APPENDIX C
COST ENGINEERING

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INTRODUCTION

The construction cost estimate for the 2005 Revised General Reevaluation Report (RGRR) Tamiami Trail modifications selected plan (called Alternative 14) has changed significantly over the last two years. The following table provides a list of cost estimates for the 2005 RGRR Alternative 14 plan, which is the Limited Reevaluation Report (LRR) Alternative 4.2.3, a 2-mile western bridge, one-mile eastern bridge and requisite road reinforcing to accommodate a 9.7 feet stage in the L-29 Canal.

Table 1: List of 2005 RGRR Alternative 14/LRR 4.2.3 Plan Estimates

Estimate	Date	Price Level	Construction Cost
2005 RGRR Alt 14	August 2005	FY-05	$125.1 Million[1]
Alt 14 @ 30 Percent Design	March 2007	FY-07	$277.1 Million[2]
Alt 14/LRR Alt 4.2.3	April 2008	FY-08	$304.6 Million[3]

Notes:
1. Includes a contingency of 25 percent.
2. Includes a contingency of 25 percent.
3. 90 percent confidence level estimate with escalation to mid-point of construction.

COST INCREASES FROM THE REVISED GENERAL REEVALUATION REPORT TO THE 30 PERCENT DESIGN

Increase in Construction Material Prices

Between the RGRR and 30 percent current working estimate (CWE), construction materials price increases added approximately $60 million to the construction cost. Other cost increases include maintenance of traffic and mobilization, both as a result of new survey information, as well as escalation through construction. The RGRR cost estimate did not include escalation through construction, however as the project approaches bid this cost must be incorporated. These other cost increases added approximately $25 million to the overall construction estimate. It is important to note there was no significant scope growth or quantity "busts" as the design progressed to this point, except for some increases in asphalt and embankment quantities as more accurate survey and geotechnical data was obtained.

Pricing in the RGRR was based on Florida Department of Transportation (FDOT) unit pricing, given the nature of this project and its similarity to other FDOT work. The unit prices were adjusted as necessary to account for market conditions. The adjusted unit prices were independently verified by the U.S. Army Corps of Engineers (USACE) to ensure accuracy and were validated against bid prices maintained by FDOT. FDOT staff both reviewed the preliminary design a presented in the RGRR and found it technically adequate and consistent with their experiences. In addition, the RGRR estimate was

compared with FDOT historic bid prices available in the summer of 2005 and was again found to be consistent.

The 30 percent CWE used actual construction material price quotes received from manufacturers, conversations with FDOT and construction contractors regarding construction methods and equipment. It is important to note that the 30 percent CWE unit prices were based on current estimates of the labor, equipment and materials (forward pricing). FDOT unit prices are based on historic data of actual contract unit prices. When recent FDOT experience is considered, these prices are more closely aligned. While there are different assumptions between the RGRR and 30 percent CWE (i.e., better survey data, current pricing data), no errors or omissions were found in the RGRR estimate. The increased cost estimate is primarily the result of extraordinary market forces that would have affected any construction project similarly.

Table 2: FDOT Historic Bid Data - Florida Statewide Weighted Average Prices

Material	Unit	FY 03/04	FY 04/05	Percent Change	FY 05/06	Percent Change	FY 06/07 (Jul-Feb)	Percent Change
Earthwork	CY	$4.73	$5.66	+19.7%	$7.93	+40.1%	$7.43	-6.31%
Asphalt	TN	$57.62	$68.49	+18.9%	$90.81	+32.6%	$103.58	+14.1%
Structural Concrete	CY	$546.32	$653.43	+19.6%	$892.89	+36.7%	$778.40	-12.8%
Structural Steel	LB	$1.51	$1.34	-11.3%	$1.68	+25.4%	$2.08	+23.8%
Reinforcing Steel	LB	$0.67	$0.86	+28.4%	$0.96	+11.6%	$0.95	-1.04%

Independent Technical Review and Department of the Interior Cost Estimate

An Independent Technical Review (ITR) of the 30 percent design CWE was conducted in December 2006 by the Cost Engineering Center of Expertise at Walla Walla District. Overall, the ITR team concluded that the 30 percent design cost estimate accurately captured the anticipated construction costs given the design and market conditions. In addition, an independent construction cost estimate of approximately $254 million was developed for the Tamiami Trail Modifications selected plan by a Department of the Interior (DOI) contractor (revised estimate dated 7 March 2007). This estimate was also based on the 30 percent design completed by the USACE. A technical analysis of the DOI cost estimate identified several differences in scope and engineering assumptions; however the overall conclusions were consistent with the USACE 30 percent CWE these differences were discussed and resolved between the DOI and the

USACE in January 2007. It is interesting to note that DOI indicated that the range of accuracy of their estimate is between $216 million and $330 million.

Risk and Uncertainty Considerations

The cost estimates for the RGRR and the 30 percent design did not include risk and uncertainty analyses. Jacksonville District recognized the need to perform a risk based analysis on the 30 percent CWE, however at the time it was decided to go forward with only the point estimate in order to begin resolving the problem of significant cost growth revealed by the 30 percent CWE. The ITR team also identified several areas of risk and uncertainty that needed to be included in the risk analysis. Combined, these risk elements had the potential to drive the actual construction costs significantly higher and these were evaluated and mitigated as much as possible.

