Value Engineering
Annual Report
FY 2017/2018

FLORIDA DEPT. OF TRANSPORTATION
VALUE ENGINEERING
# Table of Contents

Executive Summary ............................................................................................................................ 1  
Program Organization ......................................................................................................................... 2  
Value Engineering (VE) Overview ...................................................................................................... 3  
Cost Savings Initiative (CSI) Overview .............................................................................................. 5  
FY 2017/2018 VE Performance Measures .......................................................................................... 6  
  Adopted Recommendations ............................................................................................................. 7  
  Adoption Rates .......................................................................................................................... 9  
  Percent Project Saved ................................................................................................................ 10  
  Percent Program Saved .............................................................................................................. 11  
  Return on Investment .................................................................................................................. 12  
  Work Plan Completion ................................................................................................................ 13  
  Pending Recommendations ......................................................................................................... 14  
FY 2017/2018 CSI Performance Measures ...................................................................................... 15  
  CSI Summary ............................................................................................................................ 16  
  CSI Approved Savings ................................................................................................................. 17  
  CSI Percent Project Saved .......................................................................................................... 18  
  CSI Percent Program Saved ..................................................................................................... 19  
Appendix: Process Control Systems .............................................................................................. 20
Value Engineering During Project Development

The districts conducted 17 studies or 74% of the original number of studies scheduled for fiscal year 2017/2018. The original work plan had 23 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, 8 of the 17 scheduled studies (47%) were either dropped from the work plan altogether or rescheduled for the 2017/2018 fiscal year, while 4 of the conducted studies were added to the original work plan.

During this same period, the districts acted on 191 recommendations, approving 101 for a 53% adoption rate. Sixty-six of the approved recommendations resulted in $213.8 million in project cost avoidance/savings. The remaining 35 approved recommendations were value added recommendations that increased project performance, while adding $39.8 million to the project cost. Therefore, the total value of the approved recommendations, including the value added recommendations, produced $174.1 million in project cost avoidance/savings.

The approved recommendations resulted in a 5.46% project saved, 5.74% program saved and a Return on Investment (ROI) of $153.8 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 66 pending recommendations totaling $861.4 million in potential cost avoidance/savings at the end of the 2017/2018 fiscal year. This is a 16% decrease in the total number of pending recommendations and a 5.9% decrease in the amount of pending dollars from the 4th quarter of last year. Fifty-eight of the 66 recommendations have been pending for more than 12 months, which is 88% 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

Eighteen Cost Savings Initiative (CSI)’s) Proposals were submitted during fiscal year 2017/2018. During this same period, the districts approved 21 proposals totaling more than $8.49 million in savings. The approved CSI proposals resulted in a 0.51% project saved and a 0.23% program saved. There are currently 6 pending CSI’s totaling $1.46 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.

CENTRAL OFFICE (Tallahassee)
Kurt Lieblong, P.E., CVS
State Value Engineer
(850) 414-4787
e-mail: kurt.lieblong@dot.state.fl.us

DISTRICT 2 (Lake City)
Bobbi Goss
District Value Engineering Coordinator
(386) 758-3769
e-mail: bobbi.goss@dot.state.fl.us

DISTRICT 3 (Chipley)
Keith Hinson, P.E.
District VE Program Manager
(850) 330-1547
e-mail: keith.hinson@dot.state.fl.us

DISTRICT 4 (Ft. Lauderdale)
Eugene Khashper
District Utilities Administrator
(954) 777-4128
e-mail: eugene.khashper@dot.state.fl.us

DISTRICT 5 (Deland)
Ashraf Elmaghraby, P.E.
District Value Administrator
(386) 943-5645
e-mail: ashraf.elmaghraby@dot.state.fl.us

DISTRICT 7 (Tampa)
Frank Chupka, P.E.
District Value Engineer
(813) 975-6076
e-mail: frank.chupka@dot.state.fl.us

TURNPIKE ENTERPRISE (Orlando)
Stephanie Sharp, P.E.
Roadway Design Engineer
(407) 264-3038
e-mail: stephanie.sharp@dot.state.fl.us

DISTRICT 1 (Bartow)
John A. Nelson
Value Engineering/CSI Coordinator
(863) 519-2715
e-mail: JohnA.Nelson@dot.state.fl.us

DISTRICT 6 (Miami)
Calvin Mason, P.E.
Project Development Engineer
(305) 470-5386
e-mail: calvin.mason@dot.state.fl.us

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.

