

SECTION 1.0 INTRODUCTION

In December 1989, the Secretary of the Army was authorized by the Everglades National Park Protection and Expansion Act to undertake certain actions to improve water deliveries to the Everglades National Park (ENP) and take steps to restore natural hydrologic conditions. As a means to identify the steps needed to restore natural hydrologic conditions, a General Design Memorandum (GDM) for Modified Water Deliveries (MWD) was completed in June 1992 that outlined how water would be transferred from WCA 3B to the L-29 Canal and through the existing culverts south under U.S. Highway 41 (Tamiami Trail) into Northeast Shark River Slough. Upon completion of the GDM, it was believed that the existing culverts under Tamiami Trail would be adequate to convey the flow of water anticipated under MWD. However, subsequent hydrologic analyses revealed that the head height in the L-29 Canal required for the culverts to convey the increased flows could adversely affect the structure of the road and possibly overtop some road sections under certain conditions. The purpose of this General Reevaluation Report (GRR) is to identify a technical solution to provide modifications to Tamiami Trail so that there will be unimpeded conveyance of water from WCA 3B and the L-29 Canal to the Northeast Shark River Slough and the Everglades National Park south of the Tamiami Trail. This document is an integrated General Design Memorandum. The contents of a Final Supplemental Environmental Impact Statement are integrated into this document (GRR/FSEIS).

The project area of focus for this GRR is the Tamiami Trail, shown in Figure 1, which is within the overall project boundaries of the Modified Water Deliveries to Everglades National Park ("Mod Waters" or MWD) Project. The project area is located in Miami-Dade County, in southern Florida, adjacent to the northern boundary of ENP. As stated, the purpose of this project component of MWD is to identify a means for conveying increased flows of water under the Tamiami Trail into ENP. The overall purpose of the MWD Program is to restore natural hydrologic conditions to the extent practicable in ENP as authorized in the Everglades Protection and Expansion Act of 1989. The projected (maximum) MWD flow is 4,000 cubic feet per second (cfs), through the 10.7-mile project segment of Tamiami Trail (flows are from north to south).

This section of the report describes the study's authority, partners, purpose, and scope. It includes discussions of compliance with the National Environmental Policy Act (NEPA) and provides a brief overview of the MWD program and other related studies, reports, and programs.

Under the authority of the modification to the Central and Southern Florida Project, known as the Modified Water Deliveries to Everglades National Park Project, (Project), it has become necessary to address the needs of the Tamiami Trail Project Component for conveyance through Tamiami Trail (US Highway 41).

The purpose of this GRR is to define and describe the project features needed to convey the increased flows through Tamiami Trail. The project features consist of the real estate interests for (1) a 3,000-foot conveyance channel/easement to be located between Blue Shanty Canal and Coopertown, (2) the perpetual right for conveyance through the existing structures (57 culverts) along Tamiami Trail, and (3) a flowage easement throughout the remaining segment of Tamiami Trail between S333 and S334.

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These real estate interests are the project features and are necessary to convey the authorized design flows of the MWD Project through Tamiami Trail. The modifications to Tamiami Trail to pass the MWD flows are considered substitute facilities, not project features, and serve as the compensation to the current real estate owner.

The 3,000-foot conveyance channel easement, use of the conveyance structures, and a flowage easement are the project features, which are needed for the project to function and are to be operated and maintained by the Non-Federal Sponsor.

This GRR sets forth the evaluation of the substitute facilities proposed for construction as compensation for the required real estate interests. The substitute facilities are not project features and are not needed for the project to function. They are provided to the owner as substitutes for the affected public utilities (U.S. 41) so that the public utilities can continue to function. The substitute facilities will not be operated and maintained by the Federal or Non-Federal Sponsor. The substitute facilities for the final recommended plan consist of two items: (a) a 3,000-foot bridge and (b) pavement upgrades to the unbridged portion of Tamiami Trail road between S333 and S334.

As part of the recommended plan, the Federal government will acquire the real estate interests needed for the Tamiami Trail project. The appropriate organizations at the Federal and State levels will develop and approve an agreement containing the details and method of implementation. It is the intention of the Federal government not to expend any more funds than necessary to construct substitute facilities for the Tamiami Trail that a future project under CERP may impact.

The substitute facilities that are constructed as part of this MWD project must be compatible with Project purposes. Thorough discussions and evaluations of the substitute facilities occurred during the plan formulation process and are presented in the body of the GRR.

Authorization under this GRR is sought for only the Project features needed to complete this MWD Project. The description, evaluation, and recommendation of the substitute facilities are provided to establish that substitute facilities can be implemented to pass the anticipated MWD flows.