THE LIMITED REEVALUATION REPORT COST ESTIMATE

Cost Model

As indicated, the 30 percent design CWE for the Tamiami Trail RGRR selected plan was based on the 30 percent design quantities and estimates on the labor, material (including price quotes from vendors and contractors), and equipment necessary to construct the project. The LRR cost estimate also used the 30 percent design quantities as well as additional information from the 60 percent design geotechnical report plus updated vendor price quotes. In addition, prices and unit costs were validated against FDOT historic bid data for accuracy.

The 2005 RGRR and 30 percent design cost estimates for the RGRR selected plan served as the starting point for the LRR cost estimate for the RGRR selected plan. There were very few changes in the scope of the project since the 30 percent design was complete. The final geotechnical report did provide updated foundation requirements for the eastern and western bridges. The western bridge would require more and longer piles than originally designed, which increased the cost (and schedule) for the project. Using the 30 percent design CWE as a basis, a parametric cost model was constructed to allow various alternatives to be evaluated against each other. This model was based on selecting and structuring cost elements that were common across all the alternatives, establishing unit prices and pro-rating quantities. The parametric model was calibrated to the 30 percent CWE to less than a two percent difference. In addition, this model was reviewed by the Independent Technical Review (ITR) team as part of the ITR for this report.

Point Estimate and Construction Contingency

The results of the parametric model yielded the "best", or point, estimate of expected construction cost that is able to be made given the limited information available on the variations of the base alternative, as well as new alternatives where the design information was significantly less than the 30 percent design level. Traditionally, a construction contingency would be added to this cost to cover the elements of the project that are yet to be designed as well as anticipated variations in quantities and pricing. Construction contingency is not used to anticipate new elements of work or significant variations in scope. Similarly, construction contingency is not used to anticipate market conditions or the impact of extreme events. If these conditions warrant consideration in the construction cost estimate, then they must be accounted for separately. Historically, contingency was assigned to a project based on the level of design in accordance with Engineering Manual (EM) 1110-2-1302. For this LRR, contingency was not applied in the traditional sense.

Risk and Uncertainty Analysis

In September 2007, the USACE mandated the use of risk and uncertainty analysis for major civil works projects in Engineering and Construction Bulletin (ECB) Number 2007-17, Application of Cost Risk Analysis Methods to Develop Contingencies for Civil Works Total Project Costs. The bulletin states that "A formal cost risk analysis shall be prepared for all decision documents requiring Congressional authorization for projects exceeding forty million dollars." Further, it states, "During the pre-construction engineering and design (PED) phase, a new cost risk analysis shall be conducted upon major changes in design and for each update in the Total Project Cost Estimate." The bulletin defines the cost risk analysis as "the process of identifying and measuring the cost and schedule impact of project uncertainties on the estimated total project cost. When considerable uncertainties are identified, cost risk analysis can establish the areas of high cost uncertainty and the probability that the estimated project cost would or would not be exceeded. This gives the management team an effective additional tool to assist in the decision-making process associated with project planning and design."

The bulletin does not provide specific guidance on how to conduct the cost risk analysis other than to direct the use of Crystal Ball software. Crystal Ball is a commercial, off-the-shelf software tool that performs risk analyses using Microsoft Excel as a base platform. This, however, is only the tool that facilitated the repetitive computations involved in a Monte Carlo type evaluation. The actual process of "risk analysis" for this project was based on the model in "Guide to Risk Assessment and Allocation for Highway Construction Management", Report No. Federal Highway Administration (FHWA)-Public Letter (PL)-06-032 produced by the FHWA. In summary the

three main steps were risk identification, quantitative risk analysis (computations) and risk mitigation. This can and should be an iterative process where risks are identified, quantified, mitigated (when possible), and re-evaluated for their effect on project costs or schedules. The process of quantitative risk analysis is not intended to be the goal, it is these results that should be used to focus the PDT's efforts to efficiently and effectively reduce either the cost/schedule, or reduce the probability of undesirable events occurring that would increase either dollars or duration. Keep in mind that reductions in dollars or duration are not the only goals. A successful risk analysis may actually show an increase in projected cost. The important thing here is to identify these items before they become bad surprises during construction.

Risk Elements for the Limited Reevaluation Report

The cost estimates developed for the LRR was guided by the risk analysis methodology directed in ECB 2007-17. Items that had the most impact on risk were identified as follows: Embankment Fill; Bridge Foundation; Transition Retaining Walls; Temporary Right of Way for Construction; Aggregate and Asphalt Materials; and Asphalt Disposal / Recycling.

The Lake Belt quarry issue has greatly increased the uncertainty associated with the availability and price for aggregate and fill material, as evidenced by the large variation in prices and the hesitancy of many vendors to provide quotes. Oil prices also add uncertainty impacting both fuel and asphalt. Finally, the constraints on right-of-way severely limit potential contractors and forcing them to use costly and inefficient construction methodologies. Since these methods are not fully developed, additional uncertainty is added. Based on these and other concerns, a cost-risk assessment was performed for all of the alternatives included in the LRR matrix using the cost model (based on the 60 percent design CWE for Alternative 14) as a basis for the estimate.

Major Estimate Assumptions

The following are the major assumptions for the cost model used to develop the costs in the LRR:

1. Embankment or aggregate materials would be available within a 15-mile radius, including disposal areas.
2. All fill and aggregates would be purchased from a commercial source.
3. Milled asphalt would have to be disposed in a landfill.
4. Retaining walls would be needed for the transition embankments.
5. Asphalt would have to be brought up uniformly across the road cross section in three to four inch lifts to allow for uninterrupted traffic flow.
6. Safety and access limitations would make top-down construction of the bridges the prudent method for construction.

