Addendum
Tamiami Trail Modifications
Final Integrated Limited Reevaluation Report and Environmental Assessment
28 July 2008

INFORMATION FOR REVIEWERS: This addendum, which is hereby incorporated in the LRR/EA, clarifies points in the 2008 Tamiami Trail Modifications Final Integrated Limited Reevaluation Report (LRR) and Environmental Assessment (EA). The points of clarification address comments received from the Headquarters, U.S. Army Corps of Engineers (HQUSACE) and are arranged by reference to the section, paragraph, and page of the LRR. The Finding of No Significant Impact (FONSI) and recommendations in this report were signed at the District level on 20 June 2008.

Report Title: The referenced Limited Reevaluation Report and Environmental Assessment (LRR/EA) is a single integrated document. Information pertinent to NEPA, the National Environmental Policy Act, is found in the Executive Summary and Sections 1, 2, 3, 4, 5 and 6. All of these sections are marked with an asterisk. Public comments and agency coordination letters are reproduced in Appendix J.

Report: The total project cost will be reduced for previously anticipated relocations costs accordingly.

Report: The team prepared an Environmental Assessment rather than an Environmental Impact Statement (EIS) for several reasons as follows:

1. The alternatives considered in the LRR/EA were similar to the alternatives evaluated in the 2005 Revised General Reevaluation Report (RGRR) and Final Supplemental EIS (FSEIS). Alternative 3.2.2a is a similar plan, along the same exact route, including an eastern bridge in the same exact place, as analyzed and recommended in the 2005 RGRR/FSEIS and then adopted in a January 2006 Record of Decision (ROD).

2. The government team preparing the LRR determined that the probable impacts of the recommended plan (Alternative 3.2.2a) were going to be less than those already discussed in the 2005 RGRR/FSEIS under Alternative 14 (Alternative 4.2.3 of the LRR). The LRR recommended plan is very similar but smaller and cheaper than Alternative 14 from the 2005 RGRR/FSEIS. The western two miles of bridges were removed and stages in L-29 Canal were reduced and constrained to 8.5 feet National Geodetic Vertical Datum (NGVD).

3. The team referenced the 2005 RGRR/FSEIS, stating the tiered approach. Information from the 2005 RGRR/FSEIS was incorporated by reference generously in the LRR/EA text.

4. The USFWS and National Park Service (NPS) concurred with the determination that an EA was the appropriate NEPA vehicle, so long as text of the previous document was incorporated by reference. The 2005 RGRR/FSEIS was incorporated by reference. EPA did

not question our choice of an EA as a vehicle for the additional environmental information developed in the LRR/EA.

5. Most importantly, there are no impacts contemplated in the LRR/EA that were not described in the preceding RGRR/FSEIS.

6. The signed FONSI represents a decision that an EIS is not needed. It does not constitute a final agency decision to proceed with construction of the Recommended Plan.

FONSI, page ii: Table 1 in the FONSI is a summarization of the Alternative table – Table 4-2 in the main body of the LRR/EA.

FONSI, page iii: The Recommended Plan is Alternative 3.2.2a. The Recommended Plan, which is also the Preferred Alternative, is described in the second paragraph of the FONSI without its numerical label 3.2.2a.

FONSI, page iv: The excerpted conference language from the WRDA of 2007 as shown on page iv was taken from H.R. Conf. Rep. No. 280, 110TH Cong., 1ST Sess. (2007).

Executive Summary, page i: The costs presented in the main report (page i, Table 6-1, and page 7-1) and in the Cost Appendix C (Tables 5 and 7 and pages C-10 and C-11) present similar costs, but have different purposes. The costs shown in the executive summary are the fully funded cost estimate and the total first cost (excluding escalation).