1.1 STUDY AUTHORITY

The Everglades National Park Protection and Expansion Act (PL101-229, Section 101, 16 U.S.C. Part 410r-5 *et seq.*), December 1989 (Appendix A) authorized the Secretary of the Army to undertake certain actions to improve water deliveries to ENP to the extent practicable to restore natural hydrologic conditions. This act provides the underlying authority for this project. Section 101 of the Act states:

The Everglades National Park is a nationally and internationally significant resource and the park has been

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adversely affected and continues to be adversely affected by external factors which have altered the ecosystem including the natural hydrologic conditions within the park."...." Wildlife resources and their associated habitats have been adversely impacted by the alteration of natural hydrologic conditions within the park, which has contributed to an overall decline in fishery resources and a 90 percent population loss of wading birds.

The Act also provided direction for the U.S. Army Corps of Engineers (USACE) to initiate corrective actions to alleviate deterioration in natural resources of ENP attributed to changes in water conditions associated with construction of the Central and Southern Florida (C&SF) water management system. The Act states:

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.

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 Natural Resources and the Committee on Public Works and Transportation of the United States House of Representatives.

The General Design Memorandum (GDM) called for in the Act was completed in June 1992. This GDM and Environmental Impact Statement (EIS) for MWD to ENP is the authorizing document for structural modifications and additions to the existing C&SF Project required for the modification of water deliveries for ecosystem restoration in ENP. The 1992 GDM stated:

The future-without project condition will lead to the further deterioration of unique and outstanding ecological resources of the Everglades that are recognized and valued throughout the world. Therefore, based on the

direction provided in ENP Protection and Expansion Act of 1989, the goal is to restore natural hydrologic conditions in the Park to the extent practicable. Meeting this goal will lead to improvements in the abundance, diversity and ecological integrity of native plants and animals in the Park.

1.2 PROJECT PARTNERS

The South Florida Water Management District (SFWMD) is the local, non-Federal sponsor for this C & SF project. An interagency advisory team, consisting of the U.S. Department of Interior (Fish and Wildlife Service [USFWS], National Park Service Everglades National Park), the Florida Fish and Wildlife Conservation Commission (FWC), the Florida Department of Transportation (FDOT), the Miami-Dade County Department of Environmental Resource Management (DERM), and the Florida Department of Environmental Protection (FDEP), provided initial technical input for this report.

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1.3 PURPOSE AND SCOPE OF STUDY

1.3.1 Purpose and Need for Action

Under the current authorized and approved plan, water would be passed from WCA-3B through two water-control structures, S-355A and S-355B, to the L-29 Canal and through the existing culvert system under the Tamiami Trail into Northeast Shark River Slough (NESRS) within ENP. When the GDM was completed in 1992, it was believed that existing culverts under the roadway would be adequate to convey the flow of water without any collateral impacts. Subsequent hydrological analyses, however, revealed that the head height in the L-29 Canal required for the culverts to convey the increased water could adversely affect the structure of Tamiami Trail and even overtop the highway under certain conditions.

The purpose of this project is to identify the conveyance requirements for Tamiami Trail that would provide for the authorized flow of water from the L-29 Canal north of the Tamiami Trail to the NESRS and ENP south of the Tamiami Trail, as provided by the 1992 GDM for Modified Water Deliveries to the Everglades National Park.

1.3.2 Study Area

Per the 1992 GDM, a flow of 4,000 cfs was identified as being the MWD flow.

The study area is located in the western-central portion of Miami-Dade County, Florida. The potentially impacted local areas lie in a narrow strip on either side of the existing U.S. Highway 41, commonly called the Tamiami (Tampa to Miami) Trail. The Tamiami Trail, the L-29 Canal, and particularly the L-29 levee on its north side, form the southern boundary of WCA-3B. The south side of the project area is bounded by ENP.

The limits of the project begin slightly more than one mile west of the intersection of Krome Avenue (State Road 997) and the Tamiami Trail and extend approximately 10.7

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miles to the west to Water Control Structure S-333. The L-29 Canal, also known as the Tamiami Canal, runs along the north side of the Tamiami Trail through this area. The project limits are more definitively marked at each end by two water-control structures across the canal, S-334 on the east and S-333 on the west. Bridges on top of these structures provide vehicular access across the Tamiami Canal to boat ramps and recreation sites on the north side of the canal. Unimproved roadways, one along the canal bank and one about 100 feet from the canal bank on top of the levee, parallel the canal and provide routes for vehicles. The road atop the levee appears as only two wheel tracks. These roadways are surfaced with crushed limerock. The roadways provide vehicle access for the members of the Miccosukee Indian Tribe living in the Tigertail Camp, for four boat launch ramps, and for recreational fishermen who wish to fish from the L-29 Levee.

