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Executive Summary

Value Engineering During Project Development

The districts conducted 20 studies or 91% of the original number of studies scheduled for fiscal year 2015/2016. The original work plan had 22 studies scheduled for the year and the target was to complete 75% or 17 of the planned studies. Due to the dynamics of the department’s work program, 9 of the 22 scheduled studies (41%) were either dropped from the work plan altogether or rescheduled for the 2016/2017 fiscal year, while 7 of the conducted studies were added to the original work plan.

During this same period, the districts acted on 152 recommendations, approving 80 for a 53% adoption rate. Seventy-one of the approved recommendations resulted in $148.9 million in project cost avoidance/savings. The remaining 9 approved recommendations were value added recommendations that increased project performance, while adding $4.2 million to the project cost. Therefore, the total value of the approved recommendations, including the value added recommendations, produced $144.7 million in project cost avoidance/savings.

The approved recommendations resulted in a 6.24% project saved, 5.65% program saved and a Return on Investment (ROI) of $113 to $1. The percent project saved is calculated by dividing the value of all approved recommendations by the total costs of the projects studied, while the percent program saved is calculated by dividing the value of all approved recommendations by the average project cost of three fiscal year lettings. The ROI is calculated by dividing the value of all approved recommendations by the cost of administering the program.

There were 58 pending recommendations totaling $99.6 million in potential cost avoidance/savings at the end of the 2015/2016 fiscal year. This is a 23% decrease in the total number of pending recommendations and a 62% decrease in the amount of pending dollars from the 4th quarter of last year. Twenty-six of the 58 recommendations have been pending for more than 12 months, which is 45% of the total number of pending recommendations. Since the VE Study is a ‘snapshot’ of the project at some point in time of project development and projects are continuously moving forward in development, this is a concern. The longer recommendations are unresolved and in a pending status the less likely that they will be adopted because the development of the project has advanced.

Cost Savings Initiatives During Construction

Thirty-six Cost Savings Initiative (CSI)’s) Proposals were submitted during fiscal year 2015/2016. During this same period, the districts approved 35 proposals totaling more than $11.62 million in savings. The approved CSI proposals resulted in a 0.53% project saved and a 0.42% program saved. There are currently 2 pending CSI’s totaling $1.31 million in potential project savings.
**Program Organization**

**Mission:** Administer the Florida Department of Transportation Value Engineering and Cost Savings Initiative Programs, satisfying the needs of the stakeholders.

**Vision:** Value Engineering... providing an effective support function which maximizes project and process value for the transportation systems in the State of Florida.

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Value Engineering Overview

What is Value Engineering

Value Engineering (VE) is the formal application of a proven and effective tool used to improve the value of a project, product or service. VE strives to optimize the use of allocated funds without reducing the quality or performance. A multi-disciplined team is assembled and the six phases of the VE Job Plan (Information, Functional Analysis, Creative, Evaluation, Development and Presentation) are used to guide the team through the process.

The administration of the VE Program can be broken down into the following key processes.

<table>
<thead>
<tr>
<th>Pre-Study</th>
<th>Study</th>
<th>Post Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Selection</td>
<td>Conduct VE Study</td>
<td>Recommendation Resolution</td>
</tr>
<tr>
<td>Team Selection</td>
<td></td>
<td>Report Results</td>
</tr>
</tbody>
</table>
**Value Engineering Overview**

**Performance Measures**

The VE Program and the Cost Savings Initiative (CSI) Program are managed through the use of the Process Control Systems found in Appendix B. Each process has a set of Quality and In-Process measures that are used to evaluate the performance of the program. The Quality Measures for the overall VE program are defined below.

<table>
<thead>
<tr>
<th>VE Program</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quality Measure</strong></td>
<td><strong>Calculation</strong></td>
</tr>
<tr>
<td>Q1: Approved Cost Avoidance Recommendations</td>
<td>Sum of all approved cost avoidance/savings recommendations</td>
</tr>
<tr>
<td>Q2: Approved Value Added Recommendations</td>
<td>Sum of all approved value added recommendations</td>
</tr>
<tr>
<td>Q3: Adoption Rate</td>
<td># of Approved Recommendations / # of Proposed Recommendations</td>
</tr>
<tr>
<td>Q4: Percent Project Saved</td>
<td>Value of Approved Recommendations / Total Project Costs</td>
</tr>
<tr>
<td>Q5: Percent Program Saved</td>
<td>Value of Approved Recommendations / 3 Year Monthly Average Lettings</td>
</tr>
<tr>
<td>Q6: Return on Investment (only reported annually)</td>
<td>Value of Approved Recommendations / Total cost of VE Program</td>
</tr>
</tbody>
</table>
What is Cost Savings Initiative

The Cost Savings Initiative Program offers an opportunity for the contractor to propose cost savings ideas prior to work beginning and as work progresses on a project. Contractors can demonstrate their innovation and ingenuity by proposing ideas that contribute to the cost effectiveness of the project. The contractors are then rewarded for this ingenuity and innovation by sharing in any project savings generated from an approved Cost Savings Initiative (CSI) proposal.

