing on the USACE Jacksonville District website¹. For the reviewer’s convenience, sections of this report containing material required for NEPA evaluations are preceded by an asterisk (*) in the Table of Contents.

The project location is a 10.7-mile section of Tamiami Trail (U.S. Highway 41) from Structure 333 (S-333) on the west to Structure 334 (S-334) on the east. It is bordered to the north by Water Conservation Area (WCA)-3B and includes a discontinuous stretch of relatively deep marsh and slough called Northeast Shark River Slough (NESRS) in ENP (*Figure 1-1* and *Figure 1-2*).

Shark River Slough is a curving flow-way that originally stretched from the south shore of Lake Okeechobee southeastward through Palm Beach, Broward and Miami-Dade Counties in WCA-3A and 3B, where it curved south and then

¹ <http://www.saj.usace.army.mil/dp/mwdenp-c111/index.htm>

southwest into ENP. Historically, Shark River Slough was the central core of the Everglades flow-way.

The continuity of the slough into ENP has been blocked at the south end of WCA-3B by the L-29 Levee and adjacent L-29 Canal, both of which parallel the north side of Tamiami Trail. Currently, water flows through Tamiami Trail in a set of culverts into ENP. The goal of this integrated LRR/EA is to propose a plan to Congress that provides immediate steps to increase flows to ENP while meeting directives set by Congressional managers.