LRR/EA, Section 1.1, page 1-5: The planning objectives for this LRR were set by the Water Resources Development Act (WRDA) of 2007 (Public Law 110-114) – Conference Report language (H.R. Conf. Rep. No. 280, 110TH Cong., 1ST Sess. (2007)); the cost constraint was set when the Congress rejected the cost of the previously recommended plan, Alternative 14 of the 2005 RGRR (Alternative 4.2.3 of this LRR). The immediate water flow target was 1,400 cubic feet per second (one in 10 year peak flow) as brought forward from the 1992 General Design Memorandum for Modified Water Deliveries to Everglades National Park; the ultimate target flow is 4,000 cubic feet per second. The revised cost estimate for Alternative 4.2.3 was $430 million. The Corps set $400 million dollars as the cost cap for screening purposes using cost as a constraint. Other objectives that became targets were: (a) reduction in flow velocity changes through the road; (b) increased potential connectivity; and (c) hydroperiod suitable for marsh/slough vegetation inside ENP.

LRR/EA, Section 4.4.3, page 4-28: The Plan Formulation Chapter explains how the targets were applied to all alternatives, beginning on page 4-28. Alternatives were screened in the following order: Average annual flow volumes (criterion was at least a 20% improvement over existing conditions); then velocity differences between the road and the marsh (again, a 20% improvement was the cutoff); then potential connectivity improvements (at least a 5% improvement); then marsh hydroperiod achievement (at least 20% improvement). Only after these target performance criteria were scored and alternatives that did not meet them eliminated, was the cost constraint applied.

LRR/EA, Section 4.5.2, page 4-40: Three value engineering (VE) studies were conducted on the Tamiami Trail project since 2002. A coordination review (Attachment 1) analyzed potential VE recommendations from these studies that may significantly reduce the cost to construct the project if applied. Eleven proposals from the VE studies were incorporated into the LRR/EA alternatives. Temporary construction rights-of-way, use of lime rock aggregate in place of overbuilt asphalt sections, and recycling asphalt were three proposals that provided significant cost reduction.

LRR/EA, Section 5.10, page 5-26: The Memorandum of Agreement for documentation of Tamiami Trail as an historic resource was signed on 3 July 2008. The agreement was signed by USACE, Jacksonville District; the Everglades National Park (ENP), National Park Service (NPS); and the Florida State Historic Preservation Office. Additionally the National Park Service is a cooperating agency for the Tamiami Trail Modifications project and the Integrated LRR/EA. A letter of support from the Department of the Interior (DOI) for Alternative 3.2.2a is contained within Appendix J.

LRR/EA, Section 6.3.1, Table 6-1, page 6-12: Table 6-1 shows the future funds needed to complete the project. In this table, the total construction cost is composed of the "First Cost" of $181.4M + the escalation to mid-point of construction of $6.7M for a total construction cost of $188.1M. This value is consistent with the construction costs shown in Appendix C both in the MII report (Table 5, page C-17) and in the Total Project Cost Summary (Table 7, page C-19) for the final selected alternative. The slight differences between these three numbers are due to rounding.

Since Table 6-1 is showing future funds needed the PED cost is shown as $0. Similarly, the Total Project Cost Summary shows Total Project Cost and includes the PED cost which has either been spent (sunk cost) or already obligated this FY (this obligation equals $1.4M for A-E task orders not yet expended). All other costs in the Total Project Cost Summary are future costs for which the District is seeking authority.

LRR/EA, Section 7.0, page 7-1, last paragraph: Prior to project implementation, the South Florida Water Management District, the non-federal sponsor, shall enter into a binding agreement **in the form of a PCA amendment**, between the Department of the Army and SFWMD for modification of the C&SF project, MWD to ENP project, **and the SFWMD agrees to perform the following items of local cooperation.**

LRR/EA, Section 7.0, page 7-1, paragraph a: OMRR&R of the project, or functional portion of the project, in a manner compatible with the project's authorized purposes and in accordance with applicable federal and state laws and regulations and any specific directions prescribed by the federal government **in the OMRR&R manual and any subsequent amendments thereto or other applicable guidance**.

LRR/EA, Section 7.0, page 7-1, paragraph b: Consistent with paragraph 94a of the 1992 General Design Memorandum, the local sponsor shall contribute 25 percent of operation and maintenance cost as established under Article II of the 1994 MWD PCA.

