

5.8 ENGINEERING EVALUATION OF REFINED ALTERNATIVES

An in-depth engineering analysis was performed on each of the alternatives. The Engineering Appendix includes relevant summaries of the alternatives based on examinations of the existing highway, conceptual designs, knowledge of Florida requirements in road design, cost estimates, etc. The Engineering Appendix is available upon request.

Copies of the Engineering Appendix were distributed to various Federal and State agencies for their review and input. Opinions and suggestions from those agencies were instrumental in the selection of the alternatives to be fully developed.

5.8.1 Other Evaluation Criteria

5.8.1.1 Screening of Alternative 1

After further screening of the alternatives, it was concluded that Alternative 1 would not be considered for further evaluation because of noncompliance with FDOT/FHWA design criteria. As discussed in Section 5.6.4.2, Alternative 1 calls for no modifications to the existing roadway. With an expected high water level of 9.3 feet, the limerock base would be expected to soften and cause a reduction in strength of the road structure, therefore accelerating existing fatigue cracking and encouraging further damage. In addition, with the anticipated water elevation, overtopping could occur, thereby providing adverse implications to emergency vehicles and hurricane evacuation. For these reasons, Alternative 1 is eliminated from further consideration.

5.8.1.2 Screening of Alternatives 3 and 4

Alternative 3, construction of a new roadway to the North with eight new bridges, was developed as one of the original 13 conceptual alternatives for Tamiami Trail. Alternative 4, construction of a new roadway to the South with four new bridges, was also developed as one of the original 13 conceptual alternatives. Both alternatives were evaluated against established Project Objectives and Performance Measures. Based upon this evaluation, a decision was made not to evaluate these two alternatives further for possible implementation. When compared with the remaining alternatives, alternatives 3 and 4 show definite adverse impacts associated with their implementation.

Alternative 3 has direct impacts on the Miccosukee-Tigertail Camp during construction of the project. Alternative 4 has significant impacts on the Osceola Camp. Access and privacy to the Tigertail Camp would be directly impacted with the implementation of Alternative 3. With Alternative 4, impacts to the privacy and access of the Osceola Camp, as well as the loss of structures, are present. FDOT noise criteria are exceeded in the vicinity of the Tigertail Camp with Alternative 3 and at the Osceola Camp with Alternative 4. Increased wetland functional units are lost with the implementation of Alternative 3 and 4 when compared with the remaining alternatives. When considering permanent loss of wetlands, alternatives 3 and 4 impact more acres than the remaining alternatives. With the shifting of Alternative 3 to the north of the existing Tamiami Trail, there would be increased impacts to fish and wildlife. When considering the purpose of the MWD project, and compared with remaining alternatives, the costs of alternatives 3 and 4 do not perform as well. Their cost exceeds other alternatives that accomplish the same objectives. The cost of Alternative 3 is more than three times greater than the funds identified in the Capital Asset Plan.

Alternatives 3 and 4 would significantly affect biological resources and residential areas. Alternative 3 would reroute the highway north into WCA-3B, encroaching on the wading bird colony at Frog City. USFWS expressed concern that the Frog City colony would be abandoned. In addition, by relocating the highway closer to the Tigertail Camp, Alternative 3 would expose residents to greater traffic noise and create increased safety risks to children. Alternative 3 could result in environmental justice violations. Alternative 4 also would relocate the highway to the south, potentially adversely affecting the wood stork colonies at the Tamiami East and Tamiami West sites. Alternative 4 would require the incorporation of more wetlands into the right-of-way than most other alternatives. At the Osceola Camp Alternative 4 would result in the loss of facilities and an increase in highway noise, and also could result in environmental justice violations. Businesses within the project corridor would lose facilities.

Alternatives 3 and 4 are not being considered for selection as the final recommended plan due to the above listed adverse impacts.

