

12.

Studies of special merit

12.1 Study Name:

Lake Tahoe Environmental Improvement Projects VA Study

12.2 Study Description, Comments

The Lake Tahoe Environmental Improvement Program includes a multitude of projects intended to improve water quality, and comply with a variety of regulatory mandates in the Lake Tahoe Basin. This VA Study focused primarily on thirteen (13) Caltrans projects (11 of which are over \$25 M).

The study was assembled to determine whether the projects could be built as currently scheduled, or determine how they might best be constructed, as well as develop coordination and communication strategies to include all the local stakeholders.

The original schedule had nine of the thirteen Caltrans projects running concurrently, and some overlapped the ends or beginnings of others (including local construction projects).

The VA team developed a "Proposed Schedule, Staging, and Traffic Impacts" document to illustrate how all of the Caltrans and local projects considered might be built with the least amount of disruption. To facilitate implementation of the Proposed Schedule, the team developed seventeen VA alternatives, eleven of which were accepted for implementation; the remaining six VA Alternatives were conditionally accepted.

In-depth analysis relative to Caltrans and local projects was possible largely due to the full-time participation of the team members representing the Counties of Placer and El Dorado, the City of South Lake Tahoe, Nevada Department of Transportation and the Tahoe Regulatory Planning Agency (TRPA). Because of the full-time participation, consensus was built on many alternative which improved the deliver of the project. Such alternatives included extending the construction season, better traffic handling, cooperative agreements, and public outreach.

12.

Studies of special merit

12.1 Study Name:

I-680 Pavement Rehabilitation Project in Contra Costa
(EA 447001)

12.2 Study Description, Comments

This project consists of pavement rehabilitation for the freeway corridor I-680 in Contra Costa County from Alcosta Blvd. to Rudgear Road. The project includes replacing cracked slabs in lanes 2,3, and 4 and grinding all PCC lanes within the project limits. In addition, lanes 3 and 4 will be retrofitted by installing dowel bars. Supplementary work will also include dig-outs and AC overlay of all ramps within the project limits, relocating E-curb outside the ETW in selected areas, sealing cracks on all ramps, applying fog seal coat on mainline shoulders, and rehabilitating hinge joints, joint seals, bridge approach rail, and patching deck spalls on selected structures. The total estimated capital cost of construction was approximately \$67,000,000.

Purposes and Needs of the VA Study: Develop alternatives to

- a. minimize impact to traveling public
- b. optimize safety for maintenance personnel both during construction and throughout project life
- c. maintain schedule goals through permitting and regulatory process
- d. review handling of traffic during construction
- e. review constructability of structure replacements

Results of the VA Study:

VA team developed 11 alternatives. Seven of them were accepted and the combined cost savings potential is approximately \$30 M (+45%) and project performance increases by 33%. These alternatives include utilizing pre-cast slabs or crack and seat in lieu of slab replacement and eliminating the dowel bar retrofit that is currently under review due to premature failures. There are no conditionally accepted alternatives in this VA study.

12.

Studies of special merit

12.1 Study Name:

I-5 Corridor Improvements in Los Angeles County

12.2 Study Description, Comments

This is one of Caltrans biggest projects. The proposed project consists of widening I-5 from a six-lane highway to a ten-lane facility, including eight mixed-flow lanes and two HOV lanes. The VA study was performed early enough in the project development stage to determine which alignments would be the "preferred" alignment. At the time of the study, several alignments were being considered by the project development team (PDT) including a twelve-lane alternative. The present cost of the baseline (10-lane) alternative is about \$595 million, with a price escalation figure of 924.2 million due to right-of-way and construction cost.

Results of the VA

Six of the fourteen alternative were accepted by the PDT. Many of the alternatives will reduce right-of-way impacts and construction impacts. The initial cost savings is approximately \$26 million while the performance increased 14%. Nine additional alternatives were conditionally accepted by the PDT and are still under review. Two of the nine have a significant impact on the project. One reconfigures an interchange to reduce right-of-way and improve traffic operations, while the other reduces the stage construction from six phases to four. An additional cost savings of \$75 million will be saved when the alternatives are implemented.

12.

Studies of special merit

12.1 Study Name:

Antioch & Dumbarton Bridges-Geotechnical & Seismic Investigation
Project (EA 1A521K & 1A522K)

12.2 Study Description, Comments

Post earthquake performance of the Dumbarton Bridge (Rte 84) and the Antioch Bridge (Rte 160) are under review. The Department is evaluating the vulnerability of the structures considering different seismic hazards and is estimating Capital Outlay Support costs and schedules to perform additional studies in order to develop an appropriate seismic retrofit strategy. The phase I cost breakdown (prior to the VA Study) was :

Dumbarton Bridge: \$6,305,792

Antioch Bridge: \$5,745,000

Total: \$12,050,792

Purposes and Needs of the VA Study:

This VA study was to analyze the geotechnical and seismic investigation requirements (Phase I) necessary to develop the strategy that would lead to retrofit recommendations for the Dumbarton Bridge and the Antioch Bridge and to provide VA recommendations concerning the pending geotechnical effort.

Results of the VA Study:

Nine VA alternatives were proposed and all nine were accepted. Cost saving \$2,350,000 (+20%) and 28% increase in performance.

There are no conditionally accepted alternatives in this VA study.