Attachment B

Project Cost Estimates

for:

Ridge Road Extension Alternatives Analysis

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1.0 General

Pasco County has applied for a permit from the United States Army Corps of Engineers (USACE) to construct an extension of Ridge Road from its current terminus at DeCubellis/Moon Lake Road eastward to US 41. The project would construct a new four lane divided roadway known as the Ridge Road Extension (RRE). The project includes ramp connections to an existing overpass at the Suncoast Parkway. Florida's Turnpike Enterprise, a part of the Florida Department of Transportation (FDOT), is a co-applicant for this project.

The purpose of this document is to outline the process and assumptions that were used to develop the cost estimates for the alternatives to be analyzed for the Ridge Road Extension. The geographic limits for determination of costs is from Starkey Boulevard/Moon Lake Road on the west to US 41 on the east. The cost estimates include construction costs, engineering costs, right of way acquisition costs and mitigation costs.

The results of the cost estimate analysis are also presented herein.

2.0 Alternatives Included

Alternative 1 is no action to the current roadway network therefore it was not included below. The following is a list of the alternatives for which a cost estimate has been prepared and an abbreviated description.

Alt No.	Abbreviated Description
2	4-Lane RRE - 6D
3	4-Lane RRE - 6E
4	4-Lane RRE - 6F
5	4-Lane RRE - 6G
6	4-Lane RRE Elevated[1]
7	4-Lane RRE Partially Elevated[1]
8	SR 52 Add 4-Lanes
9	SR 54 Add 4-Lanes
10	4-Lane Tower Rd
11	SR 54 4-Lane Elevated
12	2-Lane Tower Rd & SR 54 Add 2-Lanes
13	SR 52 Add 2-Lanes & SR 54 Add 2-Lanes
14	2-Lane Tower Rd & SR 52 Add 2-Lanes
15	2-Lane RRE & 2-Lane Tower Rd
16	2-Lane RRE & SR 52 Add 2-Lanes
17	2-Lane RRE & SR 54 Add 2-Lanes

[1] Elevated or partially elevated only within limits of Serenova Preserve.

A more complete description of each of the alternatives, figures showing the conceptual alignments and typical cross sections are included in Attachment A of the Alternatives Analysis.

3.0 Construction Cost Estimates

3.1 Methodology

Construction cost estimates have been generated using costs developed by the FDOT Planning office. For roadways, these construction costs are based on the typical design characteristics of common road types for a centerline mile of roadway and average price estimates for pay items. The basis of the estimates is the FDOT's Long Range Estimate (LRE) system. The LRE System is a parametric estimating tool used for planning estimates prior to the development of design quantities.

Since construction costs vary across the state, the latest available cost information specific to District 7, which includes Pasco County, was utilized (June 2014). The tables of Roadway Cost Per Centerline Mile and Bridge Cost Per Square Foot are provided in Appendix B-1. These tables are available on FDOT's website at:

http://www.dot.state.fl.us/planning/policy/costs/costs-D7.pdf

The costs for roadway include roadway and drainage construction, maintenance of traffic, mobilization, and a contingency. Bridges, signalization work and other construction items such as Multi-Use Trails are not included and are added as applicable. For bridges, the construction costs are per square foot of deck area. Bridge costs do not include bridge approach (roadway) work and this cost is included in the roadway portion of the estimate. The design and construction engineering costs were included under the construction cost for each alternative.

3.2 Adjustment to FDOT Construction Costs

The FDOT District 7 roadway centerline mile costs include factors for MOT (Maintenance of Traffic) at 10%, Mobilization at 10%, Scope Contingency (project unknowns) at 25%, PE Design (Preliminary Engineering Design) at 15% and CEI (Construction Engineering and Inspection) at 15%. These costs have been used for alternatives that are on the state highway system.

For alternatives not on the state highway system the adjustments specified in the Pasco County's Traffic Impact Studies and Substandard Road Review Guidelines (TIS Guidelines), dated December 2007, have been made to the standard FDOT District 7 costs. The adjustments made to the FDOT costs are listed on page 14 of the TIS Guidelines, included in Appendix B-2. These adjustments include:

- Construction cost based on 85% of the cost shown in the "Subtotal" column
- Design cost should be 5% of the construction cost

- Construction Engineering & Inspection cost should be 3% of the construction cost
- Contingency cost shall be 10% of the construction cost

For alternatives on new alignment, there is no traffic to maintain during construction and the maintenance of traffic factor was not utilized.