Performance Measures

<table>
<thead>
<tr>
<th>CSI Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: Number of CSI’s</td>
</tr>
<tr>
<td>Q2: Approved Cost Savings</td>
</tr>
<tr>
<td>Q3: Percent Project Saved</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Q4: Percent Program Saved</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Fiscal Year 2015/2016
Value Engineering
Performance Measures
Adopted Recommendations

Q1: Annual Approved Cost Avoidance/Savings

<table>
<thead>
<tr>
<th></th>
<th>06/07</th>
<th>07/08</th>
<th>08/09</th>
<th>09/10</th>
<th>10/11</th>
<th>11/12</th>
<th>12/13</th>
<th>13/14</th>
<th>14/15</th>
<th>15/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved $$$</td>
<td>$309.2</td>
<td>$515.1</td>
<td>$310.4</td>
<td>$192.4</td>
<td>$158.0</td>
<td>$140.7</td>
<td>$182.2</td>
<td>$140.9</td>
<td>$351.6</td>
<td>$148.9</td>
</tr>
</tbody>
</table>

Total Approved Recommendations: $2.5 billion

Q1: Cost Avoidance Recommendations

Annual Report FY 2015/2016

Approved Recommendations: $148.9 million

<table>
<thead>
<tr>
<th>District 1</th>
<th>District 2</th>
<th>District 3</th>
<th>District 4</th>
<th>District 5</th>
<th>District 6</th>
<th>District 7</th>
<th>Turnpike</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ Recommended</td>
<td>$12,662,522</td>
<td>$109,183,541</td>
<td>$13,868,361</td>
<td>$29,408,362</td>
<td>$41,113,447</td>
<td>$134,327,708</td>
<td>$68,086,127</td>
</tr>
<tr>
<td>$ Approved</td>
<td>$11,353,543</td>
<td>$17,717,802</td>
<td>$13,839,246</td>
<td>$11,287,541</td>
<td>$14,174,427</td>
<td>$17,322,142</td>
<td>$63,246,767</td>
</tr>
</tbody>
</table>
Adopted Recommendations

Q2: Annual Approved Value Added Recommendations

Approved Value Added: $310.1 million

Q1: Cost Avoidance Recommendations

Annual Report FY 2015/2016

Approved Value Added: $4.2 million
Adoption Rates

Q3: Annual Adoption Rate

Target Range: 40%-60%

Fiscal Year

06/07 07/08 08/09 09/10 10/11 11/12 12/13 13/14 14/15 15/16

District 1 District 2 District 3 District 4 District 5 District 6 District 7 Turnpike

# Recommended
19 30 5 20 33 17 28 0

# Approved
16 9 3 9 16 4 23 0

Q3: Adopted Recommendations
Annual Report FY 2015/2016

Target Range: 40%-60%

Number

District 1 District 2 District 3 District 4 District 5 District 6 District 7 Turnpike

84% 30% 60% 45% 48% 24% 82% 0%
Percent Project Saved

Q4: Annual Percent Project Saved

Target Range: 5%-10%
National Average: 5%

Q4: Percent Project Saved
Annual Report Fiscal Year 2015/2016

Target Range: 5%-10%
The intent of the Percent Program Saved measure is to compare the cost avoidance/savings to the overall work program. The measure is calculated by dividing the three year average monthly lettings into the overall cost avoidance/savings.
Return on Investment

Q6: Annual Return on Investment

FDOT Average $145 to $1
FHWA Average $138 to $1

<table>
<thead>
<tr>
<th>Year</th>
<th>FDOT</th>
<th>FHWA Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 06/07</td>
<td>$145</td>
<td>$157</td>
</tr>
<tr>
<td>FY 07/08</td>
<td>$216</td>
<td>$205</td>
</tr>
<tr>
<td>FY 08/09</td>
<td>$156</td>
<td>$99</td>
</tr>
<tr>
<td>FY 09/10</td>
<td>$196</td>
<td>$146</td>
</tr>
<tr>
<td>FY 10/11</td>
<td>$138</td>
<td>$80</td>
</tr>
<tr>
<td>FY 11/12</td>
<td>$111</td>
<td>$96</td>
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<tr>
<td>FY 12/13</td>
<td>$118</td>
<td>$118</td>
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<tr>
<td>FY 13/14</td>
<td>$103</td>
<td>$200</td>
</tr>
<tr>
<td>FY 14/15</td>
<td>$150</td>
<td></td>
</tr>
<tr>
<td>FY 15/16</td>
<td>$113</td>
<td></td>
</tr>
</tbody>
</table>
Work Plan Completion

P1: VE Studies Scheduled vs. Completed
Annual Report FY 2015/2016

Target: Complete 75% of YTD Schedule

<table>
<thead>
<tr>
<th></th>
<th>1st Qtr</th>
<th>2nd Qtr</th>
<th>3rd Qtr</th>
<th>4th Qtr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled</td>
<td>5</td>
<td>10</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>Conducted</td>
<td>3</td>
<td>6</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Target (75%)</td>
<td>4</td>
<td>8</td>
<td>14</td>
<td>17</td>
</tr>
</tbody>
</table>