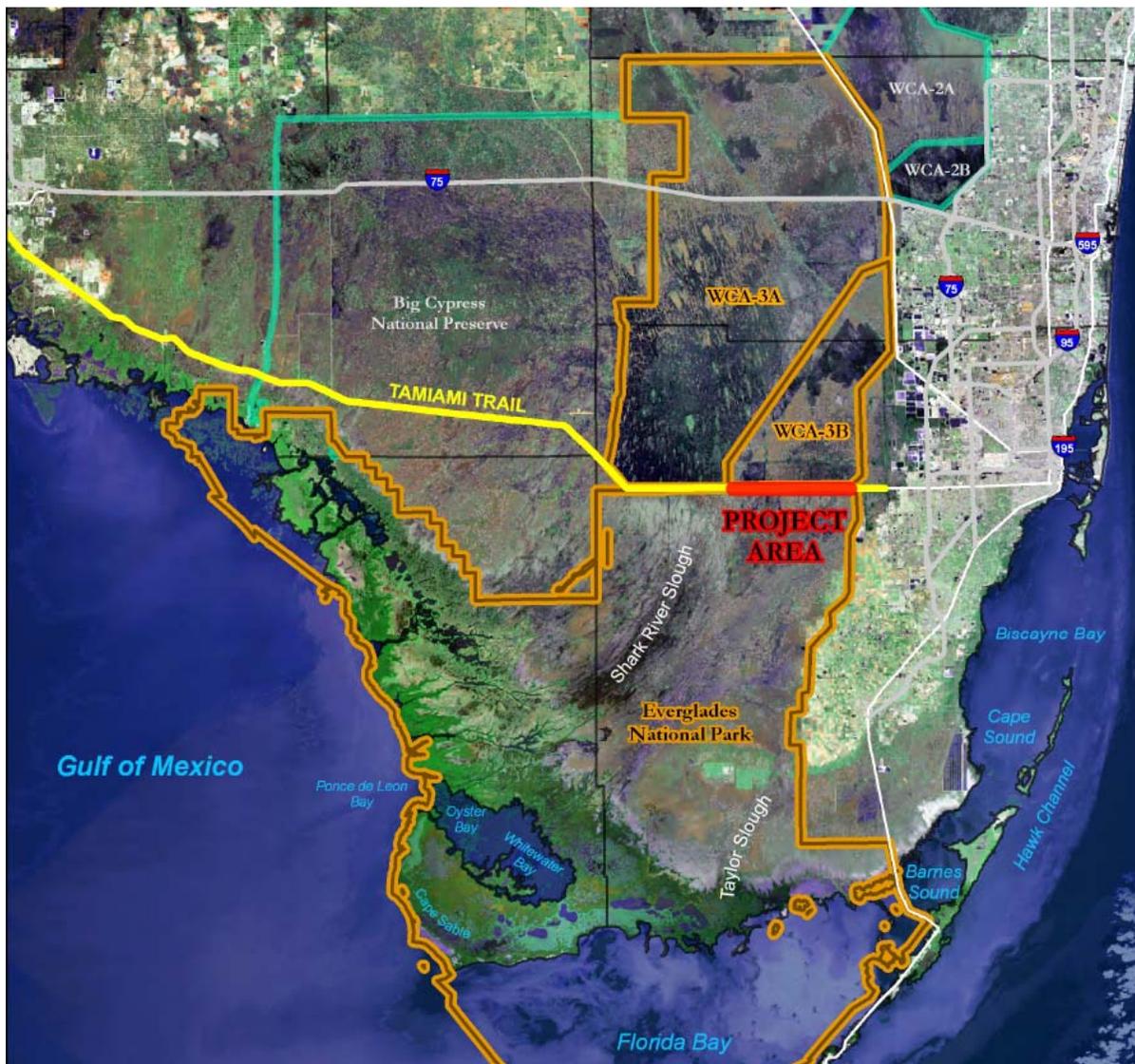


FIGURE 1-1: STUDY AREA AND SOUTH FLORIDA

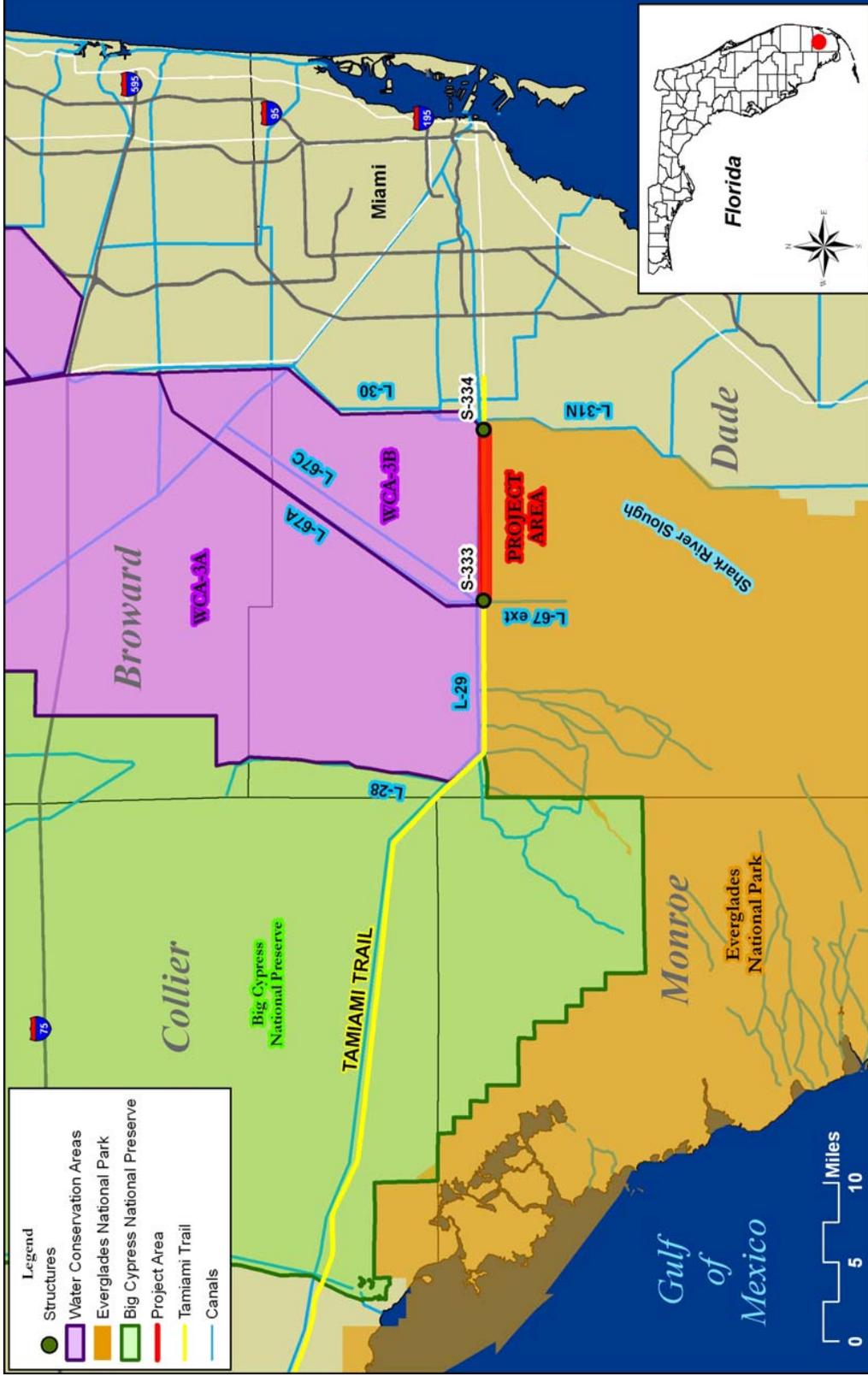


FIGURE 1-2: PROJECT LOCATION

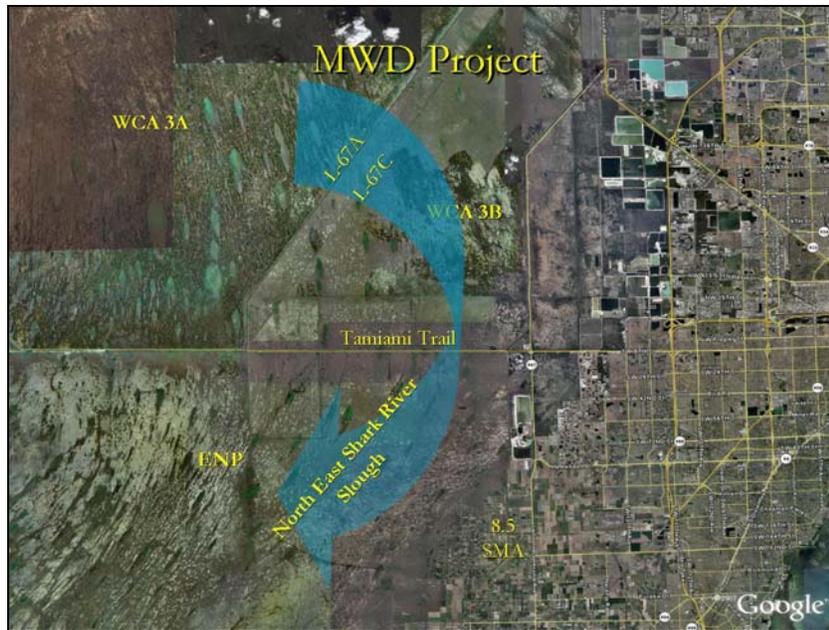


FIGURE 1-3: SHARK RIVER SLOUGH PATH

1.1 Project Authority and Congressional Intent

The Everglades National Park Protection and Expansion Act, (Public Law [PL] 101-229, Section 104, 16 U.S.C. Part 410r-5 *et seq.*, December 1989), authorized the Secretary of the Army to undertake certain actions to improve water deliveries from the C&SF Project to the ENP.

Section 104 of the Act directed the USACE to address restoration of water deliveries and natural hydrological conditions. The Act states:

Sec 104 (a) (1): Upon completion of a final report by the Chief of the Army Corps of Engineers, the Secretary of the Army, in consultation with the Secretary, is authorized and directed to construct modifications to the Central and Southern Florida Project to improve water deliveries into the park and shall, to the extent practicable, take steps to restore the natural hydrological conditions within the park.

Sec 104(a) (2). Such modifications shall be based upon the findings of the Secretary's experimental program authorized in Section 1302 of the 1984 Supplemental Appropriations Act (97 Stat. 1292) and generally as set forth in a General Design Memorandum to be prepared by the Jacksonville District entitled Modified Water Deliveries to Everglades National Park. The Draft of such Memorandum and the Final Memorandum, as prepared by the Jacksonville District, shall be submitted as promptly as practicable to the Committee on Energy and Natural Resources and the Committee on Environment and Public Works of the United States Senate and the

Committee on Interior and Insular Affairs and the Committee on Public Works and Transportation of the United States House of Representatives.