LRR/EA, Section 7.0, page 7-2, paragraph c: **Shall** not use federal funds to meet the non-federal sponsor's share of project OMRR&R costs unless the federal granting agency verifies in writing that the expenditure of such funds is **expressly** authorized.

LRR/EA, Section 7.0, page 7-2, paragraph d: The last sentence of paragraph d on page 7-2 was removed and replaced with the following: "Give the federal government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-federal sponsor, now or hereafter, owns or controls for access to the project for the purpose of inspecting, OMRR& R, or completing the project."

Annex B, USFWS Consultation: The amended Biological Opinion supporting Alternative 3.2.2a was signed by the U.S. Fish and Wildlife Service (USFWS) on 25 June 2008.

Appendix C: The alternatives' cost savings resulted from cost risk analysis. The risk analysis was fully coordinated with the District's VE officer.

Appendix C, pages C-10 and C-11: The costs shown in the appendix are based on the parametric model used in the alternative screening matrix. The Cost Engineering Appendix follows the timeline of this project starting at the current working estimate developed in the fall of 2006 that showed the significant cost increase from the RGRR. This estimate became the basis for a parametric estimating model that was used to determine costs for the alternative matrix and to select the tentatively selected plan (TSP) in the Draft LRR (which is the $226.6M cost shown on page C-11). The design and estimate for the TSP were refined between the Draft and Final LRR resulting in the final MII estimate shown on page C-17 and the final Total Project Cost Summary shown on page C-19.

Appendix C, Table 7, page C-19: The total project cost of $220,562,000 was certified during independent technical review as of 6 June 2008 by the Walla Walla District, Cost Engineering Center of Expertise. This estimate included the sunk cost estimate for planning, engineering, and design.

Appendix F, Section 4.1.a., page F-3: Add perpetual flowage easement to the requirements and the word "additional" so that the third sentence of paragraph a (continued from page F-2) reads as follows. "A perpetual road easement, perpetual flowage easement and a perpetual channel easement are required for approximately 0.44 acre and a temporary work area easement is required for an additional 0.44 acre for a period of 60 months."

Appendix F, Section 4.1.c., page F-3: Florida Department of Transportation (FDOT) will retain responsibility for all costs associated with the investigation, design, response, and remediation of any CERCLA regulated substances that may be found in association with the lands, easements relocations, and rights-of-way which it grants associated with this project. This requirement is in accordance with USACE policy and law for any landowner and will be stated in the relocation contract and all deeds.

Appendix F, Section 4.2.d., page F-5: Replace the second and third paragraphs of this section with "A determination will be made as to the required interest in land, if any, for project

operation for the Airboat Association of Florida tract. If easement estate is considered appropriate, the non-standard estate for flowage easement (permanent and occasional flooding) in paragraph 4.7.2 will be used.

Appendix F, Section 4.3.1, pages F-7 and F-8: Delete paragraphs after the first paragraph in this section.

Appendix F, Section 4.3.2, page F-8: the heading was changed to "DOI Responsibility".

Appendix F, Section 4.3.2, page F-8: Delete the first and last sentences of this section and add the following sentences at the beginning of the section. "The real estate cost estimate below is an estimate of the acquisition costs for DOI to acquire fee simple title to lands within the ENP boundary that lie south of the Tamiami Trail and which are necessary for operation of the Project. The estimate is included for informational purposes only and is not included in the total project costs for the Project as described in this report. The park is, under their General Management Plan, evaluating the future acquisition of real estate interests for the privately-owned parcels south of Tamiami Trail. At this time, it is not known what real estate interest the park will acquire; therefore, this office provided the most costly scenario of fee acquisition for the determination of costs."

Appendix F, Section 4.16.3, pages F-17 and F-18: Delete last paragraph on page F-17 and first two paragraphs of page F-18 and replace with the following text. "The AT&T and Bell South utilities located within the existing right-of-way of U.S. Highway 41 will not be relocated at Project expense since the permits allowing those utilities to utilize the road right-of-way can be revoked upon 30 days notice by the FDOT. Total project costs will be reduced accordingly."