4.0 Right of Way Acquisition Cost Estimates

4.1 Methodology

The Pasco County TIS Guidelines specifies that right of way costs from a location specific study be used when available. The FDOT's Guidance Document 2, Right of Way Cost Estimates, dated January 7, 2011, provides guidance concerning items and practices to be considered in the preparation of cost estimates for right of way in accordance with their Right of Way Manual. Section III.D of the Guidance Document suggests that each District should develop a worksheet to use for summarizing the cost estimate. The FDOT developed Right of Way Cost Estimate spreadsheet, included as Attachment 4, will be used to prepare location specific cost estimates for each alternative. As indicated on the Application and System Information sheet included with the spreadsheet, "Anyone can use or give copies of this application software to anyone else."

4.2 Implementation of the FDOT Spreadsheet

Development of input for right of way cost estimates will be from a "desk top" analysis of each alternative. Areas of acquisition shall be determined based on the location of existing right of way and property lines compared to proposed right of way lines associated with each alternative. Impacts to buildings or other site improvements that are discernible on aerial maps will be included as applicable. Land and structure values will be based data available from the Pasco County Property Appraiser web site. Default factors included in the spreadsheet for estimating professional and support costs will be used without modification. These include estimated costs such as appraisal and review fees, CPA fees, court reporter and witness fees, outside counsel fees, title search fees and in-house direct costs. Some features of the spreadsheet are not applicable, such as the Phase Contrast form and the Inflate table, and will not be implemented for any alternatives.

Based on F.S. 337.168 it is believed the completed spreadsheets will be confidential and not for public disclosure. A summary of estimated right of way costs for each alternative derived from the use of the spreadsheets that do not include reference to specific parcels or owners is included as in the alternatives study.

5.0 Mitigation Costs

Compensatory mitigation costs were estimated assuming that each acre of direct wetland impact would cost $150,000 to mitigate. The asking price for mitigation credits varies by type of wetland and by individual mitigation bank. Asking prices for credits in six mitigation banks within Pasco, Hillsborough and Polk Counties can range from $120,000 to $180,000, but final costs are negotiated and usually lower than the upper range. The $150,000 figure is simply an estimate to use for comparison purposes in the alternatives analysis.

6.0 Cost Estimate Results

6.1 Tower Road Adjustments

To account for developer commitments to provide right of way and/or construct portions of Tower Road within the next five years, all alternatives involving Tower Road, Alternatives 10, 12, 14 and 15, were developed using input from Pasco County that defined the developer responsibilities (see Appendix B-6). Table B-1 below shows a summary of the developer responsibilities for design, construction or right of way costs associated with the construction of 10 segments of Tower Road. Where the Table shows a "Yes" under Developer Responsibility, the associated cost of that item (design, right of way or construction) was not included in the cost estimate for that alternative.

Table B-1
Developer Responsibilities Used for Tower Road Cost Estimates

Segment	FROM	TO	Developer Responsibility			
			Length (Mi)	Design	ROW	Const.
1)	Starkey Blvd.	approx. 1/4 mile west of Trinity Ext	1.52	No	Yes	No
2)	West of Trinity Ext	1/2 mile East of Trinity Extension	0.75	Yes	Yes	Yes
3)	East of Trinity Ext	Eastern Boundary of Starkey	1.13	No	Yes	No
4)	Eastern Boundary of Starkey	Western Boundary of Behnke(Asturia)	0.66	No	No	No
5)	Western Boundary of Behnke(Asturia	Eastern Boundary of Behnke	1.07	No	Yes	No
6)	Eastern Boundary of Behnke	Suncoast	0.82	No	No	No
7)	Suncoast	Bexley Ranch Blvd	0.63	No	Yes	No
8)	Bexley Ranch Blvd	Future Balantrae connection	0.84	Yes	Yes	Yes (2 lane only)
9)	Future Balantrae connection	Eastern Boundary of Bexley Ranch	2.15	No	Yes	No
10)	Eastern Boundary of Bexley Ranch	US 41	2.3	No	No	No

6.2 Summary of Costs

Table B-2, below, summarizes the construction, right of way and mitigation costs for all 17 alternatives. As a measure of comparison the table shows the percentage of each alternative against Alternative 5, the lowest cost build alternative.

The construction cost estimate for each alternative is provided in Appendix B-4. As noted in Section 4.2 above, only a summary of estimated right of way costs for each alternative derived from the use of the FDOT spreadsheets, without reference to parcel or owner, is included in Appendix B-5. As noted in Section 5.0, mitigation costs are directly computed from the area of direct impacts in acres times $150,000.