1.4 NATIONAL ENVIRONMENTAL POLICY ACT REQUIREMENTS

The 1992 GDM/FEIS for Modified Water Deliveries to the Everglades National Park provided for the selection of a recommended plan (the Full Structural Plan) to improve hydrologic conditions in ENP, for the construction of selected structures to facilitate the natural flow of water, and the operational design of a system to achieve maximum ecosystem restoration. The 8.5 Square Mile Area segment of the Project was also re-evaluated and a new recommended plan was selected in 2000. For information on this Plan the reader is referred to the 2000 *General Re-Evaluation Report and Final Supplemental EIS*. The Original "Mod Waters" GDM/FEIS and the 8.5 SMA GRR-FSEIS are incorporated by reference into this document. This General Reevaluation Report and Supplemental Environmental Impact Statement (GRR/SEIS) for the Tamiami Trail component of the MWD Project is a supplement to the 1992 GDM/FEIS. The SEIS is a self-supporting document that is included as part of the GRR and complies with the requirements of NEPA, as provided in 40 CFR Part 1500-1508. Compliance of each alternative with all relevant Federal laws, regulations, and Executive Orders is discussed in Appendix B.

1.5 HISTORY OF THE AREA

Historically, the Everglades was a shallow wetland conveying water from Lake Okeechobee to the southern coast of Florida. Although modifications to the flow of water were begun in the 1880s, most of the flow alterations were associated with the development of the C&SF Flood Control Project, which was originally authorized by Congress in 1948 and completed in the 1960s. With the construction of WCA-3A and WCA-3B and the extension of Levee 67 (L-67 ext.), flows to ENP became subject to water supply deficits during the dry season and flood control during the wet season. As a result, ENP experienced a decline in ecological quality. Consequently, Congress passed PL 91-282 in June 1970 to establish a minimum water delivery schedule to protect ENP resources.

The Flood Control Act of 1968 provided for modifications to the C&SF Project through the implementation of the Everglades National Park-South Dade Conveyance System (ENP-SDCS). The intent was to improve the supply and distribution of water to ENP and to provide for increased agricultural and urban water needs of Miami-Dade County.

The Experimental Program of Water Deliveries to ENP (Section 1302 of the Supplemental Appropriations Act of 1984; PL 98-181) authorized modifications to the minimum water delivery schedule of PL 91-282. This was a two-year experimental program for the development of an improved schedule of water deliveries to ENP. This led to the preparation of the General Plan for Implementation of an Improved Water Delivery Schedule to Everglades National Park, Florida, which was approved by the Secretary of the Army in February 1985. This plan recommended the preparation of a GDM and EIS and extensions of time limits. Extensions were authorized by PL 99-190 (to January 1989) and PL 100-676 (to January 1992).

In 1989, Congress passed the Everglades National Park Protection and Expansion Act (PL 101-229), the basic authorization for the GDM.

Section 528 of the Water Resources Development Act enacted October 1996 (Public Law [PL] 102-580) was entitled *Everglades and South Florida Ecosystem Restoration*. This authorized a number of ecosystem restoration studies, formerly referred to as “the Restudy,” and now collectively known as the Comprehensive Everglades Restoration Plan (CERP). As a result of this Act, the Corps submitted a report to Congress on July 1, 1999, containing this comprehensive blueprint for Everglades restoration. Implementation of CERP will further increase the flow of water entering NESRS. The plan was approved as part of the Water Resources and Development Act (WRDA) of 2000. Before some of the CERP projects can have funds appropriated for construction, the MWD project must be completed per the conditions of WRDA 2000.

1.6 PRIOR STUDIES/REPORTS/RELATED PROJECTS

This study includes evaluating alternatives that will allow the passage of the MWD design flow to NESRS such that the sub-grade of the existing Tamiami Trail would not be impacted by elevated water levels in the Tamiami Canal along the north shoulder of the highway. Several previous studies are relevant to the current study.

1.6.1 General Design Memorandum and Environmental Impact Statement, Modified Water Deliveries to Everglades National Park, June 1992.

This document describes the evolution of alternative plans considered for improving water deliveries to ENP. It describes the relationships between hydrologic and ecological conditions in the Everglades, historic conditions, the existing baseline conditions, and the expected future conditions of the Everglades without improved water deliveries.