Number of Studies

* District 7 or Turnpike Enterprise did not submit a Work Plan as required. District 6 did not have any planned studies.
Pending Recommendations

**P2: Annual # Pending Recommendations**

Annual Report FY 2015/2016

<table>
<thead>
<tr>
<th>06/07</th>
<th>07/08</th>
<th>08/09</th>
<th>09/10</th>
<th>10/11</th>
<th>11/12</th>
<th>12/13</th>
<th>13/14</th>
<th>14/15</th>
<th>15/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>66</td>
<td>42</td>
<td>17</td>
<td>21</td>
<td>9</td>
<td>31</td>
<td>14</td>
<td>0</td>
<td>35</td>
<td>31</td>
</tr>
<tr>
<td>32</td>
<td>47</td>
<td>30</td>
<td>35</td>
<td>54</td>
<td>40</td>
<td>32</td>
<td>46</td>
<td>40</td>
<td>27</td>
</tr>
<tr>
<td>98</td>
<td>89</td>
<td>47</td>
<td>56</td>
<td>63</td>
<td>71</td>
<td>46</td>
<td>46</td>
<td>75</td>
<td>58</td>
</tr>
</tbody>
</table>

**District 1**

0 - 3 Months: 0
4 - 6 Months: 0
7 - 12 Months: 0
> 12 Months: 1

**District 2**

0 - 3 Months: 2
4 - 6 Months: 0
7 - 12 Months: 0
> 12 Months: 4

**District 3**

0 - 3 Months: 0
4 - 6 Months: 0
7 - 12 Months: 1
> 12 Months: 0

**District 4**

0 - 3 Months: 10
4 - 6 Months: 6
7 - 12 Months: 0
> 12 Months: 0

**District 5**

0 - 3 Months: 0
4 - 6 Months: 0
7 - 12 Months: 1
> 12 Months: 0

**District 6**

0 - 3 Months: 0
4 - 6 Months: 0
7 - 12 Months: 4
> 12 Months: 0

**District 7**

0 - 3 Months: 0
4 - 6 Months: 0
7 - 12 Months: 0
> 12 Months: 16

**Turnpike**

0 - 3 Months: 0
4 - 6 Months: 0
7 - 12 Months: 0
> 12 Months: 0

Pending Recommendations: 58
Fiscal Year 2015/2016
Cost Savings Initiative
Performance Measures
Prior to fiscal year 2010/2011, Cost savings Initiatives (CSI) were formerly referred to as Value Engineering Change Proposals (VECP’s).
CSI Approved Savings

Q2: Cumulative CSI Construction Cost Savings

Approved Savings: $11.62 million

Fiscal Year

District 1  District 2  District 3  District 4  District 5  District 6  District 7  Turnpike
Acted Upon $1,540,093 $369,884 $5,922,534 $2,560,261 $1,191,742 $0 $34,920 $0
Approved $1,540,093 $369,884 $5,922,534 $2,560,261 $1,191,742 $0 $34,920 $0

Prior to fiscal year 2010/2011, Cost savings Initiatives (CSI) were formerly referred to as Value Engineering
Prior to fiscal year 2010/2011, Cost savings Initiatives (CSI) were formerly referred to as Value Engineering Change Proposals (VECP’s).

* Prior to fiscal year 2010/2011, Cost savings Initiatives (CSI) were formerly referred to as Value Engineering Change Proposals (VECP’s).
The Percent Program Saved is a new measure. The intent is to compare the cost avoidance/savings to the overall work program. The measure is calculated by dividing the three year average monthly lettings into the overall cost avoidance/savings.

Q4: CSI Percent Program Saved
Annual Report Fiscal Year 2015/2016

Q5: CSI Percent Program Saved
Annual Report Fiscal Year 2015/2016
Appendix
Process Control Systems
Process Control System

Process Name: Value Engineering Project Selection
Product/Service: Develop a Value Engineering Work Plan by July 1 of each fiscal year.
Primary Customers: District Management, State Value Engineer.
Partners: FHWA

Valid Requirement(s): All projects with the most potential for improvement have a VE Analysis.
Regulator's Valid Requirement(s): All projects on the NHS System with estimated total costs $25 million have a VE analysis.

Flow Chart

Step / Person

District Value Engineer

District Management

NEED
- Develop VE Work Plan
- Review projects in production pipeline
- Meet Federal requirements?
- Project a good candidate?
- Project costs $25 million or less?
- Review project
- VE window in this fiscal year?
- Add project to Candidate List
- All projects been reviewed?

REVIEW
- Draft Work Plan
- Submit work plan to District Value Engineer
- Is work plan acceptable?
- Approve work plan and return to DV

DRAFT
- Compile plans and publish on Share/Point

APPROVAL
- District Value Engineer
- Execute work plan

EXECUTE

Flow Chart - Abbreviations
- C - Compliance
- NC - Noncompliant
- BP - Best Practice

Date: ____________________________
Process Owner: District Value Engineer
Rev #: 1.6
Rev Date: 3/2016