5.8.1.3 Screening of Alternatives 5 and 6

Alternative 5 was developed as one of the original 13 conceptual alternatives for Tamiami Trail. It consists of a 10.7-mile causeway elevating the roadway above the North East Shark River Slough flow way. Alternative variation 5c completely removes the barriers to flow, Tamiami Trail, and allows for unimpeded sheet flow from the L-29 Canal into North East Shark River Slough. In addition to providing extensive uniform sheetflow, this alternative also allows for ecological connectivity between Water Con-

ervation Area 3B and Everglades National Park. It is recognized as the plan that maximizes environmental outputs without regard to fiscal or other constraints. DOI in the Fish and Wildlife Coordination Act Report (CAR) designated Alternative 5 as the “Environmentally Preferred Alternative, Performs Best for Environmental Objectives without Regard to Fiscal Constraints.” The complete CAR can be found in Appendix I.

Alternative 6, which consists of a 4-mile bridge, was developed by the planning team as a scaled-down version of Alternative 5 as another means to meet the objectives of Modified Water Deliveries, increase sheet flow, and promote ecological connectivity. It is recognized as the plan that provides substantial environmental output without regards to fiscal or other constraints. The CAR designated Alternative 6 as “Performs Well for Environmental Objectives without Regard to Fiscal Constraints.” The CAR can be found in Appendix I.

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Alternatives 5 and 6 are not being considered for the final recommended plan due to fiscal and other constraints.

5.8.1.3.1 Fiscal Constraints. The current level of funding available for Tamiami Trail Modification under Modified Water Deliveries is \$20.215 million as identified in the DOI Capital Asset Plan. Reference on current funding levels can be made to the June 2001 version of the Capital Asset Plan (OMB Circular A-11 Exhibit 300 (b), Modified Water Deliveries).

Implementation of Alternatives 5 and 6 is not viable because they are not the most efficient use of funds to achieve the goals of this MWD project. Other alternatives that have been evaluated during development of this GRR satisfy the goals of the project in a more efficient manner. Therefore, these two alternatives are not being carried forward for further consideration. Alternative 5 is about 7 times greater than currently available in the Capital Asset Plan and Alternative 6 is about 3.5 times greater than the funds available. (Alternative 3 is also more than 3 times greater, however, as discussed above, there are additional reasons for excluding this as a practical alternative.) The Everglades Expansion and Protection Act does state that the MWD Project features 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....” However, the Federal Government also recognizes that limited funds are available for the project as reflected in the CAR.

In addition to funding constraints, Alternatives 5 and 6 are not being recommended for implementation because of their extreme high cost and the uncertainties inherent in future detailed CERP efforts. All information and details provided in this report, however, should be useful to the future CERP study of this roadway.

Alternatives 5 and 6 may be significant elements of the eventual ecological restoration to be achieved via the now authorized CERP project. These alternatives realize the upper range of environmental benefits and may or may not be the ultimate solution to be recommended by future CERP detailed studies. Their inclusion is in response to very strong public interests (i.e. all environmental agencies and interests including Department of Interior), which at this time strongly believe construction of a causeway to be the ultimate solution.

5.8.1.3.2 Other Constraints. WRDA 2000 § 601(b)(2)(C) authorized raising and bridging of Tamiami Trail as an "Initial Project" of the Comprehensive Everglades Restoration Plan. Subsection 601(b)(2)(D) required the Secretary of Army to review and approve a project implementation report prepared under that § 601(f) and (h), and to submit that report to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate. Prior to any appropriations being made, subsection 601(b)(d)(2) also required completion of the project to improve water deliveries to Everglades National Park authorized by Section 104 of the Everglades National Park Protection and Expansion Act of 1989, and approval of the project implementation report by those Committees.

Conditions:

(iv) MODIFIED WATER DELIVERY – No appropriation shall be made to construct the Water Conservation Area 3 Decentralization and Sheetflow Enhancement Project (including component AA, Additional S-345 Structures; component QQ Phase 1, Raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within WCA 3; component QQ Phase 2, WCA 3 Decentralization and Sheetflow Enhancement; and component SS, North New River Improvements) or the Central Lakebelt Storage Project (including components S and EEE, Central Lake Belt Storage Area) until the completion of the project to improve water deliveries to Everglades National Park authorized by section 104 of the Everglades National Park Protection and Expansion Act of 1989 (16 U.S.C. 410r-8)."