7. No utility re-location costs were included.
8. All construction activities (roadway and bridge construction) occur during the same construction period, which is assumed to be three and a half years.

90 Percent Confidence Interval

The results of the risk and uncertainty analysis are presented as a frequency of occurrences, percentile results, and contribution to variance. Using this information and considering that the cost identified in this report represents the total authorization limit for this project, the 90 percent confidence level was selected as the appropriate level for the Total Construction Cost (TCC). This means that there is a 90 percent chance that the final cost for this project (at fiscal year [FY]-08 pricing levels) would be equal to **or less** than this cost. This is an extremely important point and is different than how USACE project costs have traditionally reported. In the past, USACE civil works projects generally include a cost estimate for authorization and subsequent appropriation from Congress. Congressional authorization allows for inflationary cost increases on the project not to exceed 20 percent (also called the 902 limit). For the Tamiami Trail Modifications project, though, this is not the case since the Modified Water Deliveries (MWD) project is not subject to 902 limits. As a result, the cost estimate must provide the total budget necessary to complete the project without having to request additional funding short of extreme events (i.e., hurricanes, acts of terrorism). The use of a 90 percent confidence level cost estimate, along with future escalation, is meant to ensure that this is the case.

Market Conditions and Escalation

Generally, civil works projects are escalated using annual indices in accordance with the Civil Works Construction Cost Index System (EM 1110-2-1304). The indices consider changes in labor, equipment and material costs and are essentially lagging indicators of inflation. The indices are used only for near-term escalation for two years or less. Beyond that timeframe it is necessary to evaluate market conditions. The 90 percent TCC estimates were escalated to the mid-point of construction, and then adjusted based on recent inflation trends in the construction industry and the anticipated construction schedule for each alternative. Since 2003, there has been unprecedented inflation in the construction industry due to rising oil prices, huge demand from overseas economies, natural disasters, and the continuing globalization of the construction industry. Since 2005, the Producer Price Index for construction inputs has increased at more than three times the rate of the Consumer Price Index (typically used to measure overall inflation). Leading construction economists predict this may be a new trend, not just an anomaly. Therefore, the adjustment rates used for the LRR alternatives (see ***Figure 1***) were greater than typical inflationary rates and provide a relatively conservative estimate for

potential cost increases into the future. For the Tamiami Trail Modification project, adjustment was based on historic increases from 2003 to 2007 (see ***Figure 2, Figure 3*** and ***Figure 4***) and industry forecasts from groups such as AGC (Association of General Contractors). It is very difficult to predict inflation even one year out let alone five to ten years.

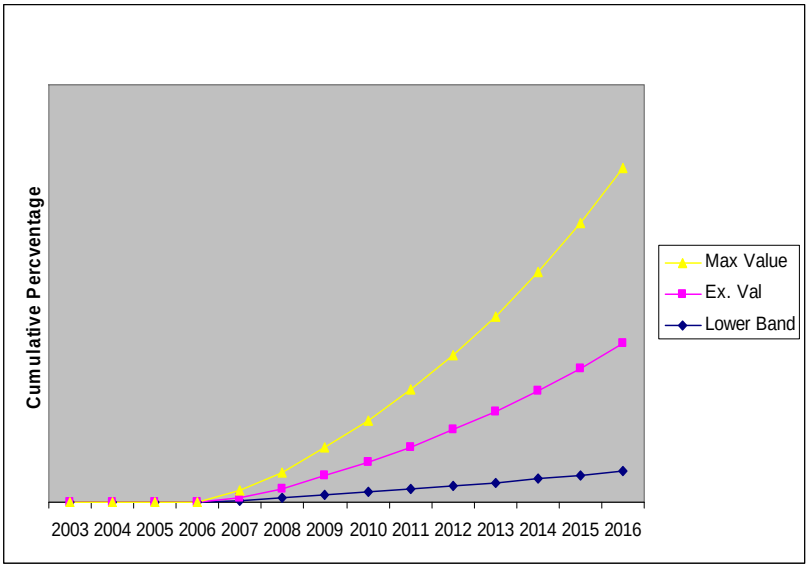

Figure 1: Market Conditions and Escalation

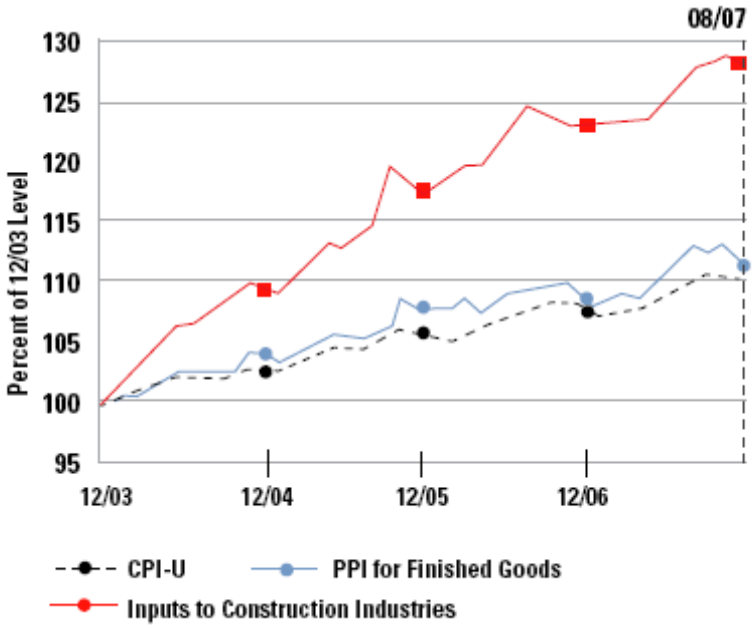

Figure 2: Cumulative Change in Consumer, Producer, and Construction Price Indices
(Source: Association of General Contractors Construction Inflation Alert–October 2007)

