Value Engineering
Annual Report
FY 2012/2013
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Executive Summary

Value Engineering During Project Development

The districts conducted 22 studies or 67% of the original number of studies scheduled for fiscal year 2012/2013. The original work plan had 33 studies scheduled for the year and the target was to complete 75% or 25 of the planned studies. Due to the dynamics of the department’s work program, 18 of the 33 scheduled studies (55%) were either dropped from the work plan altogether or rescheduled for the 2012/2013 fiscal year, while seven of the conducted studies were added to the original work plan.

During this same period, the districts acted on 144 recommendations, approving 71 for a 49% adoption rate. Fifty-eight of the approved recommendations resulted in $182.2 million in project cost avoidance/savings. The remaining 13 approved recommendations were value added recommendations that increased project performance, while adding $29.6 million to the project cost. Therefore, the total value of the approved recommendations, including the value added recommendations, produced $152.6 million in project cost avoidance/savings.

The approved recommendations resulted in a 4.65% project saved, 10.58% program saved and a Return on Investment (ROI) of $118 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 46 pending recommendations totaling $177.9 million in potential cost avoidance/savings at the end of the 2012/2013 fiscal year. This is a 35% decrease in the total number of pending recommendations from the end of the 2011/2012 fiscal year. Thirty-six of the 46 recommendations have been pending for more than 12 months, which is 78% 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 20012/20013. During this same period, the districts acted on 34 proposals totaling more than $5.89 million and approving 21 of the proposals. The implemented savings from the 21 approved CSI’s was $5.11 million. The approved CSI proposals resulted in a 0.81% project saved and a 0.30% program saved. There are currently seven pending CSI’s totaling $3.17 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.
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.

VE Job Plan

- **Pre-Study**
  - Project Selection
  - Team Selection

- **VE Study**
  - Information Phase
  - Functional Analysis
  - Creative Phase
  - Evaluation
  - Development
  - Presentation

- **Post-Study**
  - Recommendation Resolution
  - Report Results

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

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>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: Number of CSI’s</td>
<td>Sum of all CSI’s</td>
</tr>
<tr>
<td>Q2: Approved Cost Savings</td>
<td>Sum of all approved CSI savings</td>
</tr>
<tr>
<td>Q3: Percent Project Saved</td>
<td>Value of Approved Proposals Total Project Costs</td>
</tr>
<tr>
<td>Q4: Percent Program Saved</td>
<td>Value of Approved Recommendations 3 Year Monthly Average Lettings</td>
</tr>
</tbody>
</table>
Fiscal Year 2012/2013
Value Engineering
Performance Measures
Q1: Annual Approved Cost Avoidance/Savings

Total Approved Recommendations: $2.5 billion

Q1: Cost Avoidance Recommendations
Annual Report FY 2012/2013

Approved Recommendations: $182.2 million
Adopted Recommendations

A Value Added Recommendation significantly increases the performance of a function while also increasing the cost.

* Approved Value Added: $21.5 million

* Approved Value Added: $29.6 million

* A Value Added Recommendation significantly increases the performance of a function while also increasing the cost.
Adoption Rates

Q3: Annual Adoption Rate

Target Range: 40% - 60%

Fiscal Year

03/04 04/05 05/06 06/07 07/08 08/09 09/10 10/11 11/12 12/13

Q3: Adopted Recommendations
Annual Report FY 2012/2013

Target Range: 40% - 60%

<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>14</td>
<td>8</td>
<td>18</td>
<td>25</td>
<td>29</td>
<td>46</td>
<td>4</td>
</tr>
<tr>
<td># Approved</td>
<td>8</td>
<td>1</td>
<td>16</td>
<td>11</td>
<td>15</td>
<td>16</td>
<td>4</td>
</tr>
</tbody>
</table>
The Percent Program Saved is a new measure introduced last year. 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. Line charts showing trends will be developed in future years as data becomes available.
Q5: Return on Investment
Annual Report Fiscal Year 2012/2013