Table B-2
Summary and Comparison of Costs

Alternative No.	Description	Construction Costs		ROW Costs	Mitigation Costs	Total Costs	Cost Comparison
		(Dollars)	% of Alternative 5	(Dollars)	(Dollars)	(Dollars)	% of Alternative 5
1	No Action	$0	0%	$0	$0	$0	0%
2	4-Lane RRE - 6D	$76,806,000	107%	$22,405,000	$3,240,000	$102,451,000	134%
3	4-Lane RRE - 6E	$75,713,000	105%	$511,000	$4,065,000	$80,289,000	105%
4	4-Lane RRE - 6F	$75,062,000	104%	$8,832,000	$4,080,000	$87,974,000	115%
5	4-Lane RRE - 6G	$71,966,000	100%	$508,000	$4,185,000	$76,659,000	100%
6	4-Lane RRE Elevated	$192,785,000	268%	$508,000	$3,270,000	$196,563,000	256%
7	4-Lane RRE Partially Elevated	$131,887,000	183%	$508,000	$3,270,000	$135,665,000	177%
8	SR 52 Add 4-Lanes	$129,463,000	180%	$7,169,000	$390,000	$137,022,000	179%
9	SR 54 Add 4-Lanes	$205,780,000	286%	$7,785,000	$225,000	$213,790,000	279%
10	4-Lane Tower Rd	$90,169,000	125%	$7,408,000	$3,330,000	$100,907,000	132%
11	SR 54 4-Lane Elevated	$1,365,268,000	1897%	$3,854,000	$30,000	$1,369,152,000	1786%
12	2-Lane Tower Rd SR 54 Add 2-Lanes	$186,414,000	259%	$8,615,000	$2,010,000	$197,039,000	257%
13	SR 52 Add 2-Lanes SR 54 Add 2-Lanes	$183,664,000	255%	$8,547,000	$210,000	$192,421,000	251%
14	2-Lane Tower Rd SR 52 Add 2-Lanes	$141,492,000	197%	$11,542,000	$2,145,000	$155,179,000	202%
15	2-Lane RRE 2-Lane Tower Rd	$111,060,000	154%	$6,164,000	$3,975,000	$121,199,000	158%
16	2-Lane RRE SR 52 Add 2-Lanes	$134,661,000	187%	$6,097,000	$2,010,000	$142,768,000	186%
17	2-Lane RRE SR 54 Add 2-Lanes	$174,524,000	243%	$2,868,000	$2,055,000	$179,447,000	234%

1. Elevated or partially elevated only within limits of Serenova preserve.

The total estimated costs range from a low of $76,659,000 for Alternative 5, to a high of $1,369,152,000 for Alternative 11. Alternative 5 also had the lowest estimated construction cost at $71,966,000.

The order of magnitude of Pasco County's annual expenditures for roadway design and construction costs is illustrated by the following summary of actual and budgeted design and construction expenditures as provided by Pasco County in March 2014 (see Appendix B-6).

Actual Expenditures		Budgeted Expenditures	
FY07/08	$19,445,126	FY13/14	$78,367,531[1]
FY08/09	$16,196,837	FY14/15	$23,701,144
FY09/10	$29,685,423	FY15/16	$38,134,683
FY10/11	$32,476,733	FY16/17	$24,482,069
FY11/12	$24,342,346	FY17/18	$10,372,538
FY12/13	$16,742,916		

[1] Included RRE

Based on the actual past and budgeted future expenditures by Pasco County for roadway design and construction it is evident that even the least expensive of the alternatives is well in excess of the County's typical annual expenditures.

The proposed Pasco County Capital Improvement Plan (CIP) for Fiscal Year (FY) 2015-2019 (see Appendix B-6) includes just over $21 million in funding for Ridge Road Extension Phase I in FY 16. The total budgeted amount for Road Improvements in FY 16 is $47.5 million showing that over 40% of the budgeted funding is allocated to just Ridge Road Extension Phase I. The total amounted budgeted for Road Improvements in FY 15 through FY 19 is $184 million (CIP page E-14). This means that the cost for five of the alternatives represent more than 100% of the entire County budget for road improvements over the next five years and ten of the alternatives represent more than 70% of the entire County budget for road improvements over the next five years. The CIP also shows there are many other new/unfunded transportation projects with over $300 million in estimated construction costs (CIP page E-3). The County's roadway improvement needs exceed the available funds for the foreseeable future.