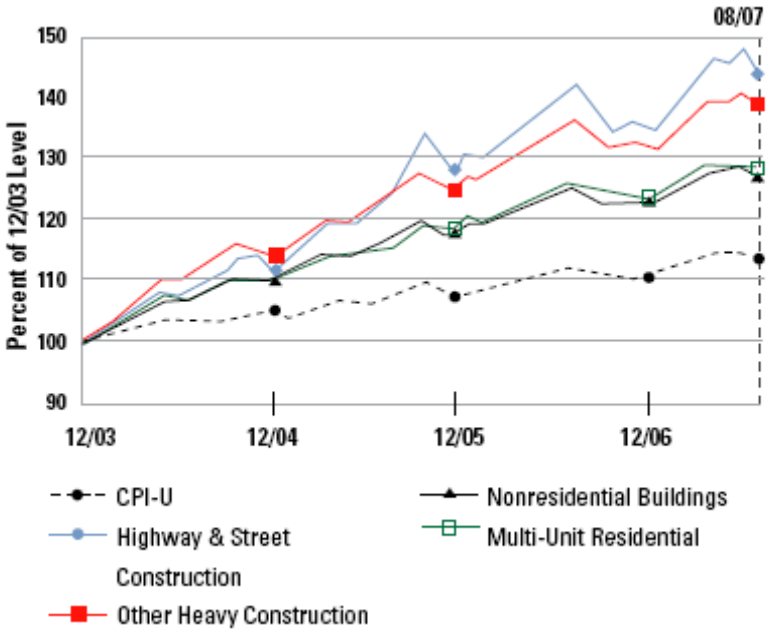

Figure 3: Cumulative Change in Producer Price Indices for Selected Construction Types

(Source: Association of General Contractors Construction Inflation Alert–October 2007)

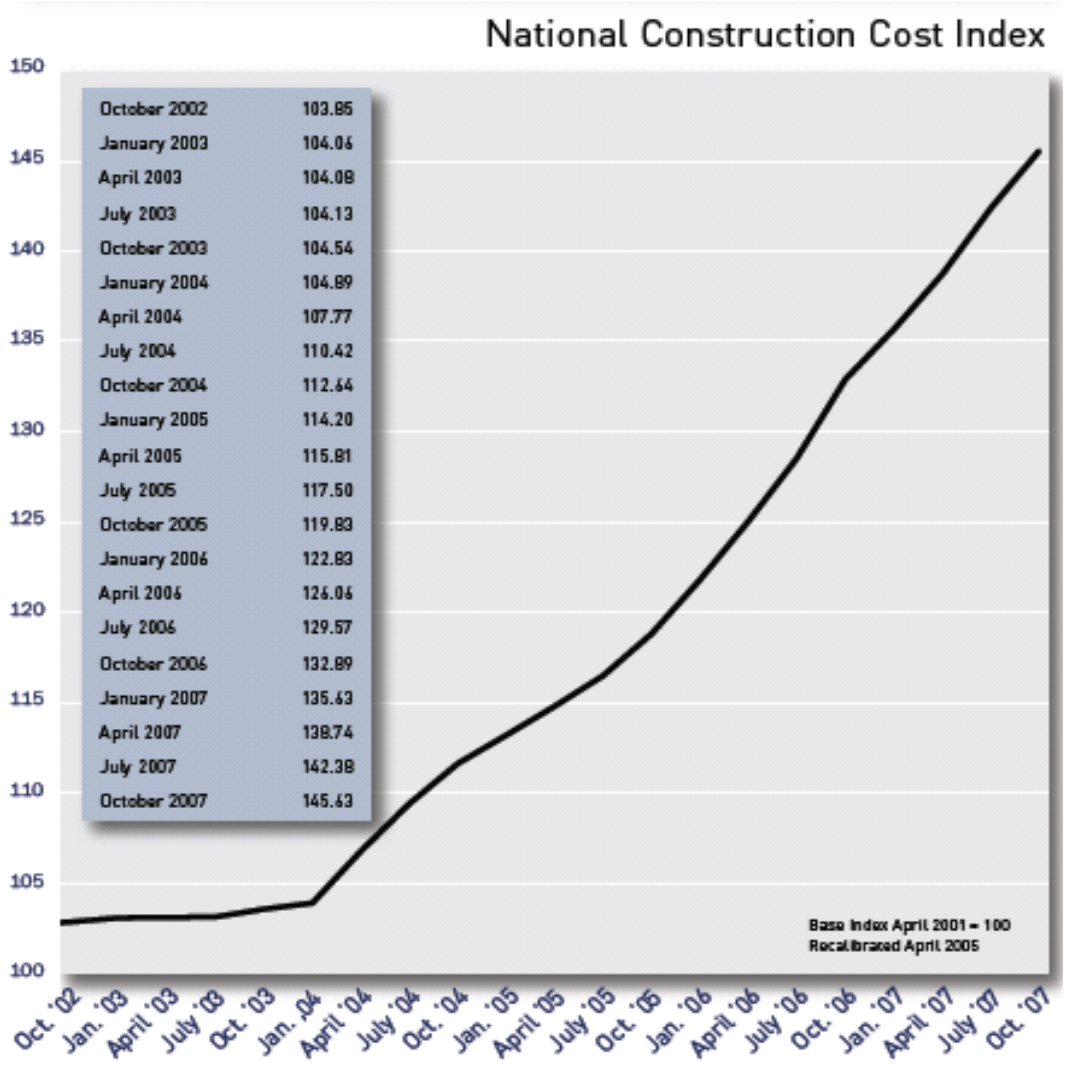

Figure 4: Change in the National Construction Cost Index from 2002–2007
(Source: Quarterly Construction Cost Report, 2007 Fourth Quarter Issue -Rider Levett Bucknall)