Return on Investment
$118 to $1

Program Costs
Adopted Recommendations

Q5: Annual Return on Investment

FDOT Average $150 to $1
FHWA Average $159 to $1

* FHWA data for fiscal year 2012/2013 was not available at time of publication.
Work Plan Completion

### P1: VE Studies Scheduled vs. Completed

#### Annual Report FY 2012/2013

**Target:** Complete 75% of YTD Schedule

<table>
<thead>
<tr>
<th>District</th>
<th># Scheduled</th>
<th># Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>District 1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>District 2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>District 3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>District 4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>District 5</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>District 6</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>District 7</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Turnpike</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### P1: VE Studies Scheduled vs. Completed

#### Annual Report FY 2012/2013

**Target:** Complete 75% of YTD Schedule

<table>
<thead>
<tr>
<th>Quarter</th>
<th># Scheduled</th>
<th># Completed</th>
<th>% of Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Qtr</td>
<td>13</td>
<td>4</td>
<td>31%</td>
</tr>
<tr>
<td>2nd Qtr</td>
<td>20</td>
<td>11</td>
<td>55%</td>
</tr>
<tr>
<td>3rd Qtr</td>
<td>28</td>
<td>17</td>
<td>61%</td>
</tr>
<tr>
<td>4th Qtr</td>
<td>33</td>
<td>22</td>
<td>67%</td>
</tr>
</tbody>
</table>

### Table

<table>
<thead>
<tr>
<th>District</th>
<th># Scheduled</th>
<th># Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>District 1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>District 2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>District 3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>District 4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>District 5</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>District 6</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>District 7</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Turnpike</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Pending Recommendations

P4: Annual # Pending Recommendations
Annual Report FY 2012/2013

<table>
<thead>
<tr>
<th>Time Period</th>
<th>0 - 6 Months</th>
<th>&gt; 7 Months</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>03/04</td>
<td>23</td>
<td>28</td>
<td>51</td>
</tr>
<tr>
<td>04/05</td>
<td>10</td>
<td>18</td>
<td>28</td>
</tr>
<tr>
<td>05/06</td>
<td>14</td>
<td>34</td>
<td>48</td>
</tr>
<tr>
<td>06/07</td>
<td>66</td>
<td>32</td>
<td>98</td>
</tr>
<tr>
<td>07/08</td>
<td>42</td>
<td>47</td>
<td>89</td>
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<tr>
<td>08/09</td>
<td>17</td>
<td>30</td>
<td>47</td>
</tr>
<tr>
<td>09/10</td>
<td>21</td>
<td>35</td>
<td>56</td>
</tr>
<tr>
<td>10/11</td>
<td>9</td>
<td>54</td>
<td>63</td>
</tr>
<tr>
<td>11/12</td>
<td>31</td>
<td>40</td>
<td>71</td>
</tr>
<tr>
<td>12/13</td>
<td>14</td>
<td>32</td>
<td>46</td>
</tr>
</tbody>
</table>

P4: # Pending Recommendations
Annual Quarter Report FY 2012/2013

Pending Recommendations: 46

<table>
<thead>
<tr>
<th>District</th>
<th>0 - 3 Months</th>
<th>4 - 6 Months</th>
<th>7 - 12 Months</th>
<th>&gt; 12 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>District 1</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>District 2</td>
<td>0</td>
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<td>0</td>
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<tr>
<td>District 3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>District 4</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>District 5</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>District 6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>District 7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>Turnpike</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Fiscal Year 2012/2013
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).

Number Approved CSI's: 157

Number Approved CSI's: 22
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 (VECP) Construction Cost Savings

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Dollars in Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/04</td>
<td>$4.9</td>
</tr>
<tr>
<td>04/05</td>
<td>$8.5</td>
</tr>
<tr>
<td>05/06</td>
<td>$10.5</td>
</tr>
<tr>
<td>06/07</td>
<td>$15.4</td>
</tr>
<tr>
<td>07/08</td>
<td>$19.9</td>
</tr>
<tr>
<td>08/09</td>
<td>$22.5</td>
</tr>
<tr>
<td>09/10</td>
<td>$23.9</td>
</tr>
<tr>
<td>10/11</td>
<td>$28.8</td>
</tr>
<tr>
<td>11/12</td>
<td>$32.9</td>
</tr>
<tr>
<td>12/13</td>
<td>$38.1</td>
</tr>
</tbody>
</table>