Sec 104 (a) (3): Construction of project modifications authorized in this subsection and flood protection systems authorized in subsections (c) and (d) are justified by the environmental benefits to be derived by the Everglades ecosystem in general and by the Park in particular and shall not require further economic justification.

The USACE published a GDM in 1992 called “Modified Water Deliveries to Everglades National Park.” This GDM satisfied in part the direction contained in the Everglades Protection and Expansion Act by providing for flood mitigation for the Indian camps and for the 8.5 Square Mile Area (8.5 SMA) of the “east Everglades”, as well as a design for seepage and conveyance control features for the WCAs, but it did not address needed modifications to provide full conveyance capacity under the Tamiami Trail for anticipated additional flow volumes of up to 4,000 cubic feet per second (cfs) during the rainy season. It was known by 2000 that additional modifications to Tamiami Trail would be required to convey improved flows to NESRS. There were widely opposing views on the magnitude of changes to Tamiami Trail that were needed to provide the conveyance, making the evaluation process lengthy and difficult. In 2005, the USACE published a RGRR and Supplemental Environmental Impact Statement (SEIS) that would have provided capacity to allow improved flow volumes across the Trail, once the conveyance and seepage control features in WCA-3A and 3B were built. The major problem with the 2005 Recommended Plan was its anticipated cost. Although a Record of Decision (ROD) selecting the 2005 Recommended Plan was signed in January 2006, and the plan was proposed to Congress, the Selected Plan was not approved.

In 2007, Congress expressed dismay at cost increases associated with Tamiami Trail modifications, as well as the 18-year delay (since passage of the Everglades Protection and Expansion Act) in full implementation of “Mod Waters.” Congress directed the USACE, in the managers’ language written during drafting of the WRDA 2007, to:

“...re-examine options to modify the water deliveries to the Park... However, the managers also direct the Chief of Engineers to pursue immediate steps to increase flows to the Park of at least 1,400 cubic feet per second, without significantly increasing the risk of roadbed failure. Flows less than 1,400 cubic feet per second will not produce measurable benefits to the Park.

The managers direct the Chief of Engineers to proceed with increasing flows to the Park upon the completion of the eight and one-half square mile area construction this fall. Completing that construction removes the current

constraint on water levels within the Northeast Shark River Slough area of the Park.

The managers direct the Chief of Engineers to re-examine the prior reports and environmental documentation associated with modifying water deliveries to the Park prepared under the 1989 Act, and to evaluate the practicable alternatives for increasing the flow of water under the highway and into the Park. The recommendations resulting from this re-examination are to be for improving flows in a manner that is consistent with the direction in the 1989 Act that the Secretary of the Army construct modifications “to improve water deliveries into the Park and shall, to the extent practicable, take steps to restore the natural hydrological conditions within the Park. The managers direct that the flows to the Park have a minimum target of 4,000 cubic feet per second so as to address the restoration envisioned in the 1989 Act.”

1.2 History of Tamiami Trail and the Everglades “River of Grass”

The Florida Everglades is one of the largest and most complex freshwater wetland ecosystems in the world. The location, timing, duration, and depth of flooding, combined with geology and other factors, determine the distribution and composition of the plant and animal communities of the Everglades. The southernmost end and receiving waters for the 18,000 square mile south Florida everglades ecosystem is ENP. Virtually all waters delivered to the Park other than direct rainfall are provided by the C&SF Project, which was authorized by the Flood Control Act of 1948 (PL 858, 80th Congress) for flood control, water supply, prevention of salt water intrusion, preservation of fish and wildlife, recreation and navigation. The USACE began building the C&SF Project in the 1950s. Construction was largely complete by 1962, although some construction continues to this day. The C&SF Project divided the shallow and slow-flowing Everglades wetlands into compartments and installed pumps and gated structures to control flow from one segment to another.

The Tamiami Trail, which was completed in 1928 by the Florida State Road Department, is an impediment to flow, slowing and blocking water flow south into the southern Everglades and ENP. Additional blocking of direct flow occurred with the 1962 construction of the L-28 and L-29 levees enclosing WCAs-3A and 3B and enlargement of the road borrow canal (now called L-29 Canal), as part of the C&SF Project. The cumulative result of construction of Tamiami Trail and the C&SF Project was significant reduction in the volume, timing and duration of water flow to NESRS.

Until Congress enacted the 1989 Everglades Protection and Expansion Act, ENP was smaller than at present. The large S-12 gate structures on the L-29 Levee at the south end of WCA-3A could deliver high water volumes to the Park itself, but most of NESRS lay in the undeveloped lands between ENP and the

developed areas near the east coast. This area received water only from direct rainfall and through culvert sets under the road. An extension of the L-67 Levee, running along the Park's eastern boundary, restricted flow into NESRS from the west. Reduced inflows from the north and west resulting from the compartmentalization of the system led to reduction of flooding depths and durations and loss of long-hydroperiod habitats inside the Park. Slough habitat, the unique Everglades wetland complex immortalized as the "river of grass" by Marjory Stoneman Douglas, was among the most adversely impacted by flow reduction.

In response to conservationists' concerns over loss of Everglades values during the 1980s, US Congress passed PL 98-191, providing for experimental supplemental deliveries of water to the Park, in 1983. After a series of studies authorized under this Act, it became evident that it would be difficult to increase water deliveries to Park lands without adversely affecting adjacent agricultural lands. In 1989, Congress passed the Everglades National Park Protection and Expansion Act (PL 101-229). This Act authorized acquisition of 109,000 acres of privately owned and State lands located south of Tamiami Trail between the L-67 Extension and the L-31 Canal. This area was a major expansion of Park lands that would eventually allow for their re-hydration; but in 1989, there were minimal structures available to convey water into these newly acquired Park lands that had previously been kept relatively dry for agricultural and recreational use. Therefore, the Act also directed the USACE to increase flows into the Park to the extent practicable.