Cost Saving Options

In an effort to reduce construction costs and mitigate risk, the following cost saving options were evaluated for the final suite of alternatives. Not all cost saving alternatives are applicable to all alternatives. It is important to note that these alternatives were evaluated using the parametric model built to screen the array of alternatives and that only some of these options have been finalized by the approving agencies. The approximate cost savings shown are for Alternative 3.2.2a and are calculated at the 90 percent confidence limit:

- Reduce asphalt placement based on revised FDOT criteria received January 2008
  -- Savings: ~$20 million (FDOT)
- Additional Temporary RoW for Construction
  -- Savings: ~$10 million (DOI/Everglades National Park [ENP])
- Reduction in Low Chord Height for Bridge Inspection
  -- Savings: ~$7 million (FDOT)
- Obtain Fill Material from L-31(N) Spoil Mounds
  -- Savings: ~$6 million (South Florida Water Management District [SFWMD]/U.S. Army Corps of Engineers [USACE])
- Eliminate Spreader Swales from all Alternatives
  -- Savings: ~$9 million (USACE)

In addition to these options, there is the possibility that the scheduled contract award date can be moved up to October 2008. If this is done, an additional $30 million could be saved in future escalation. In addition, it was determined that the assumed level of supervision and administration (S&A) could be reduced from ten to eight and a half percent and still have sufficient funds available for adequate administration of the contract.

Cost Estimate for Tentatively Selected Plan
Based on the results of the parametric model, the cost estimate for the TSP, Alternative 3.2.2a, is $328.1 million (based on a Total Construction Cost @ 90 percent confidence of $198.8 million plus costs for real estate, future PED, EDC, S&A, and escalation). **This cost can be reduced if the cost saving options discussed above are approved and incorporated into the final plan.** Assuming that these changes are made, the cost of the TSP could be reduced to $226.6 million as follows:

Original Construction Cost @ 90% Confidence	$ 198,800,000
- Reduce Asphalt Placement w/ New FDOT Criteria	$ 12,200,000
- Obtain Additional Temporary Right-of-Way	$ 12,000,000
- Reduce Low Chord Elevation	$ 5,200,000
- Obtain Fill from L-31(N) Spoil Mounds	$ 5,900,000
- Remove Spreader Swales	$ 8,700,000
Revised Construction Cost @ 90% Confidence	**$ 154,800,000**

+	Real Estate	$ 5,900,000
+	Future PED	$ 1,500,000
+	S&A (reduced from 10% to 8.5%)	$ 13,200,000
+	EDC (2%)	$ 3,100,000
+	Escalation (based on October 2008 Award)	$ 48,100,000
	Total Cost of TSP if all Potential Cost Savings are Implemented	**$ 226,600,000**

Risk Analysis Results for the Tentatively Selected Plan

As discussed earlier, a risk analysis was done for all alternatives evaluated in the initial array. This analysis provides a distribution of potential costs based on the uncertainties associated with various components of the project. For the TSP shown in the initial array, the risk analysis produced the cost distribution shown in ***Table 3***.

The major risk factors that influence this alternative include the price of asphalt, suitable fill, pre-stressed concrete piling, AASHTO Beams, concrete for bridge decking, and pre-drilling of piles. Based on discussions with material suppliers and economic forecasts for the construction industry, it is apparent that the volatility in pricing for all of these items comes from either the cost of oil, the availability of fill and aggregate (depending upon the extent of a court order to halt mining in the Lake Belt area of South Florida), or a combination of both oil and fill.

When the cost-saving options are applied to the TSP, some of these risks can be mitigated by either reducing or eliminating the need for some of the more volatile materials. For the TSP estimate assuming incorporation of all cost saving options, the risk analysis produced the cost distribution shown in ***Table 4***.

The major risk factors that influence this alternative include the price of asphalt, pre-stressed concrete piling, AASHTO Beams, concrete for bridge decking, pre-drilling of piles, and asphalt disposal. Although many of the risk factors are the same for both alternatives, the required amount of purchased items such as asphalt and suitable fill has been reduced or eliminated. This reduces both the point estimate as well as the associated risk.