**Q2: Approved CSI Savings**

Annual Report Fiscal Year 2012/2013

<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>Acted Upon</td>
<td>$659,318</td>
<td>$226,895</td>
<td>$1,931,576</td>
<td>$289,649</td>
<td>$1,053,262</td>
<td>$701,237</td>
<td>$34,620</td>
</tr>
<tr>
<td>Approved</td>
<td>$567,026</td>
<td>$156,399</td>
<td>$1,910,506</td>
<td>$257,942</td>
<td>$1,053,262</td>
<td>$701,237</td>
<td>$431,961</td>
</tr>
</tbody>
</table>

Approved Savings: $5.11 million

* 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 introduced last year. 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. Line charts showing trends will be developed in future years as data becomes available.
Appendix A
Process Control Systems
Process Control System

Process Name: Value Engineering Program

Primary Customers: Management, Regulators: FHWA

Customer's Valid Requirement(s): Effective use of resources to produce a quality transportation system.

Regulator's Valid Requirement(s): Projects with total costs of $25 million or more have a VE study performed during the design process.

Flow Chart

<table>
<thead>
<tr>
<th>Step</th>
<th>District Value Engineer</th>
<th>Value Engineering Team</th>
<th>State Value Engineer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Project Selection Process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Team Selection Process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Conduct Value Engineering Study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Recommendation Resolution Process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Reporting/Tracking Process</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Process and Quality Measures (QA/QC)

<table>
<thead>
<tr>
<th>Process Measures</th>
<th>Control Limits</th>
<th>Checking Item</th>
<th>Timeframe (Frequency)</th>
<th>Responsibility</th>
<th>QAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>% scheduled studies completed</td>
<td>75%</td>
<td>VER &amp; Work Plan</td>
<td>Quarterly</td>
<td>SVE</td>
<td>D1: 11/2006</td>
</tr>
<tr>
<td># projects &gt; $25 million never studied</td>
<td>0</td>
<td>Work Program</td>
<td>Annual</td>
<td>SVE</td>
<td>D2: 12/2006</td>
</tr>
<tr>
<td>% projects studied in PDE</td>
<td>75%</td>
<td>VER</td>
<td>Quarterly</td>
<td>SVE</td>
<td>D3: 12/2006</td>
</tr>
<tr>
<td>% of pending recs. per time period</td>
<td>VER</td>
<td>Quarterly</td>
<td>SVE</td>
<td>D4: 5/2007</td>
<td></td>
</tr>
<tr>
<td>Value Added $/hr</td>
<td>VER</td>
<td>Quarterly</td>
<td>SVE</td>
<td>D5: 1/2007</td>
<td></td>
</tr>
<tr>
<td>Adoption Rate</td>
<td>40-60%</td>
<td>VER</td>
<td>Quarterly</td>
<td>SVE</td>
<td>D6: 5/2007</td>
</tr>
<tr>
<td>Percent Saved</td>
<td>5% - 10%</td>
<td>VER</td>
<td>Quarterly</td>
<td>SVE</td>
<td>D7: 11/2006</td>
</tr>
<tr>
<td>Return on Investment</td>
<td>$130 to $1</td>
<td>VER</td>
<td>Annual</td>
<td>SVE</td>
<td>TPK: 1/2007</td>
</tr>
<tr>
<td>% Customer Satisfaction</td>
<td></td>
<td>Surveys</td>
<td>Annual</td>
<td>DVE</td>
<td></td>
</tr>
</tbody>
</table>

Checking / Measurement Monitoring

<table>
<thead>
<tr>
<th>Checking / Measurement Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Last Review</td>
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</tbody>
</table>