The USACE prepared a GDM for "Mod Waters to ENP". The GDM was completed in 1992 and included five major components:

1. Flood mitigation for the 8.5 SMA, a residential area located just west of the L-31N Levee (the new authorized eastern Park boundary) that would flood if additional water were discharged into the eastern Park extension.
2. Conveyance and seepage control features, designed to facilitate flow from WCA-3A to WCA-3B and from WCA-3B to the L-29 Canal adjacent to Tamiami Trail, and to limit seepage eastward from WCA-3B and ENP into developed areas of Miami-Dade County.
3. Modifications to Tamiami Trail to raise it in the vicinity of the S-334 structure.
4. Raising Tigertail and Osceola Indian Camps to levels above the expected flood levels.
5. A new operational plan for the water control structures was recommended that would deliver 55 percent of total water volumes east of L-67, and 45 percent to the west, to reflect historic flow paths.

The 1992 GDM noted that maximum rainy season flow volumes into the Park could reach 4,000 cfs, and recommended structures to deliver these flows into the L-29 Canal just north of Tamiami Trail. It did not anticipate that the existing culvert sets would be inadequate to deliver this volume, and recommended raising the Trail only to accommodate the S-334 and S-356 pump structures (at the far eastern end of the road segment)

Since 1992, ENP has acquired nearly all the additional authorized lands east of the old Park boundary. A flood mitigation plan for the 8.5 SMA, including relocation of the S-357 pump station, was approved in 2000 and reaffirmed in 2003, and construction is now nearing completion. Tigertail Camp has been raised. ENP is in dialog with the Osceola group in preparation for raising this camp as well. The S-356 pump station was built as a temporary pump station at the location indicated in the GDM. The S-355A and S-355B spillways, allowing water flow from the south end of WCA-3B into L-29 Canal, have been built. However, the last remaining conveyance and seepage features, the S-349 spillways and S-345 flow structures that would allow flow through the L-67 Levees between WCAs-3A and 3B, remain to be built. The final design of these structures would depend in part on the selection and approval of the preferred alternative (recommended plan) for Tamiami Trail.

The WRDA 2000 authorized the Comprehensive Everglades Restoration Plan (CERP) (**Figure 1-4**). The restudy of the C&SF Project that led to CERP indicated that further work on reducing barriers to flow in WCA-3 was justified. However, WRDA 2000 also required that the MWD plan be complete before “CERP” modifications could begin construction. (**Figure 1-5**) shows CERP WCA-3 Decompartmentalization as conceptualized in WRDA 2000.