There are four separable components of the 1992 MWD GDM:

1. Conveyance of water between WCA-3A and WCA-3B (Conveyance and Seepage).
2. Conveyance of water south across the Tamiami Trail to the NESRS portion of ENP (Tamiami Trail Modifications).
3. Flood Mitigation of the 8.5 Square Mile Area (SMA) residential development along the eastern side of NESRS (8.5 Square Mile Area).

4. An overall operational plan for the water control structures incorporated in the above (CSOP and MWD for C-111).

The 8.5 SMA was the subject of a GRR completed in 2000 for which construction is underway. The conveyance of water within WCA-3 is being addressed in a separate study.

This GRR/SEIS addresses the second feature: conveyance of water across Tamiami Trail.

The 1992 GDM also provided an explanation of the chronology that was followed during alternative plan formulation and evaluation. Alternative plans were evaluated and screened out or selected for further analysis. Basic alternative plans were developed to meet the objectives of location, timing, and volume of water to be delivered to ENP. The GDM recommended several features, which included raising an approximately 1,500-foot section of the Tamiami Trail adjacent to structure S-334. Since approval of the GDM, several developments have led to the need to readdress the original recommendation for the Tamiami Trail. The 1992 GDM/FEIS is incorporated by reference into this GRR/SEIS.

1.6.2 Integrated General Reevaluation Report and Environmental Impact Statement, Canal 111 (C-111), South Miami-Dade County, Florida, May 1994

This report, which integrates a feasibility report level of documentation with an EIS, proposed to provide an assessment of the authorized C&SF Flood Control Project within the C-111 basin to ensure that measures recommended for implementation are feasible and consistent with the protection of the natural values associated within ENP and maintenance of flood control within the C-111 basin east of L-31N and C-111. Subsequent to coordination efforts concerning alternative plans, a recommended plan gradually developed. This plan included both structural and non-structural components, as well as modifications to the existing work within the C-111 basin. It is expected to restore the natural ecology of ENP, in addition to maintaining flood protection within the C-111 basin east of L-31N and C-111.

1.6.3 U.S. Fish and Wildlife Service Final Biological Opinion for the U.S. Army Corps of Engineers, Modified Water Deliveries to Everglades National Park, Experimental Water Deliveries Program, Canal 111 Project, February 19, 1999

This biological opinion, predicated on consultation by the Corps, ENP, SFWMD, USFWS, and FWC, encompassed three interrelated Everglades restoration projects: the MWD project, the C-111 projects, and the Experimental Program. This report chronicled data on the biology and ecology of threatened and endangered species in the action area, previous biological opinions prepared for similar actions in the action area, the Technical Agency Draft of Volume I of the Multi-Species Recovery Plan for the Threatened and Endangered Species of South Florida, and other published and unpublished sources of information.

1.6.4 Interim Structural and Operational Plan for Hydrologic Compliance with the Cape Sable Seaside Sparrow Biological Opinion for the Year 2000

This plan, dated February 19, 1999, documented modifications from the existing rules of operations for the southern portion of the C&SF project needed to reduce adverse impacts to the endangered Cape Sable Seaside Sparrow (CSSS). This report discussed a reasonable and prudent alternative (RPA) that can achieve the objectives of the opinion and ancillary terms and conditions needed for compliance. Specifically, the RPA demanded that, in order to meet the requirements of the Endangered Species Act:

- (1) By March 11, 1999, a minimum amount of sparrow habitat be protected from unusually high or low water levels;*
- (2) By May 1, 1999, a fire management plan be initiated;*
- (3) Between March 1, 2000, and 2003, incrementally increase protections from unusually high or low water levels; and*
- (4) Annual reports must be submitted detailing progress implementing the RPA. Other reasonable and prudent measures and recommendations were discussed.*

1.6.5 General Reevaluation Report and Final Supplemental Environmental Impact Statement, 8.5 Square Mile Area, July 2000, Record of Decision Signed 6 December 2000

This document developed an array of alternatives and recommended a partial buy-out alternative for providing flood mitigation to the 8.5 Square Mile Area (8.5 SMA), which is an inhabited area bounded on the west by ENP and separated from developed urban lands to the east by the L-31N flood protection levee and borrow canal. The report chronicled project authorization and needs and considered all significant aspects of the project, including hydrologic modeling simulations, social impact assessments, policy analysis, real estate information, engineering design and cost analysis, environmental impact assessment, economics, and review of public concerns. This plan (Alternative 6D) would consist of perimeter and interior levees, a seepage canal, and acquisition of properties that cannot be provided adequate flood mitigation necessary to meet applicable water quality standards and permitting requirements.