Appendix F, Section 4.17, page F-18: Delete the last two sentences of the last paragraph of this section. Add the following sentence: "It is anticipated that the DOI will acquire the appropriate real estate interests for these sites from the private owners as these tracts are necessary for operation of the project and are situated south of the Tamiami Trail."

Appendix J: contains a tabulation of all public and agency comments and the agencies' response to each. This table is followed by scanned copies of all letters and memoranda received during the comment period including the letter of support from the DOI for Alternative 3.2.2a. Additional letters of support received are contained in Appendix K.

Tamiami Trail Modifications LRR
Value Engineering Coordination Review

Background: Three Value Engineering (VE) studies have been performed for the Tamiami Trail Modifications project with VE activities as established by ER 11-1-321. The three studies were prepared by the following parties with corresponding VE report dates, and project document (scopes of project) and date is shown below:

1. University of Florida, Civil Engineering Department, VE Report dated April 2002; GRR Final Addendum dated July 2001 (Existing Alignment and 3,000-Foot Bridge with Water Quality Treatment)
2. Jacksonville District In-house Team, VE Report dated July 2005; RGRR Pre-Final Design Level dated June 2005 (Four Mile Bridge Structure and Roadway Raise)
3. Department of Interior, National Park Service, by contract with VE Group, LLC and Leo A Daly Company, VE Report dated May 2007; 30% Design from Subsequent 2005 RGRR, March 2007 (Two Bridge structures 1-Mile and 2-Mile Hydraulic Openings with Road Raising within Project Limits).

Coordination Review: The coordination review analyzed potential VE recommendations by previous VE studies that may result in significantly reduced cost to construct the project if adapted. The analysis has been supported by project delivery team (PDT) members for scope, applicability and cost. The following activities were conducted:

1. Identified ideas with possibilities of significant savings for selected LRR alternatives. A working list of proposals was prepared and screened by PDT.

2. Selected potential VE proposals were applied to the current scope for LRR Alternatives 2.2.2a, 4.3.2 and 5.4.

3. Evaluated applicable implementation to capture savings while delivering a fully functional project and maintaining serviceability (i.e.; assuring savings will be realized and increased future cost do not offset savings through maintenance/repair/replacement and that project benefits are not reduced or lost).

4. Updated possible cost savings are presented in VE recommendations.

Summaries of VE Report Recommendations: VE proposals provided in VE reports will be prepared for evaluation:

1. The University of Florida VE report provided 3 VE recommendations with minor potential savings not found to be applicable to current alternatives. There is no possibility that savings will be realized.

2. The Jacksonville District VE report provided 6 VE recommendations with potential savings ranging to $36 million (based on 2005 design estimate base). Four of the six proposals were incorporated into the RGRR design. There is further potential application for two proposals for alternative bridge foundation system and further design optimization to project cost target.

3. The DOI/National Park Service VE report provided 14 alternatives with potential savings from selected combinations ranging to $131 million as selected recommended NPS. Seven proposals were incorporated into 22 of the 26 LRR Alternatives.

VE Recommendations: Alternatives 2.2.2a, 4.3.2 and 5.4 are identified as leading alternatives and significant cost containing VE proposals were developed for each one. Estimated savings are verified and updated to FY 2008 dollars.

Alternative 2.2.2a – Raise Road, Add 1-Mile Eastern Bridge. The current alternative estimate, scope of work and quantities of materials incorporates significant VE proposals including the southern shift in road alignment, optimization in bridge design including pollution abatement systems and reduced length of bridge to 1-mile. Proposals would also apply to Alternatives 1.4a, 3.2.2a, and 4.2.2a with reductions for item 2 as noted. Additional cost saving proposals may include the following items and associated cost savings:

1. ***Provide Temporary Construction Rights of Way (ROW) – Savings $3.7 million.*** The allowance of a 50-Foot wide temporary construction ROW would allow construction staging operations, delivery and materials storage to shorten the construction period for the bridge. It eliminates top-down construction limited to bridge sections being progressively completed to stage the construction of the next adjacent section. The 3 year construction period would be shortened. A 50-FT wide ROW would affect approximately 6 acres of adjacent land per mile of bridge. This issue becomes more acute as bridge lengths increase for other alternatives. Restoration of disturbed areas would be required for this method of construction.