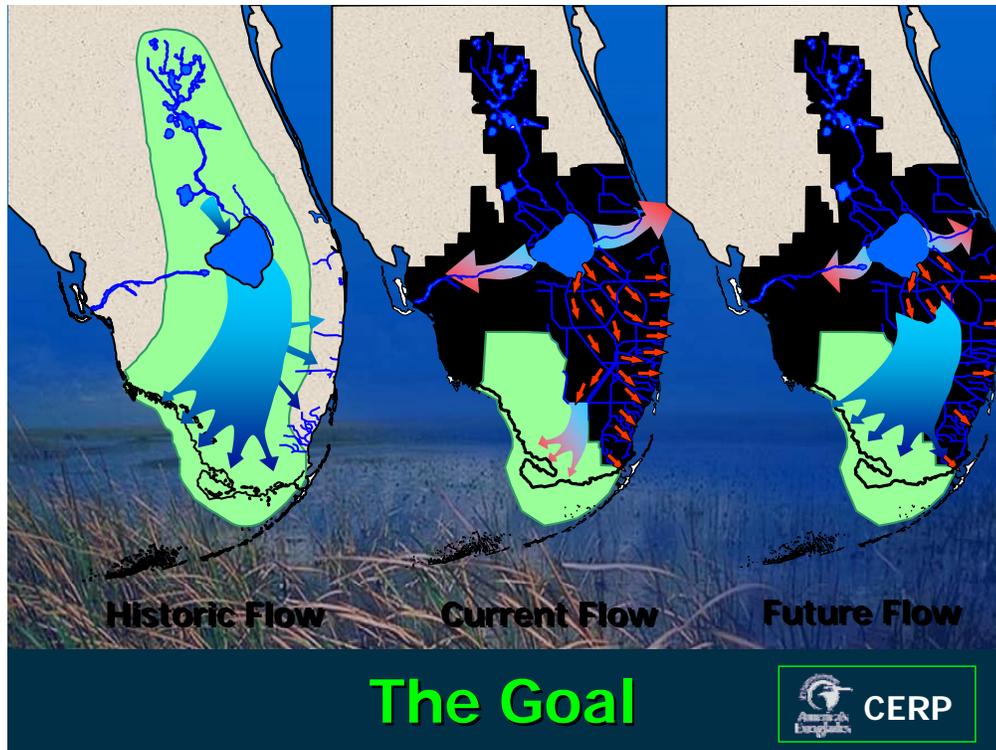


FIGURE 1-4: CERP: THE GOAL

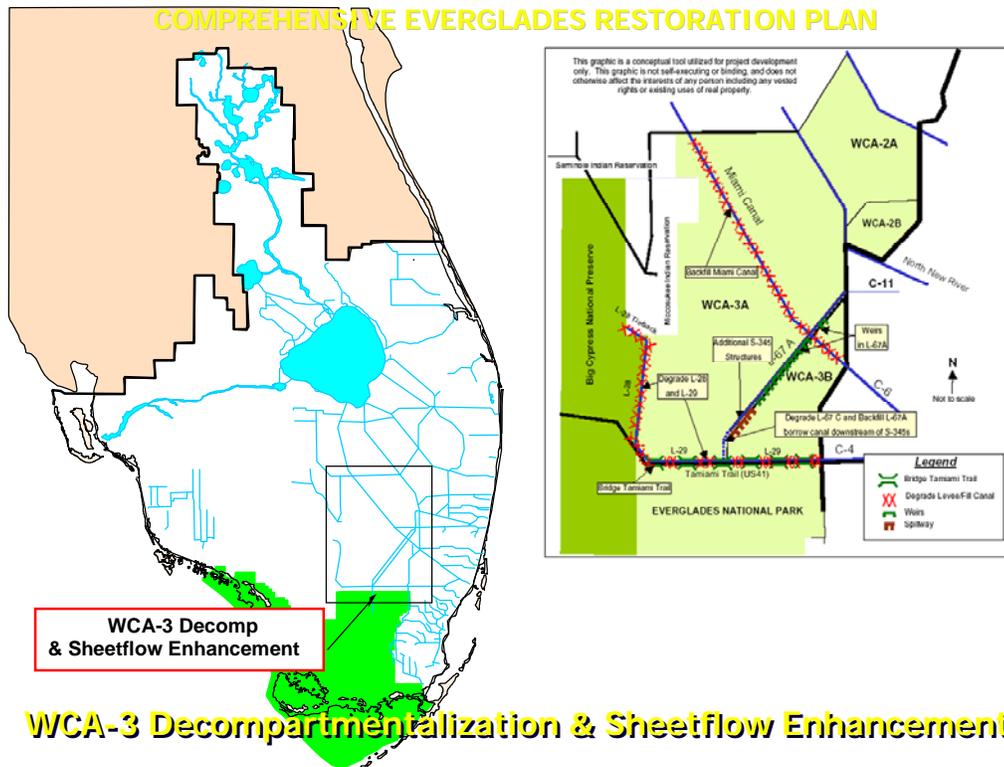


FIGURE 1-5: WCA-3 DECOMP

By the late 1990s it was known that in contrast to the 1992 GDM assumption, the existing culvert sets through Tamiami Trail were inadequate to pass Mod Waters design flows, and that operating with no additional conveyance structures would ultimately damage the road bed. The GDM merely recommended changing the flow distribution across the Trail such that 55 percent of total flows would be delivered east of the L-67 Levee and 45 percent delivered to the west. However, subsequent studies showed that, while the design volumes of water could indeed be passed through the Trail into NESRS, this flow rate through the culverts would only occur with a high “head” on the north side of the culverts; that is, after water levels on the north side of the road increased enough to force water through. Under current operating conditions, such high levels would occur in the rainy season, except that deliveries are stopped to avoid exceeding a stage of 7.5 feet in L-29 Canal, the level considered safe by Florida Department of Transportation (FDOT) standards. Operational safeguards to prevent damage include closing the S-333 Structure according to stage readings on a gauge south of the Trail to avoid high heads in L-29. If high levels were to occur regularly or persist for longer periods they would make the road vulnerable to structural damage.

In 2003, a reevaluation of features along the 10.7-mile stretch of Tamiami Trail east of the L-67 Levee recommended a 3,000-foot bridge and a proposed real estate agreement to pay compensation for a flowage easement. The USACE published a General Reevaluation Report (GRR) and EIS in 2003² which recommended a 3,000-foot bridge and noted that the original GDM had probably underestimated the design high water stage. The 2003 study used a design water elevation of 9.7 feet. Although this report recommended acquiring a flowage easement over the unbridged part of Tamiami Trail and compensation to FDOT for damages, no agreement could be reached with FDOT; because of lack of state agency support the report and EIS were withdrawn.

In the 2005 RGR and SEIS, the recommended plan was Alternative 14—construction of a three-mile, two-bridge alternative and reconstruction of the entire 10.7 mile stretch of Tamiami Trail to accommodate the higher water levels (up to 9.7 foot stage) under the road. After extensive public and agency coordination a ROD identifying the Selected Plan was signed on January 25, 2006, and Alternative 14 was forwarded to Congress. Congress found the estimated cost of the 2005 plan unacceptable and the Congressional managers drafting WRDA 2007 directed the USACE to conduct this reevaluation study.

Estimated costs for the Tamiami Trail features have grown markedly since the original authorization, due to the cost of reinforcing the highway, the cost of improving conveyance and significant increases in the costs of construction materials. As costs of materials, including fuel, real estate, steel, Portland

² http://planning.saj.usace.army.mil/envdocs_A-D/Dade_Co/Tamiami_Trail/index.html

cement and asphalt continued to rise in world markets during the 2006-2008 period the estimated cost of the 2005 Selected RGRR Plan increased dramatically from \$144 million to the approximately \$430 million shown in this report.

The conference report language for WRDA 2007 directed the Chief of Engineers to conduct this reevaluation study. Implicit in the direction was a requirement that the new recommended alternative be less costly than the previous recommended plan.

1.3 Study Scope and Organization

From the conference report language the intent of Congressional managers was that the Chief of Engineers implement cost effective measures to immediately improve water deliveries and adopt an adaptive management approach toward restoring flows to ENP. The managers targeted immediate flow increases to 1,400 cfs, with a target of 4,000 cfs under the Trail to address GDM estimates of peak flows. Flows less than 1,400 cfs were perceived as not being able to produce a measurable benefit to the ENP.

This report documents previous and recent studies to modify Tamiami Trail. It provides a summary of the following information:

1. Updated cost estimates of previous plans proposed in the 2005 RGRR for an improved water delivery system for ENP, including incorporation of cost saving measures and value engineering proposals.
2. Limited reevaluation of alternatives, including cost analyses, for all proposed structural alternatives. Alternatives were arrayed and evaluated stepwise in order of increasing magnitude and potential cost.
3. Evaluation of each alternative's potential to meet flow volume, velocity and distribution targets, as well as potential ecosystem restoration benefits associated with each alternative.
4. Evaluation of forward compatibility with potential CERP actions in the CERP "WCA-3 Decompartmentalization" project element.

This report includes a general description of all viable alternatives, cost estimates, and environmental benefits analysis. Recommendations were developed considering environmental benefits produced, cost, future CERP flow needs, and other relevant factors.

1.4 Purpose of and Need for the Action

The purpose of this Limited Re-evaluation is to answer directives from the Managers' language cited in Section 1.1. The USACE and ENP must recommend a plan in a Report to Congress no later than July 1, 2008. This

report must identify a plan that is efficient, complete and acceptable in terms of cost and specified hydrologic targets that generate desired ecological responses.

The need for the action is the same as cited in the Mod Waters Tamiami Trail Modification 2003 GRR and the 2005 RGRR: In its current condition, the segment of Tamiami Trail located between S-334 on the east and S-333 on the west has inadequate capacity to deliver the volumes of water required to restore ENP and in NESRS without risking damage to the roadbed and its eventual degradation and causing a backwater impact on WCA-3B potentially drowning tree islands. The recommended plan must address: (1) measures to increase conveyance of water to NESRS, and (2) modifications to the existing roadbed, if any, required to allow this conveyance.