The report is prepared under the authority of the Everglades National Park Protection and Expansion Act of 1989, and to implement completion of the project to improve water deliveries authorized in that Act. It is not intended to be the project implementation report to implement the Initial Project in the Comprehensive Everglades Restoration Plan discussed in § 601 of the Water Resources Development Act of 2000, nor is it intended to prejudice the results of that project implementation report. That project implementation report (Water Conservation Area 3 Decentralization Phase 1) will be prepared at a later date.

It is recognized that:

1. Only limited funding is provided by the Modified Water Deliveries Project for modifications to the Tamiami Trail;
2. Full restoration of natural flows to Northeast Shark River Slough (NESS) and Everglades National Park may only be accomplished through implementation of MWD Project features coupled with the restoration features of the CERP, once the seepage control features for the projected high water levels in NESS are fully mitigated;
3. Additional funding and restoration capability is authorized by CERP Decentralization (Phase 1) for Tamiami Trail, subject to the constraints of WRDA 2000, and future adjustments may occur to Tamiami Trail using CERP authority and that additional features may augment the MWD project features by

increasing the ecological connectivity between the Water Conservation Areas and the ENP, thereby restoring a more natural sheetflow regime to ENP.

4. Current funding levels identified for Tamiami Trail in CERP are limited.
5. Per the CERP Restudy, 9.1.7.2 “The purpose of these features {Water Conservation Area 3 Decompartmentalization and Sheetflow Enhancement (AA, QQ and SS)} is to reestablish the ecological and hydrological connection between Water Conservation Areas 3A, and 3B, and the Everglades National Park, and Big Cypress National Preserve.” 10.6.2.3 “This project is included {Water Conservation Area 3 Decompartmentalization and Sheetflow Phase-1} in the initial authorization for two reasons; (1) to provide immediate opportunities for enhanced sheetflow within Water Conservation Area 3 and between Water Conservation Area 3 and Everglades National Park and (2) to integrate with ongoing modifications that are being made in the detailed design and construction of the Modified Water Deliveries to Everglades National Park project. . . The Project Implementation Report will address the scope and method to be used for Miami Canal backfilling, conveyance improvements to the North New River Canal and, the bridging of Tamiami Trail, and L-29 modifications that are necessary to enable unrestricted flow from Water Conservation Area 3 into Everglades National Park. . . These project modifications will be coordinated with the existing Modified Water Deliveries to Everglades National Park Project . . . The benefits to the project from this feature are that restoring sheet flow will reduce the unnatural discontinuities in the landscape.”
6. Not intended to be the PIR to implement the Initial Project in the CERP WRDA or prejudge the results of the PIR;
7. Final CERP features for Tamiami Trail have not yet been identified the proposed modifications will be analyzed in a public forum consistent with NEPA;
8. Without prejudging the results of the project implementation report (PIR) required by WRDA 2000, the intent of this GRR/SEIS is to maximize the compatibility and avoid retrofitting costs of MWD project features with future CERP features;
9. The intent of this GRR/SIES is to have a clear design for MWD onto which a CERP design can follow;
10. Completion of the MWD project is a prerequisite to actions under CERP, and a delay in completion of MWD would delay implementation of CERP;

Section 5.0 – Formulation of Alternative Plans

11. Subject to approval of a Project Management Plan (PMP) for Decompartmentalization (Phase I) under CERP, two PIRs will be prepared for WCA 3 Decompartmentalization (Phase I). One PIR will study and identify the recommended alternative for Tamiami Trail under CERP. The second PIR will address all other Decompartmentalization (Phase I) components.

Planning efforts underway for the CERP WCA3 Decompartmentalization (Phase I) project for Tamiami Trail are scheduled to be completed prior to construction of modifications to Tamiami Trail under MWD.