
Value Analysis Program



ANNUAL REPORT

Federal Fiscal Year 2012/2013

October 1, 2012 - September 30, 2013



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EXECUTIVE SUMMARY

The Value Analysis (VA) Program would like to share the extraordinary accomplishments for the Federal Fiscal Year (FY) 2012/13. In October 2012, Moving Ahead for Progress in the 21st Century (MAP-21) increased the original VA threshold to \$50 million (\$40 million for bridge projects). This increase impacted the number of studies mandated. However, we're happy to report that Caltrans and their local partners embraced the VA process and delivered record breaking results. The team of District VA Coordinators (DVACs) worked diligently to ensure the success of the VA program and encouraged District and Local Agency leaders to maximize VA benefits by using the process as a premier project management tool rather than just meeting the mandated thresholds.

Last year, 26 studies were completed on projects with a total cost (capital and support) of over \$3.5 billion. Of the 26 studies, 15 were performed by Caltrans with consultant Certified Value Specialist (CVS) team leaders. The other 11 studies were performed by our local partners such as cities, counties, and local transportation authorities. The results of these studies were reported in the annual Federal Highway Administration (FHWA) VA Program Performance Report.

Caltrans reported a savings of \$347 million to the FHWA for the 2012/13 federal fiscal year. These savings were derived from the "Accepted Alternatives" proposed by the VA teams and implemented by the decision-makers, project managers, functional managers, and Project Development Teams (PDTs). In comparing the cost savings to the cost to conduct the studies, Caltrans achieved a Return on Investment (ROI) of 285:1 meaning \$285 in savings for every dollar spent on conducting the studies.

The Joint Stewardship and Oversight Agreement between Caltrans and the FHWA lists four performance indicators/measures for the Value Analysis Program: percent of required studies conducted, number of non-required studies conducted, percent project cost savings, and implementation rate. Caltrans conducted 100 percent of all required studies for the 2012/13 federal FY. In addition, Caltrans performed five studies on projects costing less than the \$50 million threshold for highway projects or the \$40 million threshold for bridge projects. Caltrans also reported an average cost savings of 10 percent, which well exceeds the national average, and doubles our 5 percent performance goal. The implementation rate is determined by comparing the number of proposed recommendations to the number of implemented recommendations. Caltrans' implementation rate was 57percent for last year.

In addition to performing traditional project VA studies, Caltrans' VA program has performed many other activities throughout the years. This year has been no exception. Seven process studies were initiated in response to the Director's Performance Review and the Department of Finance's "zero-based" budget drill. This year, Caltrans was also very active in the American Association of State Highway Transportation Officials (AASHTO) Value Engineer technical committee. All of these activities are highlighted throughout this report.

2012/2013 PROGRAM RESULTS

During the federal fiscal year ending September 30, 2013 the following Value Analysis activities were completed:

- Twenty-six (26) studies were completed including five (5) non-mandated studies. The total estimated project cost of the transportation projects completed was \$3.5 billion. Of the 26 studies, Caltrans performed 15 studies using VA consultant team leaders, and the remaining studies were performed by our local partners.
- An additional seven (7) transportation project studies were performed, but not completed this FY. The results of these studies will be reported when complete.
- Project teams implemented 90 of 157 proposed recommendations resulting in \$347 million in savings. Table 1 summarizes the results of the VA transportation project studies.
- In addition to the project VA studies, seven process VA studies were performed. These studies are designed to improve Caltrans' business practices. See the "Process Studies" section (page 6) for details on these studies.
- Thirty-four (34) Value Engineering Change Proposals (VECPs) were submitted by contractors and approved by Caltrans resulting in savings of \$4,548,000 (the State shared 50% of these savings).

Table 1: Value Analysis Studies – Federal FY 2013/2014

Study Sponsor	No. Studies	Original Project Costs (\$ Million)	Value Analysis Alternatives				Total Study Cost (x 1000)	Return on Investment (ROI:1)	Project Savings	Implementation Rate
			Proposed		Implemented					
			No.	Savings (\$ Million)	No.	Savings (\$ Million)				
Caltrans	15	\$679	78	\$127	44	\$45	\$818	55	7%	56%
Local Agency	11	\$2,858	79	\$404	46	\$303	\$399	758	11%	58%
Total	26	\$3,537	157	\$531	90	\$347	\$1,218	285	10%	57%

The VA program has been striving to improve the quality of alternatives so that the decision-makers can be confident in approving and implementing recommended changes. The total implementation rate of the VA Program (the percentage of implemented alternatives with respect to proposed alternatives) was **57%**. One of the main barriers to implementation is the timing of the study. Table 2 shows the average return on investment, implementation rate and savings by project phase. The greatest return on investment was during the environmental phase (0 phase) which is consistent with the national average. Caltrans did find some success early in the Design phase. However, as studies performed late in the PS&E phase had more constraints, the return on investment and project savings fell dramatically.