The flow requirement of the MWD to ENP Project has generated considerable confusion as to the intent of the Congressional Authorization. The Everglades National Park Protection and Expansion Act (PL 101-229) Sec 104(a) (1) did not authorize a specific flow rate but states, as cited in Section 1.1, to “improve water deliveries into the park” and “take steps to restore the natural hydrological conditions within the park.”

The Managers’ language references recommendations of the 1992 GDM relative to maximum average rainy season flows and maximum flows. The final 1992 GDM Report, Part 1 Supplement 54 General Design Memorandum and Environmental Impact Statement Modified Water Deliveries to Everglades National Park, Florida June 1992, Section H. Recommended Project (page 52) defines the measures for which restoring the natural hydrologic conditions to the extent practicable would be met:

“The goal of restoring natural hydrologic conditions will be met in terms of all three of its dimensions: location, timing and volume:

- a. Location–The historic path of Shark River Slough will be restored by bringing WCA-3B and NESRS back into the flow-way between WCA-3A and ENP.*
- b. Timing–Water flows through the restored Shark River Slough will reflect natural local meteorological conditions, including the extremes of natural droughts and floods, and variations in the annual seasonal and long-term cycles.*
- c. Volume–The volume of water delivered will reflect the naturally available supplies based on local meteorological conditions, except in cases where operations of the C&SF project for other authorized project purposes necessitate increased or decreased deliveries. Natural hydroperiods will be restored.”*

In addition, the 1992 GDM Report, Part 1 Supplement 54 General Design Memorandum and Environmental Impact Statement Modified Water Deliveries to Everglades National Park, Florida June 1992, Section I. Environmental Analysis (page 58) went on to state:

“Hydrologic restoration of WCA No. 3B is also essential to restoring natural water conditions in the Park. Diversion of flood waters from WCA No. 3A into detention in WCA No. 3B would decrease the volume of and, in some cases, the need for regulatory water releases in to the Park from WCA No. 3A. This would reduce the frequency of unnatural distributions of water across SRS, and further reduce the occurrences of alligator nest flooding south of the S-12s. The ability to discharge an additional 2,000 cfs of water in to NESRS through the new S-355 structures and 1,300 cfs through S-333, would allow full restoration of historic water depths in the center of the slough, thereby causing reflooding of the short-hydroperiod marshes on the eastern slope of the slough. This would accrue all the wildlife benefits from increased primary and secondary productivity previously discussed. In addition, aquifer recharge, reestablishment of groundwater flows, surface water reconnection between SRS and Taylor slough, and restoration of estuarine productivity would be maximized.”

The specific high flow rate value of 4,000 cfs is based on the total capacity of flow for the recommended structures that would be implemented under this plan to deliver water (Volume) into the L-29 Canal between structures S-333 and S-334, inclusive of the seepage return flow from pump station S-356. These structures and their maximum discharge capacities are:

- S-333 (1,350 cfs), discharges water from WCA-3A
- S-355A (1,000 cfs), discharges water from WCA-3B
- S-355B (1,000 cfs), discharges water from WCA-3B
- S-356 (950 cfs), returns seepage water from NESRS

The 4,000 cfs peak flow volume for the MWD to ENP Project is important because it allows for a discharge sufficient to create the physical changes to the landscape (geomorphology of the system). The changes that occur during these peak discharges are important ecologically; for example, these types of volumes clean out sloughs, potentially create new sloughs, and are important for creating favorable ecological conditions in NESRS that would persist for the wet season and into the dry season. It is even desirable, but beyond the scope of MWD, to actually achieve flows greater than 4,000 cfs. The general goal of MWD to ENP was to restore, to the extent practicable, the natural hydrology of the system. It is felt that the 4,000 cfs discharge into NESRS is approximately representative of a 1 in 10 year flow event. At a minimum the system would have to experience

the variability of stages up to a 1 in 10 year event to allow positive ecological changes.

Under current conditions, the existing 19 sets of culverts under Tamiami Trail cannot meet the target discharge of 4,000 cfs into ENP unless stages on the north side of the culverts in L-29 Canal are raised very high. These higher stages result in structural damage to the Tamiami Trail roadway embankment and increase the likelihood of flooding tree islands within WCA-3B. In its current condition, Tamiami Trail does not have the structural capacity to pass a rainy season average of 1,400 cfs without violating the FDOT stage constraints of 7.5 ft, National Geodetic Vertical Datum (NGVD) for Tamiami Trail.

The 2005 RGRR selected alternative had a one-mile eastern bridge, a two-mile western bridge, and the roadway embankment design was based on elevation 9.7 feet, NGVD (referred to as the Design High Water). One intent of the 2005 RGRR selected alternative was to provide unconstrained flow into ENP. This did not mean that the 9.7 foot stage would not be exceeded, but if the stage were to be exceeded, then the system would not have to be controlled as currently required. In other words, flows and stages would be representative of the naturally available supplies based on local meteorological conditions. This alternative would allow for the 4,000 cfs flow target to be met.

The goal of MWD and therefore this LRR is to evaluate alternatives in terms of their capability to increase flow volume, timing and location to restore the natural hydrologic conditions of the Shark River Slough to the extent practicable. Future construction of the CERP and other project elements, especially storage reservoirs, seepage buffers and decompartmentalization of WCA-3, may allow for future higher volume releases to increase in frequency and duration. It is thus desirable, at a minimum, to indicate which plans could be compatible with further future modifications to increase water deliveries.

1.5 Study Sponsor

The U.S. Department of the Interior (DOI) has provided most of the federal funding to develop the MWD Project elements to date and is a cooperator under the NEPA for this Report. The SFWMD is the non-federal sponsor for operation and maintenance of the C&SF Project, as specified in the 1994 Project Cooperation Agreement (PCA). To ensure appropriate and timely coordination of federal/state activities, an interagency advisory team consisting of the DOI (US Fish and Wildlife Service [FWS] and NPS-ENP), the SFWMD, the Florida Fish and Wildlife Conservation Commission (FWC), the FDOT and the FDEP provided technical input for this report.