Miscellaneous Information

<table>
<thead>
<tr>
<th>Abbreviations</th>
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<tbody>
<tr>
<td>Federal Regulation 23 CFR 627</td>
</tr>
<tr>
<td>VE Procedure 625.030.002</td>
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<tr>
<td>1999 AASHTO Guidelines for VE</td>
</tr>
<tr>
<td>NCHRP Synthesis 352 - Value Engineering Applications in Transportation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODES:</td>
</tr>
<tr>
<td>C - Compliance</td>
</tr>
<tr>
<td>NC - Noncompliant</td>
</tr>
<tr>
<td>BP - Best Practice</td>
</tr>
</tbody>
</table>

Approved: ___________________________ Date: ___________________________ Process Owner: State Value Engineer Rev #: 1.5 Rev Date: 10/2007
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

Process and Quality Indicators
Checking / Indicator Monitoring

<table>
<thead>
<tr>
<th>Process</th>
<th>Quality Indicators</th>
<th>Control Limits</th>
<th>Checking Item</th>
<th>Timeframe (Frequency)</th>
<th>Responsibility</th>
<th>QAR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% work plans approved by July 1</td>
<td>100%</td>
<td>Work Plan Received</td>
<td>Annual</td>
<td>SVE</td>
<td>D1: 11/2006</td>
</tr>
<tr>
<td></td>
<td>% scheduled studies completed</td>
<td>75%</td>
<td>VERA &amp; Work Plan</td>
<td>Quarterly</td>
<td>SVE</td>
<td>D2: 12/2006</td>
</tr>
<tr>
<td></td>
<td># projects over $25 million never studied</td>
<td>0</td>
<td>Work Program</td>
<td>Annual</td>
<td>SVE</td>
<td>D3: 12/2006</td>
</tr>
<tr>
<td></td>
<td>% projects studied in the Design phase</td>
<td>60%</td>
<td>VERA</td>
<td>Quarterly</td>
<td>SVE</td>
<td>D4: 5/2007</td>
</tr>
</tbody>
</table>

| Input(s): Projects | Supplier(s): Work Program |

<table>
<thead>
<tr>
<th>Step / Time</th>
<th>Department / Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEED</td>
<td>DISTRICT VALUE ENGINEER</td>
</tr>
<tr>
<td></td>
<td>DISTRICT MANAGEMENT</td>
</tr>
<tr>
<td></td>
<td>STATE VALUE ENGINEER</td>
</tr>
<tr>
<td>REVIEW</td>
<td></td>
</tr>
<tr>
<td>DEVELOP</td>
<td></td>
</tr>
<tr>
<td>APPROVAL</td>
<td></td>
</tr>
<tr>
<td>DISTRIBUTE</td>
<td></td>
</tr>
<tr>
<td>EXECUTE</td>
<td></td>
</tr>
</tbody>
</table>

Process Owner: District Value Engineer
Rev #: 1.5
Rev Date: 8/2007

Approved: ____________________
Date: ____________________

Federal Regulation 23 CFR 627
VE Procedure 625-030-002
AASHTO Guidelines for VE
NCHRP Synthesis 352 - Value Engineering Applications in Transportation

CODES:
C - Compliance
NC - Noncompliant
BP - Best Practice

Feedback from surveys
Develop VE Work Plan

Review projects in production plan time.
- project costs > $25 million?
  NO
  YES
- project a quality candidate?
  NO
  YES
  VE window in this fiscal year?
  NO
  YES
  Add project to Candidate List
  all projects been reviewed?
  NO
  YES

Develop Work Plan
Submit work plan approval

Is work plan acceptable?
NO
YES

Approve work plan and return to DVE

Send copy of plan to SVE

Complete plans and publish on Web

Approved: ____________________
Date: ____________________

Process Owner: District Value Engineer
Rev #: 1.5
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Rev #: 1.5
Rev Date: 8/2007

Approved: ____________________
Date: ____________________

Process Owner: District Value Engineer
Rev #: 1.5
Rev Date: 8/2007
Process Control System

Process Name: Value Engineering Team Selection

Product/Service: Team with the necessary skills and experience to conduct a value engineering analysis

Primary Customers: Team Leaders & Team Members

Valid Requirement(s): Team makeup has the required disciplines, leadership skills and VE experience to study the selected project.

