
Value Analysis Program



ANNUAL REPORT

Federal Fiscal Year 2011/2012

October 1, 2011 - September 30, 2012





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EXECUTIVE SUMMARY

The Federal Fiscal Year (FY) 2011/12 was a busy year for Caltrans' Value Analysis (VA) Program. Utilizing the statewide VA contracts, studies are performed continuously throughout the year. Over 40 task orders were written to perform studies during this fiscal year. It requires a great deal of effort and persistence to coordinate and perform these studies. The team of District VA Coordinators (DVACs) worked diligently to ensure the success of the VA program.

Last year, 34 studies were completed on projects with a total cost (capital and support) of over \$1.84 billion. Of the 34 studies, 23 were performed by Caltrans staff 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 local studies are also included in this annual federal VA report.

Caltrans reported a savings of \$64 million to the Federal Highway Administration (FHWA) for the 2011/12 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 44:1 meaning \$44 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 2011/12 federal FY. In addition, Caltrans performed four studies on projects costing less than the \$25 million threshold for highway projects or the \$20 million threshold for bridge projects. Caltrans also reported an average cost savings of 3 percent, which is consistent with the national average, but falling short of our 5 percent goal. The implementation rate is determined by comparing the number of proposed recommendations to the number of implemented recommendations. Caltrans' implementation rate was 45 percent for last year.

In addition to performing traditional project VA studies, Caltrans' VA program has many other activities throughout the year. This year has been no exception. Six process studies were initiated and two were finalized. This year, Caltrans was also very active in the AASHTO VE technical committee. All of these activities are highlighted in this report.

2011/2012 PROGRAM RESULTS

During the federal fiscal year ending September 30, 2012 Caltrans completed the following Value Analysis activities:

- Thirty-four (34) studies were completed including four (4) non-mandated studies. The total estimated project cost of the thirty-four (34) transportation projects completed was \$1.84 billion. Of the 34 studies, Caltrans performed 23 studies using VA consultant team leaders, and the remaining studies were performed by our local partners.
- An additional seventeen (17) 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 201 proposed recommendations resulting in \$64 million in savings. Table 1 summarizes the results of the VA transportation project studies.
- In addition to the project VA studies, eight 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 six (36) Value Engineering Change Proposals (VECPs), formerly known as Cost Reduction Incentive Proposals (CRIPs), were submitted by contractors and approved by Caltrans resulting in savings of \$3,667,000 (the State shared 50% of these savings).

Table 1: Value Analysis Studies – Federal FY 2011/2012

Study Sponsor	No. Studies	Original Project Costs (\$ Million)	Value Analysis Alternatives				Total Study Cost (x 1000)	Return on Investment	Project Savings	Implementation Rate
			Proposed		Implemented					
			No.	Savings (\$ Million)	No.	Savings (\$ Million)				
Caltrans	23	\$1,301	119	(\$47) *	62	\$29	\$1,045	28:1	2%	52%
Local Agency	11	\$541	82	\$135	28	\$35	\$399	88:1	6%	34%
Total	34	\$1,842	201	\$88	90	\$64	\$1,444	44:1	3%	45%

* District 8 had several studies that proposed large increases in cost in exchange for increased performance. Many of these proposals were not implemented.

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 **45%**. 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 %
Planning	2	50	19	2
PA&ED	17	52	51	4
Early PSE	7	49	10	1
Late PSE	8	24	2	0

Table 3 shows a comparison of results by District. District 8 completed the most studies with 10 last year. District 7 had the highest return on investment with 159:1. District 4 had the highest implementation rate with 83%. District 2 had the highest average cost savings with 16 percent.

Table 3: VA Study Results by District

District	# of Studies	Implementation Rate (%)	ROI	Avg. Project Savings (%)
1	0	0	0	0
2	1	29	133	16
3	1	83	-28 **	-7
4	7	34	72	3
5	2	50	25	2
6	1	50	6	1
7	5	67	159	9
8	10	39	33	4
9	0	0	0	0
10	0	0	0	0
11	3	71	51	6
12	4	53	15	2
Statewide Totals	34	46	126	6

** District 3's project had a minor increase in cost by including seismic steel column casing and changing the traffic handling plans to allow 24 hour lane closures. The impact decreased the construction schedule by 125 days, and improved the LLC by \$9.5 million. This created a value added improvement of 91%.

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 (RW). These differ slightly from Caltrans' standard performance measures. Caltrans includes Maintainability and measures Local Operations and Mainline Operations separately. We also capture RW impacts through Land-use and Environmental. This was a new category and will be captured differently in the future.

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 23 alternatives improving Traffic Operations, 21 alternatives improving Environmental Impacts, and 44 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	1	2	1	0
3	0	0	0	3	0
4	0	11	6	4	0
5	0	1	1	1	0
6	0	1	0	1	0
7	0	4	8	12	0
8	0	0	1	14	0
9	0	0	0	0	0
10	0	0	0	0	0
11	0	2	1	7	0
12	0	3	2	1	0
Total	0	23	21	44	0

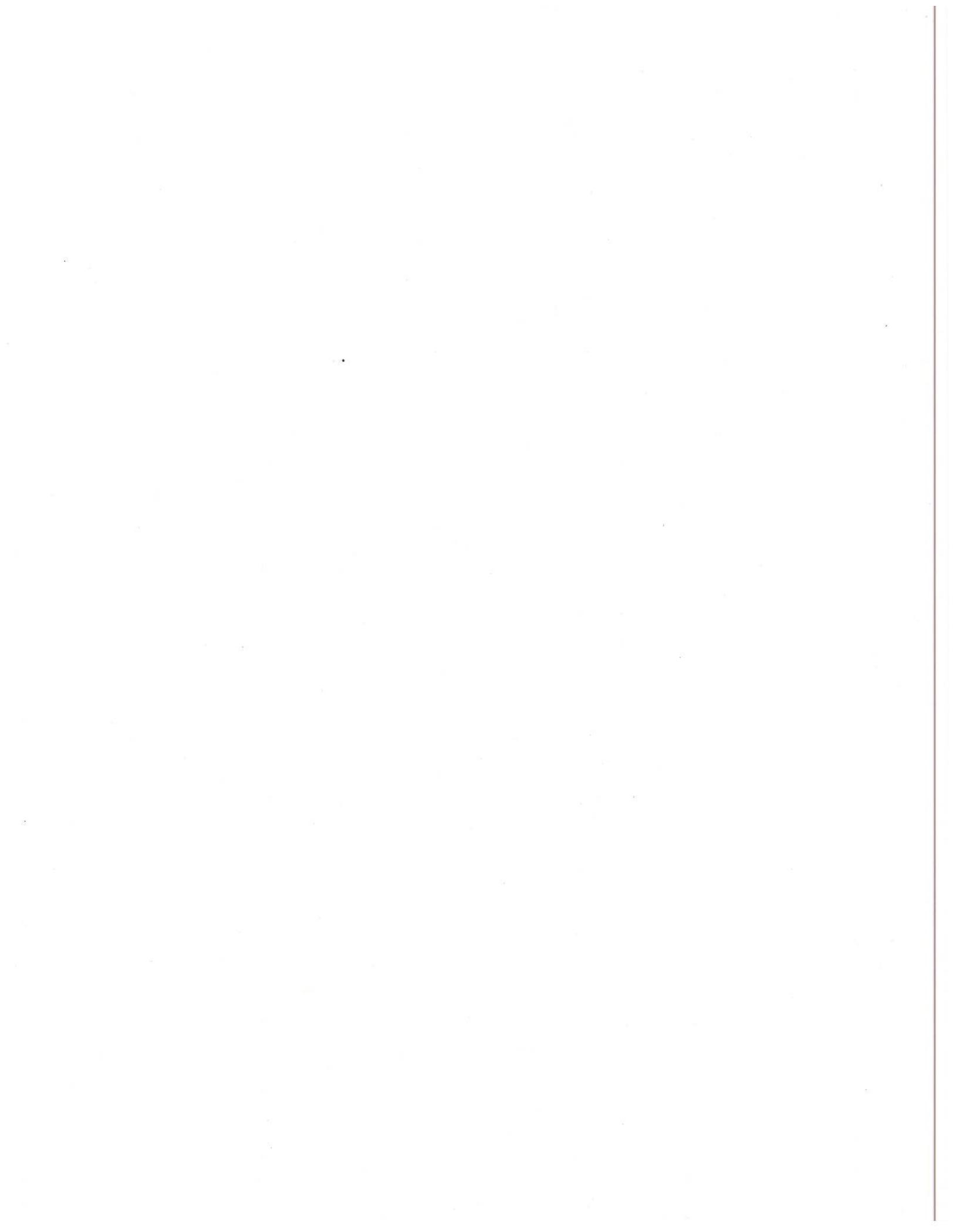
OTHER VA PROGRAM ACTIVITIES

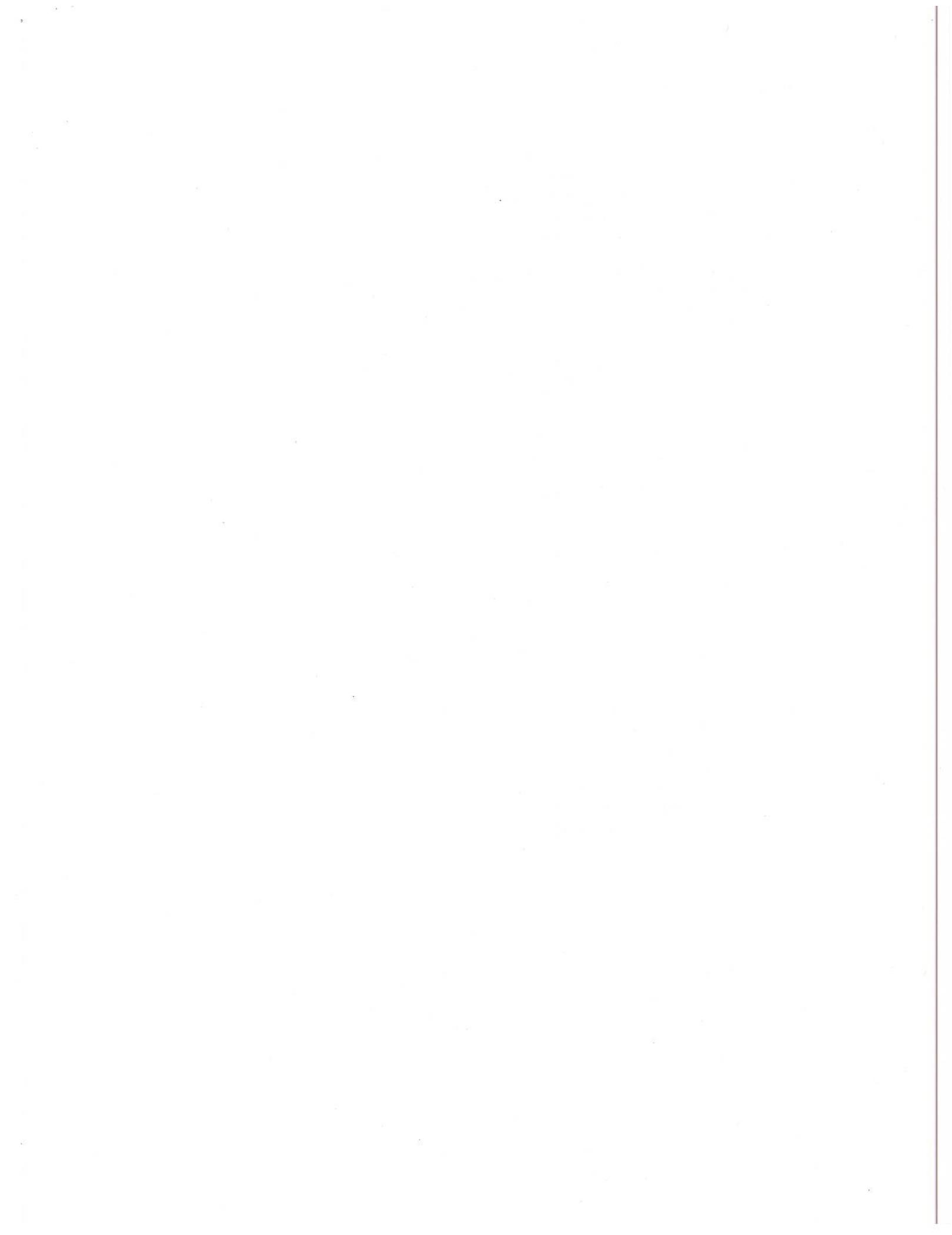
Effective October 1, 2012 new federal legislation, Moving Ahead for Progress in the 21st Century (MAP-21), made changes to the existing Value Engineering/Value Analysis mandate. The new federal mandate doubled the existing cost threshold from \$25 million to \$50 million on projects on the National Highway System (NHS) receiving federal assistance. It also doubled the bridge project cost 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.

It's important to Caltrans to engage with other DOT professionals to share ideas, develop policies, best practices and lessons learned from our counterparts across the nation. The HQ VA program is very active in the AASHTO VE Technical Committee. Troy Tusup, VA Program Manager presides as the Vice Chair on the AASHTO VE Technical Committee. Troy is working with AASHTO committee members on planning the upcoming 2013 AASHTO Value Engineering Peer Exchange Workshop.

Office of Inspector General (OIG) Audit on American Recovery Reinvestment Act (ARRA) Projects was completed to evaluate whether the ARRA projects complied with the federal regulations and mandates. The report found "that Value Engineering (VE) studies were not done on 10 projects in seven states and the District of Columbia (or just under a third of the total projects examined for this audit)." Five of the projects included in the audit were from California. OIG found that all required VA Studies were completed on these projects. The Audit details can be found at:

<http://www.oig.dot.gov/sites/dot/files/FHWA%20Oversight%20of%20ARRA%20High%20Dollar%20Projects%5E11-14-12.pdf>





PROCESS STUDIES

The HQ VA program along with the Districts and Divisions utilized the VA process to initiate eight process studies to streamline and improve the way Caltrans does business. Many of these process studies were directly in response to the Caltrans Program Review last year. Common themes of these studies were to streamline delivery by eliminating multiple reviews and approvals, and take decision making to the lowest responsible level.

The following are the titles of these VA process review efforts. Many studies are continuing to work out the details. HQ VA anticipates conducting a few more process studies in the upcoming year. Once complete, the VA program will summarize these efforts for future usage.

- Facility Improvement Team/Asset Management
- Rail Road Process
- Transfer OE work to Districts
- Streamline Advertising to Award time
- Right of Way Cost/Benefit analysis
- Transportation Planning
- Electrical Engineering Functions
- HQ Design Role and Delegation

Last year the Value Analysis Program delivered its first training classes on "How to be an Effective Team Member" this one day course was utilized in Districts 3, 6, 7, and 8. There were 74 employees trained.

Along with the in-house training, the HQ VA program also engaged in a FHWA training webinar last October. 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 department of transportation perspective. Over 75 attendees from around the Nation attended and the webinar will soon be posted to both the FHWA and VA Program websites.

AWARDS

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

Caltrans Award: 2012 District VA Coordinator of the Year

District 8, Anthony Robinson 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.

Anthony's leadership has taken the VA program to the next level in District 8. Over the past year, Anthony has managed 10 project studies. Congratulations to Anthony and the entire District 8 staff from the HQ VA program.

Caltrans Award: 2012 E. Darwin Spartz –Excellence in Value Analysis

HQ Division of Design Chief, Terry Abbott was awarded the "E. Darwin Spartz - Excellence in Value Analysis" Award, which recognizes the excellent application of VA within Caltrans.

Terry's contributions to the VA Program within Caltrans have been at a very high level for over 20 years. He has been a VA team member, Branch Chief of the VA Program, and has sponsored many VA study efforts. Terry's vision for VA went well beyond the project level and looked at the processes and procedures that could be improved by the application of VA. His leadership led to the development of VA performance measures which has evolved into what today is the "Value Metrics" process integral to the Caltrans VA Process. Today, with Terry's leadership, Caltrans continues to use VA not only as an integral part of the project delivery process, but also to help Caltrans' management address critical issues facing the organization.

Caltrans Award: Study of the Year Award

District 7 and its local partners from the Cities of Industry, City of Walnut, the Los Angeles County Metropolitan Transportation Authority, and the Alameda Corridor - East (ACE) Construction Authority Board has won the FHWA/Caltrans "Value Analysis Study of the Year" Award for 2012. District 7's ACE Fairway Drive Grade Separation was selected for its outstanding performance. The implementation of the four VA alternatives offers over \$13 million in project cost savings (11%) while increasing performance by 40%. This results in an overall value improvement increase of 69%.

Although the savings is great, there are much more award winning benefits to the implemented improvements. Adjusting the railroad profile made a significant impact to a local fast food restaurant, environmental ground water improvements, and increased traffic operations. Properly applying the VA tools increases the study's chances for success. Quantifying the performance benefits easily informs stakeholders and decision makers on the impact of the improvements.

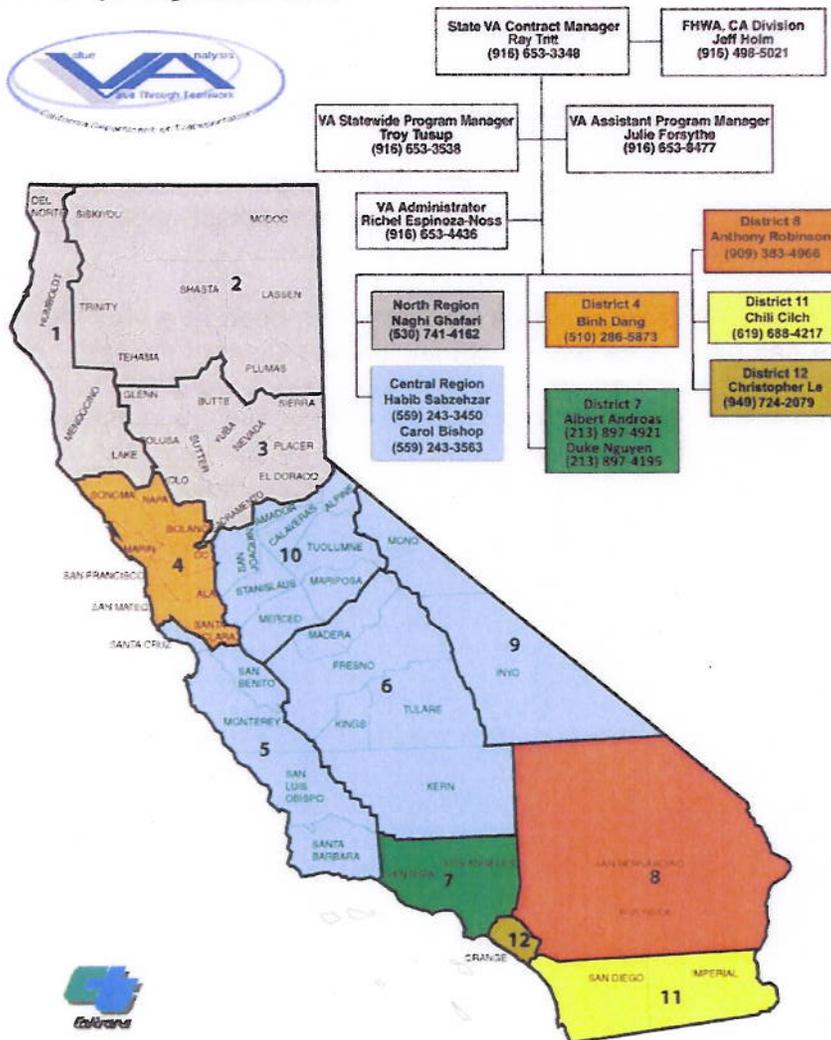
VA PROGRAM ORGANIZATION

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 EVENTS

- The Value Analysis Program is in the process of updating its website to include revised VA policy (DD-92-R1), brochures, guidance, and frequently ask questions. The VA website can be found at:

Internal Intranet: <http://onramp.dot.ca.gov/hq/design/specproj/value-analysis.php>

External Internet: <http://www.dot.ca.gov/hq/oppd/value/index.htm>

- The Caltrans VA program is working diligently to help many of the HQ Divisions to meet the program review recommendations. The common theme of streamlining delivery by eliminating multiple reviews and approvals, delegating authority to the lowest responsible level, and consolidate HQ divisions with overlapping responsibilities. Many of these process studies will be wrapping up and the Caltrans Executive Board will be reviewing the results for implementing the new statewide strategies.
- The 2013 American Association of State Highway Transportation Officials (AASHTO) Value Engineering Peer Exchange Workshop will be held in Minnesota on July 9 - 12. 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