Table 3: Alternative 3.2.2a -- Cost-Risk Distribution

	Risk Analysis Results			
	0.1% Confidence	**50% Confidence**	**90% Confidence**	**99.9% Confidence**
Roadway Improvements **	$ 61,300,000	$ 66,900,000	$ 69,900,000	$ 79,200,000
Bridge - Transitions **	$ 14,000,000	$ 15,300,000	$ 16,000,000	$ 18,100,000
Bridge - Remove Old Rdwy **	$ 2,800,000	$ 3,100,000	$ 3,200,000	$ 3,600,000
Bridge - Structure w/ Abutments **	$ 64,700,000	$ 70,700,000	$ 73,800,000	$ 83,600,000
Other - MOT, Mob, Swales **	$ 31,500,000	$ 34,400,000	$ 35,900,000	$ 40,700,000
Total Construction Costs	**$ 174,300,000**	**$ 190,400,000**	**$ 198,800,000**	**$ 225,200,000**
Real Estate	$ 2,000,000	$ 2,000,000	$ 2,000,000	$ 2,000,000
Planning, Engineering & Design	$ 6,500,000	$ 6,500,000	$ 6,500,000	$ 6,500,000
Engineering During Construction (2%)	$ 3,500,000	$ 3,800,000	$ 4,000,000	$ 4,500,000
Supervision & Administration (10%)	$ 17,400,000	$ 19,000,000	$ 19,900,000	$ 22,500,000
Escalation (43.5% based on Oct 2009 Award)	$ 84,900,000	$ 92,700,000	$ 96,900,000	$ 109,700,000
Total Project Cost	**$ 288,600,000**	**$ 314,400,000**	**$ 328,100,000**	**$ 370,400,000**

** The Risk & Uncertainty analysis was calculated for the Total Construction Cost. The distribution of risk across project elements is approximate.

Table 4: Alternative 3.2.2a w/ Potential Cost Saving Options -- Cost-Risk Distribution

	Risk Analysis Results			
	0.1% Confidence	**50% Confidence**	**90% Confidence**	**99.9% Confidence**
Roadway Improvements **	$ 30,400,000	$ 32,200,000	$ 33,100,000	$ 35,800,000
Bridge - Transitions **	$ 12,500,000	$ 13,200,000	$ 13,600,000	$ 14,700,000
Bridge - Remove Old Rdwy **	$ 3,500,000	$ 3,700,000	$ 3,800,000	$ 4,100,000
Bridge - Structure w/ Abutments **	$ 68,400,000	$ 72,600,000	$ 74,500,000	$ 80,600,000
Other - MOT, Mob **	$ 27,400,000	$ 29,000,000	$ 29,800,000	$ 32,300,000
Total Construction Costs	**$ 142,200,000**	**$ 150,700,000**	**$ 154,800,000**	**$ 167,500,000**
Real Estate	$ 5,900,000	$ 5,900,000	$ 5,900,000	$ 5,900,000
Planning, Engineering & Design	$ 1,500,000	$ 1,500,000	$ 1,500,000	$ 1,500,000
Engineering During Construction (2%)	$ 2,800,000	$ 3,000,000	$ 3,100,000	$ 3,400,000
Supervision & Administration (8.5%)	$ 12,100,000	$ 12,800,000	$ 13,200,000	$ 14,200,000
Escalation (28.1% based on Oct 2008 Award)	$ 44,100,000	$ 46,800,000	$ 48,100,000	$ 52,000,000
Total Project Cost	**$ 208,600,000**	**$ 220,700,000**	**$ 226,600,000**	**$ 244,500,000**

** The Risk & Uncertainty analysis was calculated for the Total Construction Cost. The distribution of risk across project elements is approximate.

Final Cost Estimate for Tentatively Selected Plan

After selection of the TSP, a detailed cost estimate, based on the best available engineering and design information, was developed for the TSP. The development of this final construction cost estimate is in compliance with ER 1100-2-1302. For this estimate, the parametric model used to screen alternatives and select the TSP was abandoned and the final TSP estimate was developed using the MCACES 2nd Generation (MII) software, which is the USACE standard for construction cost estimates. The final TSP estimate is based on the 60% design for the 1-mile bridge and a conceptual design for the roadway raising based on the recent FDOT roadway criteria. In addition, updated price quotations were obtained for construction materials and the contingency level was based on the results of the risk and uncertainty analysis discussed below. The final MII construction cost for the TSP (Alternative 3.2.2a with cost saving options) is shown in ***Table 5***.

One change in this estimate from previous estimates is the handling of the escalation. During the Independent Technical Review of the draft report, guidance was received on how to delineate current market conditions from traditional escalation rates. Since the official escalation rate for future years is computed by OMB, escalation in excess of that rate should be treated as a risk/uncertainty and rolled into the contingency derived from the risk analysis. Therefore, while the total escalation rate did not change, it is divided into two parts in the MII estimate: the OMB escalation rate, based on an anticipated construction start date of December 2008, is shown in the column labeled "Escalation" and the cost associated with the risk that escalation will exceed the OMB rates (based on historic trends) is shown in the column labeled "MiscOwner". This splitting of escalation does not change the total project cost, but it does re-distribute the costs in the parametric model estimate shown in ***Tables 3 and 4***.

Final Risk Analysis for Tentatively Selected Plan

Once the final MII estimate was developed for the TSP, a final risk and uncertainty analysis was also performed to establish the final contingency of 40% based on the 90% confidence level. While this final analysis is similar to the risk and uncertainty analyses run on the earlier parametric estimates, discussed above, it should be noted that the risk analysis dealt primarily with construction uncertainties (construction methodologies, quantities, pricing) that could be identified and quantified by the entire Project Delivery Team. Risks associated with events beyond the current fiscal year, such as future increases in material prices, are accounted for in the escalation analysis. Furthermore, there are a number of external risks associated with this project outside the control of the project delivery team (i.e. approval of a Highway Easement Deed, acquisition

of real estate easements from Florida Power and Light, execution of a PCA, availability of funds, actual funding stream, etc.) that could impact the anticipated construction award date of September 2008 and, ultimately, the cost of the project. These risks have been identified and their potential impact has been clearly communicated throughout USACE, ASA(CW), and with all sponsors and stakeholders. However, the financial impacts associated with these external risks have not been quantified in the risk and uncertainty analysis or included in the costs presented.