Table 2: VA Study Results by Phase

Project Phase	# of Studies	Implementation Rate (%)	ROI	Savings %
Early PA&ED	12	64%	510	13%
Late PA&ED	9	56%	82	3%
Early PSE	3	44%	6	1%
Late PSE	2	50%	-22	-2%

Table 3 shows a comparison of results by District. District 4 completed the most studies (10) of which four studies were performed by local partners. District 8 had the highest return on investment with 541:1. District 3 had the highest implementation rate with 83%. District 4 had the highest average cost savings with 13 percent.

Table 3: VA Study Results by District

District	# of Studies	Implementation Rate (%)	ROI	Avg. Project Savings (%)
1	0	-	-	-
2	1	57	9	2
3	1	83	43	4
4	10	63	308	13
5	0	-	-	-
6	1	36	143	3
7	4	58	103	9
8	7	56	541	9
9	0	-	-	-
10	0	-	-	-
11	1	40	0	0
12	1	50	32	2
Statewide Totals	26	57	285	10

PROJECT PERFORMANCE CRITERIA

In addition to realizing substantial cost savings, Caltrans is also working closely with our local partners to find common ground to maximize the performance of projects. FHWA required Caltrans to report how the VA studies affected the performance of projects. Caltrans' VA program was the first program in the nation to use performance criteria during VA studies. Recently FHWA has adopted these measures to capture the successes of VA alternatives.

FHWA has divided the performance criteria into five categories; Safety, Traffic Operations, Environmental, Construction and Right of Way. These differ slightly from Caltrans' standard performance measures. Caltrans includes Maintainability and measures Local Operations and Mainline Operations separately. We also capture right of way (R/W) impacts through Land-use and Environmental performance criteria. Also, Caltrans doesn't use Safety as a performance measure in VA because all of our designs are considered safe and meet design standards.

FHWA has asked the states to identify the number of accepted alternatives that impact one or more of the five performance categories significantly. At this time, only positive impacts are being reported, see Table 5. This year Caltrans reported 9 alternatives improving Traffic Operations, 15 alternatives improving Environmental Impacts, 55 alternatives that improved Construction.

Table 5: Positive Performance Improvements by District

District	Safety	Traffic Ops	Environmental	Construction	R/W
1	0	0	0	0	0
2	0	0	0	4	0
3	0	0	0	4	0
4	0	4	9	19	0
5	0	0	0	0	0
6	0	0	0	1	0
7	0	1	1	10	0
8	0	3	4	17	0
9	0	0	0	0	0
10	0	0	0	0	0
11	0	0	0	0	0
12	0	1	1	0	0
Total	0	9	15	55	0

OTHER VA PROGRAM ACTIVITIES

POLICY CHANGES

Effective October 1, 2012 new federal legislation, Moving Ahead for Progress in the 21st Century (MAP-21) made changes to the existing Value Engineering/Value Analysis mandate. The new federal mandate doubled the existing threshold from \$25 million to \$50 million on projects on the National Highway System (NHS) receiving federal assistance. It also doubled the bridge project threshold from \$20 million to \$40 million on projects on the NHS receiving federal assistance. Effective December 1, 2012 Deputy Directive 92 (DD-92-R1) was revised to include these changes in policy.

NATIONAL ENGAGEMENT

It's important to Caltrans to engage nationally with other DOT and FHWA professionals to share ideas, develop policies, and share best practices and lessons learned from our counterparts across the nation. The HQ VA program is very active in the AASHTO VE Technical Committee (VETC). Troy Tusup, Caltrans VA Program Manager was elected as the new Chairman of the AASHTO VETC.

As Chairman, Troy has built a "friends of VE" database with several hundred VE professionals. Communicating the benefits and best practices has increased the awareness throughout the nation. Preparing for the 2015 Biennial AASHTO VE Peer Exchange Workshop in Washington DC, he has also engaged with other transportation related federal agencies to promote the benefits of VE in a non-traditional manner. In today's changing delivery environment, VE has become the premier tool for project managers and stakeholders alike.

TRAINING

With a tightened training budget, the VA program delivered just two "Effective Team Member Training" courses last year (in District 7 and 8). Although these seminars were successful for the 28 participants, we plan to continue to solicit all districts for opportunities to engage with potential team members.

The HQ VA program also delivered a FHWA VA training webinar. The webinar featured FHWA HQ division, Delaware VE Program Manager and Troy Tusup, Caltrans VA Program Manager. The webinar was titled "Selecting VE Team Members" and communicated best practices and lessons learned from both a large and small DOT perspective. Over 75 attendees from around the Nation attended and the webinar will soon be posted to the FHWA websites for future use.

<http://www.fhwa.dot.gov/ve/webinar.cfm>

PROCESS STUDIES

This year, the HQ VA program along with the Districts and Divisions utilized the VA job plan to initiate seven process studies to streamline and improve the way Caltrans does business. Many of these process studies were in direct response to the Director's performance review and the Department of Finance's "zero-based" budgeting drill. These accomplishments were highlighted in the Program Review Final Report (dated January 2014). Common themes of these studies were to streamline delivery by collaborating with our partners to improve project delivery. These studies are:

- Design and Right of Way decision making delegation
- SHOPP PID Process Improvement
- HQ Office of Business and Economic Opportunity (OBEO) Organization
- HQ Division of Design Organization
- DES Unbalanced Bid Process and Tools

Along with these organizational enhancements, Caltrans used the VE job plan to develop several "Strategic Plans" to align the divisions with the Caltrans mission, vision, and goals and to enhance the communication with our external partners. These included:

- California Bridges and Structures Strategic Direction – This effort resulted in a document outlining the strategies to guide all statewide efforts related to the delivery, management and preservation of statewide structural assets ranging from retaining walls to bridges.
- Caltrans Geospatial Strategic Direction – This study culminated into strategies that unified the various geospatial efforts distributed between multiple divisions and districts within Caltrans.

Many of these studies are continuing to work out the details. The VA program will continue to utilize this proven job plan to meet the Department's goals. For more information, please contact the HQ VA program to obtain detailed reports. Once finalized, reports can be found on the VA intranet at:

<http://onramp.dot.ca.gov/hq/design/specproj/value/Process-Product/index.php>

AWARDS

The VA program awarded two outstanding achievement awards this year, the District Value Analysis Coordinator (DVAC) of the Year and the Study of the Year Award.

Caltrans Award: 2013 District VA Coordinator of the Year

District 4, Binh Dang earned the title of “Value Analysis Coordinator of the Year.” Each year the HQ Value Analysis Program evaluates the District and Regional VA Coordinators based on some very stringent criteria. Engaging with Management, meeting FHWA requirements, identifying projects early to maximize savings, and engaging with local officials and HQ are among some of the criteria.

Over the past year, Binh managed 6 Caltrans project studies and assisted with 4 local oversight project studies. Congratulations to Binh and the entire District 4 staff from the HQ VA program.

Caltrans Award: Study of the Year Award

District 8 and its local partners from San Bernardino Associated Governments (SANBAG) and Parsons have won the FHWA/Caltrans “Value Analysis Study of the Year” Award for 2013. District 8’s I-10 Express Lanes Widening was selected for its outstanding performance. The implementation of the six VA alternatives offers over \$158 million in project cost savings (10%) while increasing performance by 14%. This results in an overall value improvement increased of 25%.

The decision to implement six of the VA alternatives has a major impact on the delivery of the overall project. From pavement types to funding issues, the VA team and stakeholders used the latest innovations and creative funding for the project to move in the right direction. The project is ear-marked as a design-build project and the VA study recognized the potential for using the latest technology in the delivery of the project. High life-cycle savings will be achieved by investing in superior performing asphalt pavement technology (Superpave) and 40-year PCC when applicable. The VA team also incorporated more hardscape and drought resistant alternatives to meet the needs of the surrounding communities. The most impactful VA alternative presents an option for project phasing. In lieu of a full build-out, the VA team proposed a partial build-out of the ultimate design, and suggests using the first phase “HOT” lane funding to subsidize the ultimate design concept.

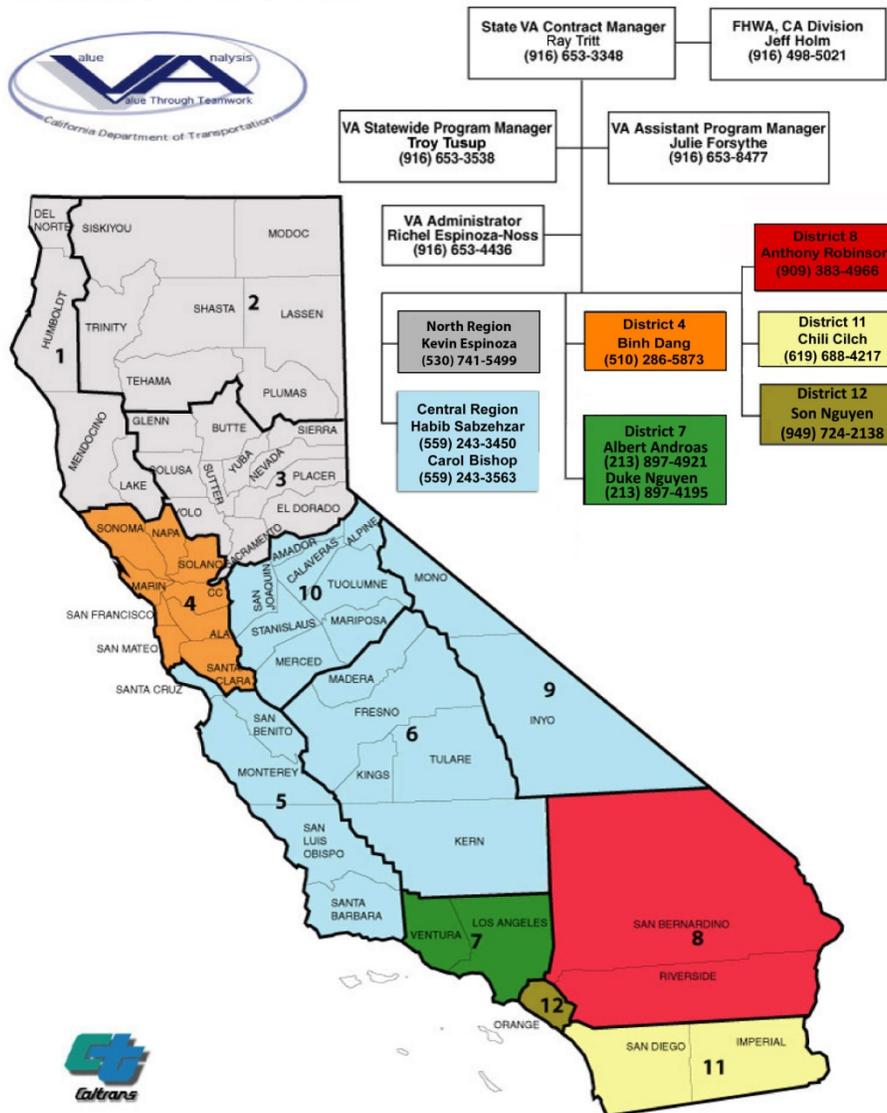
VA PROGRAM ORGANIZATION

Caltrans has been actively engaged in Value Analysis (VA) for more than 40 years. Both consultants and in-house VA team leaders are used to organize and conduct VA studies under the leadership of District VA Coordinators (DVAC). The Office of Special Projects in the Headquarters Division of Design manages the VA Program for the entire state.

VA Program Mission: Provide stewardship and improve mobility across California through application of the VA methodology on Caltrans' projects, products, and processes.

VA Program Vision: Caltrans is a leader in the application of Value Analysis in the transportation industry.

Value Analysis Organization Chart



UPCOMING ACTIVITIES

- Additional VA studies were performed, but not finalized, in fiscal year 2012/2013. Many of these studies were performed late in the FY and are in various stages of progress. Some studies are very delicate and need time to assess the impacts so decision makers can make informed decisions.
- The Caltrans VA program is working diligently to help many of the HQ Divisions to meet the Director's performance review recommendations. Many of these process reviews will be wrapping up and the Caltrans Executive Board will be reviewing the results for implementing the new statewide strategies.
- Once the program review is complete, an effort will be made to compile all the VA recommendations into a summary report. Many of the VA team's recommendations are comprised of short, medium, and long term goals. These ideas will need to be kept fresh to assist the Divisions to continuously improve their processes.
- The 2015 AASHTO Value Engineering Peer Exchange Workshop will be held in Washington D.C. in July 2015. This joint workshop with DOT and FHWA VE experts will continue talks on policy and procedural changes needed throughout the nation.
- Caltrans' VA program will continue to administer a one-day training workshop on "How to be an Effective VA Team Member". Please contact the local DVAC for information.

Caltrans Delivers Value