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>Quality Measure</th>
<th>Calculation</th>
</tr>
</thead>
<tbody>
<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>
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>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: Number of CSI’s</td>
</tr>
<tr>
<td>Sum of all CSI’s</td>
</tr>
<tr>
<td>Q2: Approved Cost Savings</td>
</tr>
<tr>
<td>Sum of all approved CSI savings</td>
</tr>
<tr>
<td>Q3: Percent Project Saved</td>
</tr>
<tr>
<td>Value of Approved Proposals</td>
</tr>
<tr>
<td>Total Project Costs</td>
</tr>
<tr>
<td>Q4: Percent Program Saved</td>
</tr>
<tr>
<td>Value of Approved Recommendations</td>
</tr>
<tr>
<td>3 Year Monthly Average Lettings</td>
</tr>
</tbody>
</table>
Fiscal Year 2017/2018
Value Engineering
Performance Measures
Adopted Recommendations

Q1: Annual Approved Cost Avoidance/Savings

Total Approved Recommendations: $2.1 billion

Approved $5's: $310.4M, $150.0M, $150.0M, $140.7M, $182.2M, $140.9M, $351.6M, $140.9M, $490.3M, $213.8M

Q1: Cost Avoidance Recommendations

Approved Recommendations: $213.8 million

Approved $5's: $20,815,671, $12,508,185, $110,570,755, $19,529,913, $190,317,000, $57,130,000, $38,836,715, $13,902,719, $17,568,588, $85,002,173, $4,542,165, $52,884,900, $25,440,000, $14,492,904
Adopted Recommendations

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

* Approved Value Added: $286.8 million

* Approved Value Added: $39.8 million

Q2: Annual Approved Value Added Recommendations

Q2: Value Added Recommendations

Annual Report FY 2017/2018

* Approved Value Added: $39.8 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%

Q3: Adopted Recommendations
Annual Report FY 2017/2018

Target Range: 40%-60%

<table>
<thead>
<tr>
<th>District</th>
<th>Number</th>
<th># Recommended</th>
<th># Approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>District 1</td>
<td>71%</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>District 2</td>
<td>38%</td>
<td>28</td>
<td>10</td>
</tr>
<tr>
<td>District 3</td>
<td>55%</td>
<td>22</td>
<td>12</td>
</tr>
<tr>
<td>District 4</td>
<td>68%</td>
<td>19</td>
<td>13</td>
</tr>
<tr>
<td>District 5</td>
<td>46%</td>
<td>67</td>
<td>31</td>
</tr>
<tr>
<td>District 6</td>
<td>72%</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>District 7</td>
<td>57%</td>
<td>23</td>
<td>12</td>
</tr>
<tr>
<td>Turnpike</td>
<td>0%</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Percent Project Saved

Q4: Annual Percent Project Saved

![Graph showing annual percent project saved from fiscal year 2008/09 to 2017/18. The target range is 5%-10% and the national average is 5%.]

Q4: Percent Project Saved

Annual Report Fiscal Year 2017/2018

![Bar chart showing percent project saved by district for fiscal year 2017/2018. The target range is 5%-10%.]

Districts:
- District 1: 13.32%
- District 2: 7.95%
- District 3: 4.51%
- District 4: 5.44%
- District 5: 0.00%

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.

**Q5: Annual Percent Program Saved**

- Fiscal Year: 10/11 to 17/18
- Percent Program Saved: 8.62% to 16.30%

**Q5: Percent Program Saved**

- Annual Report Fiscal Year 2017/2018
- Districts: District 2, District 3, District 4, District 5, District 6, District 7, Turnpike
- Percent Program Saved: 37.7%, 0.95%, 10.29%, 12.03%, 2.27%, 0.00%
FHWA data for fiscal year 2016/2017 and 2017/2018 was not available at time of publication.
Fiscal Year 2017/2018
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).
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.
Appendix
Process Control Systems
Process Control System

Flow Chart

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 VIE system with estimated total costs > $25 million have a VE analysis.

Input(s): Projects
Supporting Program: VE Program

Flow Chart:

1. NEED
   - Develop VE Work Plan
   - Review projects in production pipeline
   - Proceed with VE if:
     - Yes: Project is a candidate
     - No: Project is not a candidate

2. REVIEW
   - Review project
   - If Project Costs > $25 million:
     - No: Proceed with VE
     - Yes: Add project to Candidate List
   - If Project Costs < $25 million:
     - No: Proceed with VE
     - Yes: Review project

3. DRAFT
   - Draft Work Plan

4. APPROVAL
   - Submit work plan for approval
   - If work plan is acceptable:
     - Yes: Approve work plan and return to VIE
   - No: Rebsubmission

5. DISTRIBUTE
   - Send copy of plan to SVE

6. EXECUTE
   - Execute work plan

Process and Quality Indicators:
- % work plans reviewed
- % scheduled reviews completed

Checking & Indicator Monitoring:
- Work Plan Received
- VER & Work Plan
- Quarterly

Date of Last Review:
- SVE: 01/2009
- SVE: 02/2010
- SVE: 04/2011
- SVE: 06/2012
- SVE: 07/2013
- TRK: 01/2015

Codes:
- C: Compliance
- NC: Non-compliant
- FP: Best Practice

Miscellaneous Information:
- Federal Regulation 23 CFR 627
- VE Procedure 625-03C-002
- AASHTO Guidelines for VE
- NCHRP Synthesis 352 – Value Engineering Applications in Transportation

Date:

Process Owner: District Value Engineer
Rev #: 1.6
Rev Date: 4/2016