1.6 Project Location/Congressional District

The study area includes WCA-3A and 3B, as well as the portion of NESRS located within ENP. The project location, with structures included, is shown in *Figure 1-2*. The proposed project is within Florida's 25th Congressional District.

The project features are located on US Highway 41, commonly referred to as the Tamiami (Tampa to Miami) Trail, which connects Miami and Tampa. The project location is a 10.7-mile stretch of the highway just west of Miami. The western end of the area is at S-333 near the L-67 Extension Levee, and the eastern end is at S-334 near the L-30 Levee and Canal and the L-31N Levee. The L-29 Canal (also known as the Tamiami Canal) runs along the north side of Tamiami Trail. The L-29 Levee runs along the north side of the L-29 Canal. The levee comprises the southern boundary of WCA-3B. *Figure 1-6* shows a cross section of Tamiami Trail, depicting the relationships among WCA-3B, L-29 Levee, L-29 Canal, Tamiami Trail, and ENP.

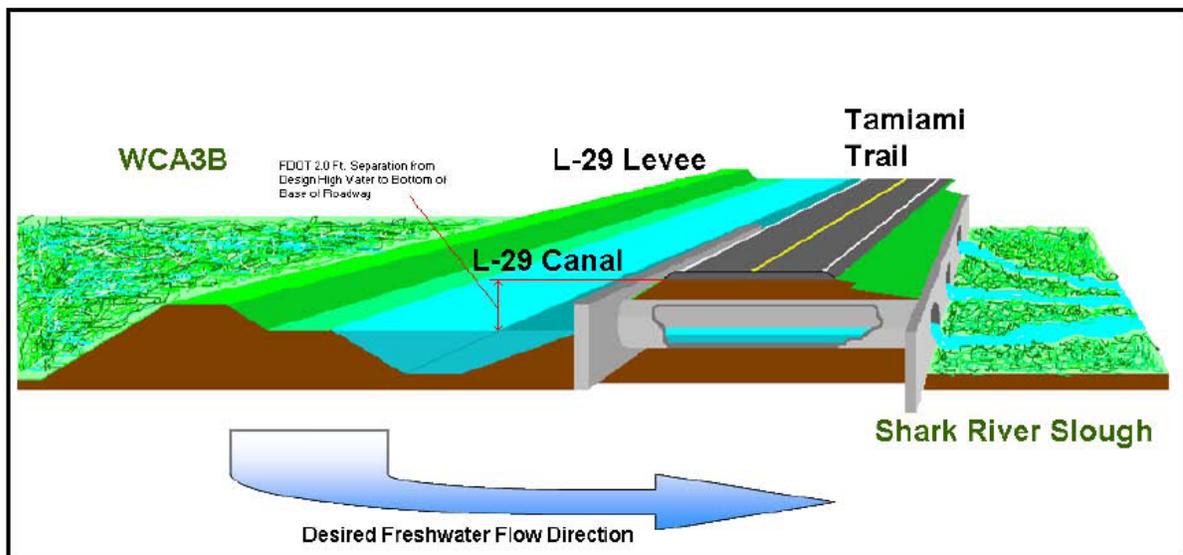


FIGURE 1-6: CROSS-SECTION OF TAMIAMI TRAIL
(current conditions)

1.7 Current Conditions

Over the last 50 years, the C&SF Project contributed to agricultural and residential development in south Florida through the conversion of nearly half of the Everglades ecosystem from wetland habitat to agricultural and urban uses. This development, which occurred along the eastern margins of the original marshlands north of Tamiami Trail, reduced the lands available for storing water and delivering it southward. Additionally, the C&SF Project has altered the hydrology of the remaining Everglades system through the operation of its

network of canals and levees. The altered timing of wet and dry cycles has resulted in water conditions that do not correspond to life cycles of native species. As a result, more water now flows through canals to the east and less flows southward through ENP to Florida Bay than occurred historically. Generally, the C&SF system makes it difficult to provide natural timing, volume and distribution. In wet periods, water is impounded in the WCAs and then discharged to Everglades or coastal canals. During dry periods, water can flow through the canals to coastal areas and bypass the ENP wetlands. Currently the system is operated under the Interim Operating Plan (IOP) for protection of the Cape Sable seaside sparrow (CSSS).

1.8 Prior Reports and Water Projects

The following prior planning efforts and reports are related to the Tamiami Trail portion of the MWD to ENP:

1. 1992 General Design Memorandum-Modified Water Deliveries to ENP Central and Southern Florida Projects
2. 2002 and 2006 Interim Operational Plan for protection of the CSSS, Final Environmental Impact Statement (EIS) and Record of Decision (July 2002), Final Supplemental Environmental Impact Statement and Record of Decision (May, 2007)
3. 8.5 Square Mile Area, General Re-evaluation Report and Final EIS, July 2000, Record of Decision Signed 6 December 2000
4. 2003 General Reevaluation Report and Supplemental Environmental Impact Statement (GRR/SEIS) for the Tamiami Trail Modified Water Deliveries to Everglades National Park (withdrawn)
5. 2005 Revised General Reevaluation Report³ and Final Supplemental EIS, Tamiami Trail. December 2005 (ROD signed January 25, 2006)

1.9 Current Studies

As discussed earlier, Congress provided language that the Chief of Engineers “pursue immediate steps to increase flows to the Park of at least 1,400 cfs, without significantly increasing the risk of roadbed failure.” Spreader swales, east-west ditches designed to receive and help deliver water from Tamiami Trail culverts to the marshes, were considered within the suite of LRR alternatives.

Modeling and evaluation of LRR alternatives suggests that spreader swale implementation would have minor hydrologic benefits that may not be ecologically significant.

Because technical disagreements exist regarding the ability to adequately simulate spreader swale performance, the NPS is taking the lead on a separate planning and NEPA process to consider a spreader swale pilot project and

³ <http://www.saj.usace.army.mil/dp/mwdenp-c111/index.htm>

further evaluate the potential benefits of spreader swales along the Tamiami Trail.