Regulator's Valid Requirement(s): Multi-disciplined team of individuals not personally involved in the design of the project.

Valid Requirement(s): Team makeup has the required disciplines, leadership skills and VE experience to study the selected project.

Flow Chart

Process and Quality Indicators

<table>
<thead>
<tr>
<th>Process Indicators</th>
<th>Control Limits</th>
<th>Checking Item</th>
<th>Timeframe (Frequency)</th>
<th>Responsibility</th>
<th>QAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Indicators</td>
<td>Specs / Targets</td>
<td>What is to be checked?</td>
<td>When to check?</td>
<td>Who will check?</td>
<td>Date of Last Review</td>
</tr>
<tr>
<td>Verifying</td>
<td>VER &amp; VE Study Report</td>
<td>Annual</td>
<td>SVE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No teams missing required disciplines</td>
<td>VER &amp; VE Study Report</td>
<td>Annual</td>
<td>SVE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No teams with more than 2 untrained team members serving as primary team member</td>
<td>VER, VE study report, SAVE, FURE, TRESS</td>
<td>Annual</td>
<td>SVE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Require District Consultant Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Request State Consultant Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Request District Consultant Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select VE Team</td>
<td>Feedback from survey</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Checking / Indicator Monitoring

Feedback from surveys

Miscellaneous Information

- Abbreviations
- Procedure Reference
- Notes, etc.

CODES:

C-Compliance
NC-Noncompliant
BP-Best Practice

Approved: ____________________  Date: ____________  Process Owner: District Value Engineer  Rev #: 1.5  Rev Date: 8/2007
Process Name: Conduct Value Engineering Study

Primary Customers: Management & DVE.

Customer's Valid Requirement(s): Follow the VE Job Plan to produce quality recommendations that can be implemented.

Regulator's Valid Requirement(s): Follow widely recognized systematic problem solving process that is used throughout private industry and government agencies.

Input(s): Project Information
Supplier(s): Project Manager

Partners: FHWA, State Value Engineer

Process and Quality Indicators

<table>
<thead>
<tr>
<th>Dept / Person</th>
<th>Step / Time</th>
<th>Flow Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISTRICT VALUE ENGINEER</td>
<td>VALUE ENGINEERING TEAM</td>
<td></td>
</tr>
</tbody>
</table>

Investigation Phase:
- Gather information about the present design from engineering reports, design plans, estimates, alternatives, right of way maps, etc.
- Gather information about project from Project Manager, Designer and anyone else familiar with the project.

Analysis Phase:
- Team identifies the elements with the greatest potential for value improvement.

Speculation Phase:
- Team generates alternatives to the proposed design by using brainstorming techniques.

Evaluation Phase:
- Team evaluates the alternatives and determines which offer the greatest potential for savings and approval. Advantages and disadvantages are considered at this point.

Development Phase:
- Team develops the alternatives selected. Sketches, cost estimates, validation of data and other technical work are done at this point.

Presentation Phase:
- Team presents its recommendations to management and appropriate staff with time allocated for question and answer.
- VE Study report is developed during the study as a step-by-step record.

Post Study Surveys of Team, Project Manager and Management, Feedback results to Project Selection and Team Selection Processes & Team Leader.

Enter data into VE database

Check the box for the process:
- Adopted
- 40% - 60%
- VER
- Quarterly
- SVE

Miscellaneous Information:

- Abbreviations
- Procedure Reference
- Notes, etc.

Approved: ____________________ Date: __________ Process Owner: District Value Engineer Rev #: 1.5 Rev Date: 8/2007

Errors, typos, and standardization issues were observed, but the overall context and content were maintained. The text appears to be a part of a larger document, possibly a manual or a guideline, discussing the process of conducting a Value Engineering Study.
Process Control System

Process Name: Value Engineering Recommendation Resolution Process

Primary Customers: Project Manager, SVE

Customer's Valid Requirement(s): Recommendations are acted upon in a timely manner, but that a recommendation is acted upon based on information and not time.

Regulator's Valid Requirement(s): Process to approve or reject recommendations to ensure the prompt review of VE recommendations.