2. ***Allow a Lime Rock Aggregate Fill Base and Eliminate the Overbuilt Asphalt Section – Savings $5 million.*** The issue is under coordination with the State Department of Transportation and will significant speed construction with the simpler base construction using the lower cost base material. Savings are not realized for Alternative 1.4a, and are reduced for Alternative 3.2.2a, featuring lower finished elevations for the road raise. Alternative 4.2.2a, having a higher elevation road raising, would have approximately $5.5 million in savings.

3. ***Recycle Asphalt – Savings $6.4 million.*** Incorporation of recycled asphalt in new paving projects is broadly implemented for road paving projects. Recycling milled asphalt top course and removed demolished road sections would yield savings related to new pavement quantity purchased by economizing material quantities. Early coordination has been made to identify an applied unit price break. Recycling as much as 80% of removed materials may be added with new asphalt mix – significant savings should be available. The 2-inch milled top course is in excess of 111,000 CY. As minimum cost avoidance, landfill tipping fees are eliminated with recycling. Possibly reduced handling and shorter hauling distances can also be coordinated.

Alternative 4.2.3 – Raise Road, Add 2-Mile Plus 1-Mile Bridges (RGRR). The current alternative estimate, scope of work and quantities of materials incorporates significant VE proposals including the southern shift in road alignment, optimization in bridge design including pollution abatement and reduced length of bridge to 3-miles from 4-miles. Proposals would also apply to Alternatives 1.4b, 2.2.2b, 2.2.3, 3.2.2b, 3.2.3 and 4.2.2b with reductions for items shown below. Additional cost saving proposals may include the following items and associated cost savings:

1. ***Provide Temporary Construction Rights of Way (ROW) – Savings $11.2 million.*** The allowance of a 50-Foot wide temporary construction ROW would allow construction staging operations, delivery and materials storage to shorten the construction period for the bridge. It eliminates top-down construction limited to bridge sections being progressively completed to stage the construction of the next adjacent section. The 5 year construction period would be shortened also reducing applied escalation. A 50-FT wide ROW would affect approximately 6 acres of adjacent land per mile of bridge, or 18 total acres. This issue becomes more acute as bridge lengths are increased. Restoration of disturbed areas would be required for this method of construction. The 11.2 million savings would be realized by Alternatives 2.2.3 and 3.2.3. Savings are reduced for Alternative 1.4b and 2.2.2b, 3.2.2b and 4.2.2b, featuring only one bridge ($3.7 million each).

2. ***Allow a Lime Rock Aggregate Fill Base and Eliminate the Overbuilt Asphalt Section – Savings $5 million.*** The issue is under coordination with the State Department of Transportation and will significant speed construction with the simpler base construction using the lower cost base material. Savings are not realized for Alternative 1.4b, and are reduced for Alternatives 2.2.2b, 2.2.3, 3.2.2b and 3.2.3 featuring lower finished elevations for the road raise.

3. ***Recycle Asphalt – Savings $6.4 million.*** Incorporation of recycled asphalt in new paving projects is broadly implemented for road paving projects. Recycling milled asphalt top course and removed demolished road sections would yield savings related to new pavement quantity purchased by economizing material quantities. Early coordination has been made to identify an applied unit price break. Recycling as much as 80% of removed materials may be added with new asphalt mix – significant savings should be realized. The 2-inch milled top course is in excess of 111,000 CY. As minimum cost avoidance, landfill tipping fees are

eliminated with recycling. Possible reduced handling and shorter hauling distances can also be coordinated.