1.10 Prior Coordination and Public Scoping

Two previous planning studies have been published, recommending two different alternatives for providing conveyance across Tamiami Trail. The 2003 final GRR and SEIS recommended an alternative of a 3,000-foot long bridge along the 10.7-mile stretch of Tamiami Trail. After this document underwent public and agency coordination, many agencies and environmental groups, including ENP, recommended further studies and evaluation to determine if a greater conveyance capacity could be justified. These studies led to the 2005 RGRR and SEIS, which recommended a one-mile long east bridge and a two-mile long west bridge. Both of these studies aroused considerable public and agency interest, and some controversy. Previously identified public issues and concerns included: maximizing potential connectivity between the ecosystems and communities of the WCAs and the ENP; restoration of historic deep water areas (sloughs) and medium-hydroperiod marshes; restoration of typical ridge-and-slough ground patterns by restoring higher-velocity sheet flow; maintenance of typical ecotourism businesses to the extent feasible along the south side of Tamiami Trail; impacts on the road itself and on other business properties; potential impact on Miccosukee camps and traditional use areas; and potential impacts on endangered species and their habitats. Federal and state agencies including FDOT, FDEP, FWC, Florida State Historic Preservation Officer (SHPO) and Florida Department of State, as well as the DOI, NPS and FWS, the general public and the Miccosukee Tribe provided comments and recommendations for these previous reports.

ENP has accepted an invitation from the USACE to be a NEPA cooperating agency. Agencies that were invited to be NEPA cooperating agencies for this LRR/EA include the SFWMD, FDOT and FDEP. A general public scoping letter was mailed on January 28, 2008, and was closed on March 7, 2008 inviting all concerned agencies and citizens who provided previous comments to provide information on their ongoing issues, concerns and recommendations for this study.

Concerns that have been emphasized in recent scoping responses include the following:

- The suite of studied alternatives includes several that would have provided very substantial potential benefits but were eliminated due to extremely high cost.
- Several government and non-government agencies consider a stage increase of one foot, which would provide a stage constraint of 8.5 feet, a more environmentally favorable stage. Scoping comments from SFWMD, FWS and FWC favor raising the stage constraint to 8.5 feet.

- Additionally many commentors feel that the ability to pass 4,000 cfs is equally important as an average peak rainy season flow goal.
- Representatives of the Miccosukee Tribe, in meetings with USACE representatives, repeated previous comments that cleanout or expansion of the culverts and regular maintenance thereafter would provide sufficient benefits, citing the high cost of bridges relative to road repair as one reason for these comments.
- The FWC would like serious consideration given to improving conveyance along other portions of the Trail in addition to the bridge on the eastern portion.
- Miami Dade County expressed concern about potential seepage and flood protection level of service to the east.
- Some commentors repeated previous calls for bridging the entire road segment to maximize potential re-connection of the WCAs and Park wetlands.
- One commentor, representing several non-governmental organizations and herself, objected to concrete bridge construction on the assumption that the cement used would ultimately come from limestone mines in the Lake Belt area.
- FDOT Representatives called for full inclusion of road repair costs in all project alternatives, and provided detailed specifications for road design along this stretch of Tamiami Trail.
- The Sierra Club stated support for the “Blue Shanty Plan” and asked the USACE to adopt all or a portion of that plan.
- Radio One is concerned with potential flooding impacts to its property.

1.11 Draft LRR Coordination

The draft LRR has been through several levels of review and coordination. Before the draft LRR was released to the public an Independent Technical Review (ITR) was performed by staff from other USACE districts.

The draft LRR was released for public and agency review on April 9, 2008 and available for public comment through May 9, 2008. The draft LRR was sent to local, state, and federal agencies, private interest groups, and interested public for review and comment. Public libraries in the project area were provided copies to maintain in the reference section of the libraries for public review. The draft LRR was also posted on www.evergladesplan.org for web viewing. Comments were submitted via an email address or by regular mail. Once the draft was released, public and stakeholder meetings were held to allow interested parties the opportunity to comment on the document.

Many comments were received in response to the draft LRR. A matrix of the comments and responses, as well as copies of the correspondence, is provided in Appendix J. Comments received during the review were considered in preparing

the final study documents and revisions were made to the report based on these comments.

In addition to the public and agency comments on the draft LRR, there was an External Peer Review (EPR) as well as a model certification review completed according to USACE regulations. The EPR was completed by a panel of independent scientists and engineers to review the technical rigor of the document and analysis. The model review was also completed by an independent review panel focused specifically on the model used in the alternative analysis. All comments submitted by the EPR team and the model review team to the study team were reviewed and answered. Both the EPR and model certification have been completed and approved by both teams.

1.12 Decisions to be Made

The adoption of a Recommended Plan, after USACE-Headquarters (HQ) approval, public and agency coordination of this LRR/EA, is the primary decision that must be made. As directed in the Conference Report for WRDA 2007, the cooperating federal agencies must recommend a plan to Congress by July 1, 2008 to provide immediate steps to increase flows to the Park.

Five agreements are needed in order to implement the Tamiami Trail Project.

1. Land Management Agreement—needed to complete the PCA (see item 3 below). This agreement is between USACE, DOI, and SFWMD on how to manage the project features where they extend into lands owned by ENP.
2. Florida Power and Light (FP&L) Perpetual and Temporary Construction Easements—agreement between USACE and FP&L that conveys rights to USACE to allow construction of the project bridge as well as a conveyance channel underneath the bridge on their land.
3. PCA Amendment—legally binding agreement between USACE and SFWMD identifying the SFWMD project duties and obligations for the operation, maintenance, repair, replacement and rehabilitation (OMRR&R) of the project.
4. Highway Easement Deed (HED)—legal mechanism negotiated by DOI, Federal Highway Administration (FHWA), FDOT, SFWMD and USACE to convey lands necessary for the construction and operation of the one-mile bridge from ENP through FHWA to FDOT including a flowage easement and a channel easement.
5. Relocation Agreement—final agreement; agreement between USACE and FDOT to acquire the real estate rights to enter onto FDOT lands (from HED) to construct features and modify the existing roadway, a channel easement at the bridge location, and a flowage easement for the entire expanse of roadway within the project limits (i.e., 10.7 miles).

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