The results of the Risk Analysis are presented in the cost distribution curve shown in ***Table 6***.

Total Project Cost Summary

Finally, a Total Project Cost Summary was prepared for this project based on the final MII estimate and risk assessment. This summary is presented in ***Table 7***.

Table 5: Final MII Construction Cost Estimate for Alternative 3.2.2a w/ Cost Saving Options

Print Date Mon 2 June 2008 | U.S. Army Corps of Engineers | Time 14:49:29
Eff. Date 5/24/2008 | Project : TTM LRR TSP - Total Project Cost
COE Standard Report Selections | Title Page

There are three MII files, and an excel spreadsheet for risk analysis, plus supporting spreadsheets for other quantities and quote info.

Pricing and other variances are in related spreadsheets and not incorporated into this file.

MII v2.3 used since my PC does not have sufficient RAM to run v3.0. (MIIv2.2 Report Script used.)

Notes to reviewers:

Escalation is based on OMB/CCWIS factors.

Misc. Owner Markup represents cost increases in excess of those in Risk Analysis due to unforseen market contidions and is based on 2003 - 2008 Historic Data & AGC Projections.

Construction window target is 3.5 years.

Total cost input provided to EN-C for RE, PE&D & S&A.

Estimated by	
Designed by	CESAJ
Prepared by	Anthony L. DiPiero, P.E., C.C.E.
Preparation Date	5/24/2008
Effective Date of Pricing	5/24/2008
Estimated Construction Time	Days

Labor ID: S_FL_5-08 EQ ID: EP05R03 | Currency in US dollars | TRACES MII Version 2.2

Table 5 (continued): Final MII Construction Cost Estimate for Alternative 3.2.2a w/ Cost Saving Options

Print Date Mon 2 June 2008 — U.S. Army Corps of Engineers — Time 14:49:29
Eff. Date 5/24/2008 — Project : TTM LRR TSP - Total Project Cost
COE Standard Report Selections — Project Cost Summary Report Page 1

Description	Quantity	UOM	ContractCost	Contingency	MiscOwner	Escalation	ProjectCost
Project Cost Summary Report			101,219,426.18	40,487,770.47	39,678,015.06	6,674,975.79	188,060,187.51
08 Roads, Railroads and Bridges	1.00	LS	101,219,426.18	40,487,770.47	39,678,015.06	6,674,975.79	188,060,187.51
			4,446,003.15				*8,260,431.99*
0002 Roadway	9.65	MI	42,903,930.40	17,161,572.16	16,818,340.72	2,829,325.43	79,713,168.71
			1,157,602.97				*2,150,763.34*
0002A MOT	9.65	MI	11,170,868.66	4,468,347.46	4,378,980.51	736,669.64	20,754,866.27
0002B Site Work	9.65	LS	2,835,311.63	1,134,124.65	1,111,442.16	186,976.33	5,267,854.76
			2,994,585.50				*5,563,776.96*
0002C Paving - Repave Only	9.65	MI	28,897,750.11	11,559,100.04	11,327,918.04	1,905,679.47	53,690,447.67
			7,167,049.68				*13,315,988.42*
0003 Transitions	2.00	EA	14,334,099.36	5,733,639.74	5,618,966.95	945,270.78	26,631,976.83
			27.92				*51.87*
Excavation	53,000.00	CY	1,479,511.24	591,804.49	579,968.40	97,567.26	2,748,851.39
			66.88				*124.26*
Fill	131,200.00	CY	8,775,020.49	3,510,008.20	3,439,808.03	578,673.99	16,303,510.72
			1,015.84				*1,887.37*
2B01521 Retaining Wall	3,000.00	LF	3,047,507.27	1,219,002.91	1,194,622.85	200,969.70	5,662,102.72
			66.88				*124.26*
2B01200 Limerock Base	3,850.00	CY	257,498.70	102,999.48	100,939.49	16,980.91	478,418.57
			66.88				*124.26*
160 Stabilizing	3,850.00	CY	257,498.70	102,999.48	100,939.49	16,980.91	478,418.57
			172.53				*320.55*
0334 1 Asphaltic Concrete	2,510.00	TON	433,043.60	173,217.44	169,753.09	28,557.32	804,571.46
			178.76				*332.13*
337 Asphaltic Concrete Friction Course	470.00	TON	84,019.37	33,607.75	32,935.59	5,540.71	156,103.41
			8,329.81				*15,476.33*
0004 1 mile Bridge Sta. 1245 to 1192	5,280.00	LF	43,981,396.42	17,592,558.57	17,240,707.40	2,900,379.58	81,715,041.97
0004A Site Work	1.00	LS	6,345,540.37	2,538,216.15	2,487,451.83	418,460.47	11,789,668.81
			2,679.24				*4,977.87*
0004B Substructure	5,280.00	LF	14,146,363.08	5,658,545.23	5,545,374.33	932,890.40	26,283,173.04
			3,699.33				*6,873.16*
0004C Superstructure	5,280.00	LF	19,532,488.46	7,812,995.38	7,656,735.48	1,288,081.67	36,290,300.99
			749.43				*1,392.41*
Bridge Drainage System	5,280.00	LF	3,957,004.51	1,582,801.80	1,551,145.77	260,947.04	7,351,899.12

Labor ID: S_FL_5-08 EQ ID: EP05R03 — Currency in US dollars — TRACES MII Version 2.2

Table 6: Risk Distribution for Alternative 3.2.2a w/ Cost Saving Options
(Based on Final MII Construction Cost Estimate)