4. ***Develop Drill Pier Foundation for Western 2-Mile Bridge – Savings $21.4 million.*** Existing foundation conditions have been found to be worst in the western bridges locations requiring a double battered precast concrete piles system if the current design is continued. Development of a 36-inch drilled pier foundation for the two western bridges will result in significant savings. Caution is noted for water quality permit issued and sensitivity with close proximity of the Park for the larger dimensioned drilled pier system. Proper development of the design should address these issues.

Alternative 5.4 – Current Alignment with 1-Mile Bridge and Relocation of L-67 Levee – Crown 13.00 Feet. The current alternative estimate, scope of work and quantities of materials incorporates significant VE proposals including the southern shift in road alignment, optimization in bridge design including pollution abatement systems and reduced length of bridge to 1-mile. No VE alternatives are identified for the relocation of L-67 levee. Possible savings are essentially the same as presented for Alternative 2.2.2a, also featuring a 1-mile bridge, but are modified by the bridge location to the west. Additional cost saving proposals may include the following items and associated cost savings:

1. ***Provide Temporary Construction Rights of Way (ROW) – Savings $3.7 million.*** The allowance of a 50-Foot wide temporary construction ROW would allow construction staging operations, delivery and materials storage to shorten the construction period for the bridge. It eliminates top-down construction limited to bridge sections being progressively completed to stage the construction of the next adjacent section. The 3.5 year construction period would be shortened. A 50-FT wide ROW would affect approximately 6 acres of adjacent land per mile of bridge. This issue becomes more acute as bridge lengths increase for other alternatives. Restoration of disturbed areas would be required for this method of construction.

2. ***Allow a Lime Rock Aggregate Fill Base and Eliminate the Overbuilt Asphalt Section – Savings $5 million.*** The issue is under coordination with the State Department of Transportation and will significant speed construction with the simpler base construction using the lower cost base material.

3. ***Recycle Asphalt – Savings $6.4 million.*** Incorporation of recycled asphalt in new paving projects is broadly implemented for road paving projects. Recycling milled asphalt top course and removed demolished road sections would yield savings related to new pavement quantity purchased by economizing material quantities. Early coordination has been made to identify an applied unit price break. Recycling as much as 80% of removed materials may be added with new asphalt mix – significant savings should be realized. The 2-inch milled top course is in excess of 111,000 CY. As minimum cost avoidance, landfill tipping fees are eliminated with recycling. Possibly reduced handling and shorter hauling distances can also be coordinated.

Possible total savings are identified for the presented LRR Alternatives ranging from $18 million to $44 million due to complexities and scope variations of the alternatives. These additional Value Engineering options have been identified by the PDT as being cost reduction alternatives that may be applied to the identified LRR Alternatives. The LRR Alternatives will be minimally exposed to risk or other disadvantages if the VE recommendations are accepted and implemented into the project design.

Several VE proposals were evaluated and determined not feasible for implementation. These items include the placement of pipes, culverts or precast arch structures in lieu of bridge structures. The numbers of these structures varied from 130 sets to over 1,200 sets of structures, and these supporting methods of construction posed serious problems with maintaining traffic service, and risk for roadway structural damage for placement of such large dimensioned drain systems and the large numbers of structures required. The LRR alternatives for culverts are reduced in structure dimensions and reduced in numbers to only 19 sets. While the alternatives pose the same problems – it is substantially reduced in numbers and is expected to reduce benefits too. Likewise, shifting the bridges to the roadway alignment to use the existing embankment is not presently deemed feasible without specific development. Management of traffic service, offsets from new construction features while the existing roadway is modified was not well developed or described with the VE proposal. No VE savings are identified for these items.

The PDT has also identified other cost reducing alternatives not related to the documented VE study recommendations. The coordination of both the VE savings and other cost reducing alternatives are equally developed for current LRR Alternatives; however, they can not be applied twice. These VE recommendations are presented with supporting narrative for associated Alternatives to assist in the plan alternative selection process.