

2010 FHWA Value Engineering (VE) Program Performance Measures

The FHWA's VE program is focused on continuously improving the development and delivery of highway improvement projects. The following goals and measures were developed in FY2009 to monitor and report on the progress of FHWA's VE Program:

- Goal 1: Maximize the influence VE studies have on a project's cost and performance;
- Goal 2: Enhance the quality of VE programs; and
- Goal 3: Improve FHWA's stewardship and oversight of the VE Program.

These goals reflect FHWA's priorities of continuously improving their stewardship and oversight of the VE program, enhance how VE analyses are conducted, and support State DOTs efforts to improve their VE programs. Annually FHWA collects, analyzes and reports on the progress achieved with accomplishing the VE program goals and measures. The innovative and successful practices that are identified along with the results that are compiled annually from the VE Accomplishments Report are available at: <http://www.fhwa.dot.gov/ve/2010/> .

The trends identified from past VE Accomplishments Reports along with the data that was compiled for FY 2009 was analyzed and used to establish a baseline for the performance measures and indicators that were established for each goal. Targets were established for 2016 to support advancing the conduct of VE analyses nationally. The results of the FY 2010 data that was analyzed is shown below. For additional information on FHWA's VE program, the FY 2010 VE Accomplishments Report, or the progress with achieving these VE program goals and objectives, please contact Ken Leuderalbert at ken.leuderalbert@dot.gov or 317-226-5351.

Goal 1: Maximize the influence VE studies have on a project's cost and performance.

Outcome: By increasing the number of VE study recommendations that are implemented, improvements in the project's cost-effectiveness and performance will be realized.

-Baseline – FY2009:	1.9
-FY 2010:	2.0
-Target 2016:	2.5

These measures were developed using weighted averages of the data collected from the annual VE reporting cycles. These measures are based on a weighted average of 60% of the indicator for project construction costs saved and 40% of the indicator for VE study recommendations implemented. Both the national average and numeric average for each indicator will be compiled, tracked and reported.

Performance indicators:

A. Percentage of VE study recommendations implemented

-National average:

- Baseline – FY 2009: 44 %
- FY 2010: 43 %
- Target – FY 2016: 55 %

-Performance indicator & metric: The data collected (question 11) in the annual VE reporting cycle for each state DOT is converted to a numeric value and averaged as depicted in the following matrix:

- Baseline – FY 2009: 2.3
- FY 2010: 2.3
- Target - 2016: 2.8

	0	0.5	1	2	3	4	5
% of Implemented Recommendations	0	0.1 - 15%	16-30%	31-45%	46-60%	61-80%	81-100%

B. Percentage of project construction costs saved

-National average:

- Baseline – FY 2009: 5.8%
- FY 2010: 5.8%
- Target – FY 2016: 8.0%

-Performance metric: The data collected (question 10b & 12b) in the annual VE reporting cycle for each state DOT is converted to a numeric value and averaged as depicted in the following matrix:

- Baseline – FY2009: 1.6
- FY 2010: 1.9
- Target – FY 2016: 2.4

	0	0	1	2	3	4	5
% of Construction Project Cost Savings	0	0.1 - 2..5%	2.5-5%	5-7.5%	7.5-10%	10-12.5%	More than 12.5%

Goal 2: Enhance the quality of VE programs.

Outcome: To enhance both the strategic and day-to-day capacity (e.g., policy, procedures, functions, services) and quality of VE programs.

- Baseline – FY 2009: 2.7
- FY 2010: 2.9
- Target - FY 2016: 3.5

These measures were developed using weighted average of the data collected from the annual VE reporting cycles. These measures are based on a weighted average of 30% for the state DOTs with a VE policy, 30% for the State DOTs with an established VE program, and 40% for the state DOT's conducting VE studies prior to completing 30% of the design of a project. Both the national average and numeric average for each indicator will be compiled, tracked and reported.

Performance indicators:

A. Number of state DOTs with a VE policy.

- Baseline – FY 2009: 3.0
- FY 2010: 3.6
- Target – FY 2011: 4.1

Performance Metric: The data collected (question 1b) in the annual VE reporting cycle is converted to a numeric value and averaged as depicted in the following matrix:

	0	1	2	3	4	5
VE Policy	No policy documented or formal VE program commitment	Documented commitment to conduct required VE analysis (23 CFR 627) & 1 VE program element in policy	2 VE program elements addressed in policy	3 - 4 VE program elements addressed in policy	5 - 6 VE program elements addressed in policy	7 - 8 VE program elements addressed in policy

B. Number of states with an established VE Program.

- Baseline – FY 2009: 2.8
- FY 2010: 3.0
- Target – FY 2016: 4.0

Performance Metric: The data collected (question 1a) in the annual VE reporting cycle is converted to a numeric value and averaged as depicted in the following matrix:

	0	1	2	3	4	5
VE Policy	No policy documented or formal VE program commitment	1 VE program element identified or under development	2 VE program elements identified or under development	3 VE program elements identified or under development	4 VE program elements identified or under development	5 - 6 VE program elements identified or under development

C. Percentage of VE studies conducted prior to completing 30% of a project's design.

- Baseline – FY 2009: 2.4
- FY 2010: 2.3
- Target – FY 2016: 2.7

Performance Metric: This indicator reflects the percentage of the VE studies that state DOTs conduct prior to completing 30% of a project’s design, using the data collected (question 4c) in the annual VE reporting cycle, is converted to a numeric value and averaged as depicted in the following matrix:

	0	0.5	1	2	3	4	5
% of VE studies conducted before completing 30% of a project’s design	0	0.1 – 15 %	15 – 30 %	30 – 45 %	45 – 60 %	60 – 80 %	80 – 100 %

Goal 3: Improve FHWA’s stewardship and oversight of the VE Program.

Outcome: To enhance FHWA’s consistency with providing oversight of the VE programs and involvement with studies.

- Baseline - FY 2009: 2.5
- FY 2010: 2.9
- Target – FY 2016: 4.3

These measures were developed using weighted average of the data collected from the annual VE reporting cycles. These measures are based on a weighted average of 30% for the FHWA Divisions involvement in VE studies, 30% for the FHWA Divisions verifying all required VE studies are conducted, and 40% for the FHWA Divisions stewardship and oversight of VE programs and studies. Both the national average and numeric average for each indicator will be compiled, tracked and reported.

Performance indicators:

A. Divisions are engaged in VE studies.

- Baseline – FY 2009: 3.1
- FY 2010: 3.0
- Target – FY 2016: 4.2

Performance Metric: The data collected (question 20a) in the annual VE reporting cycle is converted to a numeric value and averaged as depicted in the following matrix:

	0	1	2	3	4	5
Participating in VE studies	0 or No involvement	Rarely (1-20 %)	Seldom (21-40 %)	Occasionally (41-60 %)	Frequently 61-80 %	Normally (80-100 %)

B. Number of Divisions verifying all required VE studies are conducted.

- Baseline – FY 2009: 3.0
- FY 2010: 4.0
- Target 2016: 5.0

Performance Metric: The data collected (question 21) in the annual VE reporting cycle is converted to a numeric value and averaged as depicted in the following matrix:

	0	0	1	2	3	4	5
Verification of VE studies conducted	0	0.1 - 5	6 - 20	21 - 35	26 - 39	40 - 51	52

C. Enhance the consistency of FHWA’s stewardship and oversight of VE.

- Baseline – FY 2009: 1.6
- FY 2010: 1.9
- Target – FY 2016: 3.9

Performance Metric: The data collected for Stewardship and Oversight (questions 19 and 20) and Risk (questions 17 and 18) in the annual VE reporting cycle is converted to a numerical value and averaged as depicted in the following matrix. The final measure is based on a weighted average of 75% for the Divisions stewardship and oversight and 25% for their risk management of the State DOTs VE program.

	0	1	2	3	4	5
Integration of VE in Divisions stewardship & oversight agreements, risk assessment, & reviews conducted	<p>-VE is not included in Divisions stewardship & oversight agreement</p> <p>-VE is not considered in Division’s annual risk assessment process</p>	<p>-VE analysis identified in planning & design sections of Divisions stewardship & oversight agreement</p> <p>-VE identified as issues to consider in Division’s annual risk assessment process</p>	<p>-State DOTs VE policies & procedures referenced in Division’s stewardship & oversight agreement</p> <p>-Division VE coordinator identified in Division’s Stewardship & Oversight agreement or work plan</p> <p>-VE was considered in Division’s risk assessment process</p>	<p>-Division’s VE coordinator roles & responsibilities identified in Division’s stewardship & oversight agreement</p> <p>-Division involved in VE analysis conducted on direct oversight projects</p> <p>-VE risk assessment conducted as a part of the Division’s risk assessment process</p>	<p>-Conducting VE analysis, identifying & verifying recommendations are implemented are included in Division’s stewardship & oversight agreement</p> <p>-VE is integrated into Division’s work plan</p> <p>-VE review conducted or need to conduct a VE review is identified in Division’s work plan based on Division’s VE risk assessment</p>	<p>-Monitoring, evaluating & reporting on VE program are included in Division’s stewardship & oversight agreement</p> <p>-Activities to improve State DOT’s VE program or VE analyses conducted are included in Division’s VE work plan</p>