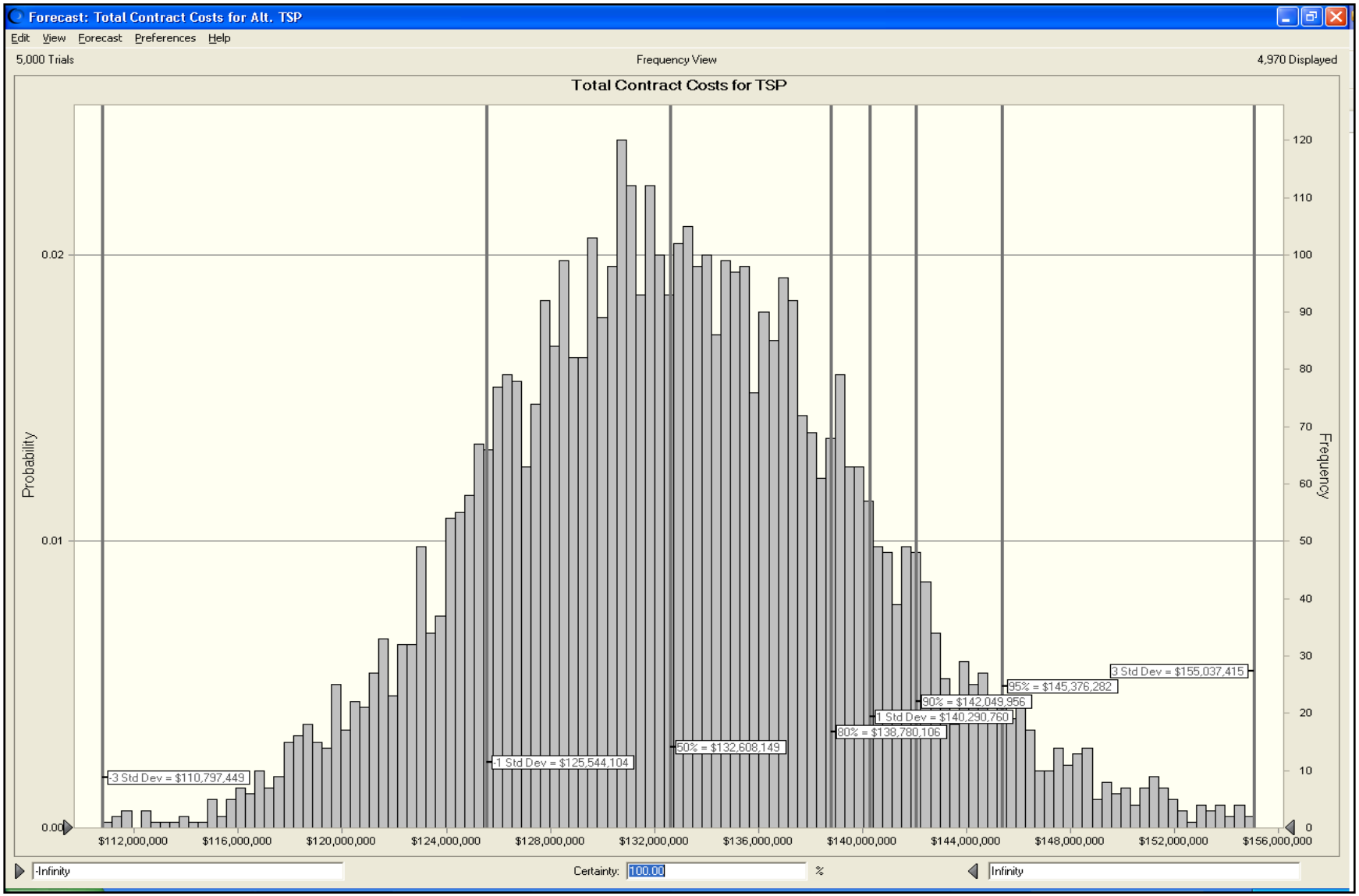

Table 7: Total Project Cost Summary

Feature Code	Description	Sunk Cost	Estimated Cost	Total Cost
01	**LANDS & DAMAGES**	**$ -**	**$ 5,900,000**	**$ 5,900,000**
	Airboat Assoc, FPL Easement, Admin Costs, etc.	*$ -*	*$ 5,900,000*	*$ 5,900,000*
02	**RELOCATIONS**	**$ -**	**$ -**	**$ -**
	None	$ -	$ -	$ -
08	**ROADS, RAILROADS, & BRIDGES**	**$ -**	**$ 188,062,000**	**$ 188,062,000**
	Roadway	*$ -*	*$ 79,714,000*	*$ 79,714,000*
	Transitions	*$ -*	*$ 26,632,000*	*$ 26,632,000*
	1-mile Bridge	*$ -*	*$ 81,716,000*	*$ 81,716,000*
30	**PLANNING, ENGINEERING, & DESIGN**	**$ 7,200,000**	**$ 1,400,000**	**$ 8,600,000**
	Limited Re-evaluation Report	*$ 1,300,000*	*$ 300,000*	*$ 1,600,000*
	Plans & Specifications	*$ 5,900,000*	*$ 1,100,000*	*$ 7,000,000*
31	**CONSTRUCTION MANAGEMENT**	**$ -**	**$ 18,000,000**	**$ 18,000,000**
	Supervision & Administration	*$ -*	*$ 14,900,000*	*$ 14,900,000*
	Engineering During Construction	*$ -*	*$ 3,100,000*	*$ 3,100,000*

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