Resolving Pending Recommendations

Distribute Study report to project team and Decision Makers

NEED

Resolve Pending Recommendations

Recommendations not resolved at presentation?

YES

NO

State Value Engineer

Determine ADR

VER Quarterly

SVE

Corrected to 40%-60%

Decision Meeting

Schedule Resolution Meeting

Are Decision Makers Available?

YES

NO

Conduct meeting - Obtain Decisions (Adopt, Modify, Pending, Reject)

Decisions Made?

YES

NO

Update the database

Monitor Pending Recommendations

Flow Chart

Input(s): Recommendations

Supplier(s): VE Team

Process and Quality Indicators

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<td>Adoption Rate</td>
<td>40%-60%</td>
<td>VER</td>
<td>Quarterly</td>
<td>SVE</td>
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Checking / Indicator Monitoring

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Miscellaneous Information

- Abbreviations
- Procedure Reference
- Notes, etc.

Approved: ___________________________ Date: _______________ Process Owner: District Value Engineer Rev #: 1.5 Rev Date: 08/2007
Process Control System

Process Name: Value Engineering Reporting Process
Primary Customers: Management
Partners: FHWA

Customer's Valid Requirement(s): Prepare accurate and reliable reports
Regulator's Valid Requirement(s): Report accurate results of the Value Engineering Program

Flow Chart

Input(s): Study Results
Supplier(s): DVE

Step / Person: State Value Engineer

Need
- Report the results of the VE program to management

Maintain Files
- Send e-mail reminding DVE's to enter activity for the quarter
- Prepare Draft Quarterly Report & e-mail to Districts
- Send copy of final study report to SVE
- File copy of final study report in District files
- Enter data into VE database at conclusion of study

Data Verification
- Review Draft Quarterly Report
- Is Draft Report accurate?
- NO
- YES
- D4/5/2007 C
- D5: 1/2007 C
- D6: 5/2007 C
- D7: 11/2006 C

Report
- Prepare Final Quarterly Report
- Prepare Final Annual Report
- Review Draft Quarterly Report
- Correct database and notify SVE
- File copy of final study report in District files
- Enter data into VE database at conclusion of study

Miscellaneous Information
- Codes:
  - C - Compliance
  - NC - Noncompliant
  - BP - Best Practice

Approved: ___________________________ Date: ________________ Process Owner: State Value Engineer
Rev #: 1.5 Rev Date: 8/2007
Process Control System

Flow Chart

Process Name: Cost Savings Initiative (CSI) Proposal
Primary Customers: Construction Contractor

Input(s): Cost Savings Idea
Supplier(s): Contractor

Process and Quality Measures (QA/QC)

Customer’s Valid Requirement(s): Review and either approve or reject the CSI proposal in a timely manner.

Regulator’s Valid Requirement(s): Program that encourages the use of a cost reduction incentive clause.

Checking / Indicator Monitoring

Miscellaneous Information

Schedule CSI Workshop

Hold CSI Workshop

YES

NO

Any more ideas?

YES

End

Schedule Concept Meeting

NO

Viable proposal?

NO

Time Ext?

YES

Grant Time Ext

NO

Submit Proposal

Forward copy to DVE

Review Proposal

Establish review schedule

Compile comments forward to DCE

Prepare letter of recommendation

Resolution meeting?

YES

NO

Resolution meeting?

YES

NO

Approved?

NO

Process SA

Update Database

Notify Contractor of results

Approved: ___________________________ Date: ___________________________ Process Owner: ___________________________ Rev #: 1.6 Rev Date: 5/2011

Federal Regulation 23 CFR 627
Section 4 FDOT Specifications
Procedure Topic 625-030-005

VER Quarterly DVE

D1: 11/2006 C

VER Quarterly DVE

D2: 12/2006 C

VER Monthly SVE

D3: 12/2006 C

VER Monthly SVE

D4: 5/2007 C

VER Monthly SVE

D5: 1/2007 C

VER Monthly SVE

D6: 5/2007 C

VER Monthly SVE

D7: 11/2006 C

TPK: 1/2007 C

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NC - Noncompliant
BP - Best Practices

CODES: