

**12. Studies of special merit**

12.1 Study Name:

California Safety Roadside Rest Area (SRRA) System

12.2 Study Description, Comments

The California Safety Roadside Rest Area (SRRA) system is a well-planned and maintained system of attractive and safe places where travelers restore their energy and driving alertness, gather information, and can learn about California's natural and cultural resources. Due to Americans with Disabilities Act (ADA) and California Occupational Safety and Health Administration (Cal/OSHA) mandates, the California Transportation Authority (CTC) directed the Department to bring the system into compliance. The existing rest area structures and sites will be reconstructed to comply with ADA and Cal/OSHA mandates.

Recent bid results for SRRA projects have come in well over the estimated budget. The Department used VA to study all the SRRA sites to develop alternative ways to reduce construction cost while maintaining or improving project quality. Several VA studies were initiated. Seven were conducted in Northern California and five in Southern California.

In the North, the VA teams totaled 465 ideas that focused on five key functions; Comply Requirements, Refresh Public, Allow Rest, Enhance Safety, and Improve Site. Of these ideas, a total of 63 Alternatives were accepted resulting in an estimated savings of \$6.4 million. Additionally, another 10 conditionally accepted alternative will result in another \$1.085 million in savings once resolved.

In the south, the VA teams developed 61 alternative. Of those 61 alternative, 21 were accepted and implemented into the five facilities. The 21 accepted alternative not only saved over \$6 million, but also improved the project's performance by over 20%. The SRRA VA Studies focused on alternatives that would deliver context-appropriate solutions cost effectively, improve durability and safety, and reduce maintenance and life cycle costs.

12. **Studies of special merit**

12.1 Study Name:

Utilities Database Process Study (EA 910076)

12.2 Study Description, Comments

Currently, the responsibility for identification of existing underground facilities is on the project engineer for the specific project. The problem statement identified by the VA team is that the lack of stewardship of subsurface utility information causes inefficiencies throughout the Caltrans project delivery. This causes:

- Inefficient operations
- Untimely and costly project delivery delays
- Lack of coordination and working relationships with outside utilities and other agencies
- Increased safety concerns to workers and the traveling public
- Lack of information stewardship with inconsistent information

There are many issues involved in this process. Many of which involve multiple stakeholders and implementers. The VA team analyzed the process using the VA tools and job plan. Using function analysis and Function Analysis System Technique (FAST) diagramming, the team defined the basic function of this process as Coordinate Utilities. Key secondary functions are Communicate Needs, Identify Conflicts, Obtain Data and Identify Players. Analysis of the functions intended to be performed by the project helped the team focus on the purpose and need of the project and, consequently, how to craft alternative concepts that would provide the required functions. Specific performance criteria were developed in cooperation with the designers and stakeholders. These criteria were weighted, using a paired comparison approach, which resulted in the criteria used to evaluate ideas and alternative concepts.

The Project Development Team (PDT) identified the following performance criteria as essential to the success of the project:

Schedule, Cost of preparation of utility layout sheets, Amount of standardized utility data archived, the Ability to estimate accurately and early

Results of the VA Study:

The VA team developed 5 alternatives for improvement of the process. The alternatives related to two key areas of concern, develop database application and create a utility engineering unit for each Caltrans District. All of the alternatives were accepted for further processing.

**12. Studies of special merit**

12.1 Study Name:

LA I-5 HOV Improvement Corridor Study

12.2 Study Description, Comments

Caltrans is currently planning three separate projects that are all part of a series of improvements to construct HOV lanes between SR 134 and SR 118 on I-5. This VA Study focused on evaluating and developing a comprehensive construction staging plan and schedule for these three projects to serve as a basis for identifying alternative concepts that could be implemented to reduce the project schedule and/or reduce

construction risks. The proposed improvements will construct one HOV lane in each direction on I-5 between SR 134 and SR 118 for a total of 20.5 kilometers and is divided into three projects, having a total combined value of approximately \$657,877,000.

Six VA alternatives were accepted, resulting in a cost increase of \$2,250,000 and performance improvements of 34%. Two of the accepted VA alternatives increased initial cost by \$2,500,000, but resulted in significant operational improvements. Furthermore, the acceptance of VA Alternative 2.2, which accelerates the construction of the Union Pacific Railroad (UPRR) and Metrolink relocation, will significantly reduce the schedule.

Three additional VA alternatives were conditionally accepted, which will result in additional savings of over \$67,000,000 if approved. Much of these savings will be achieved through repackaging the contracts into a single mega-project which the construction consultants on the VA team say will be realized based on the anticipated labor market at the time of construction.