

Value Analysis Study Report



District 8 and District 11 Safety Roadside Rest Area Study Summary Results

**Contract No. 53A0094
Task Order No. 536**

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Prepared by

Value Management Strategies, Inc.





Value Management Strategies, Inc.

“Value Leadership”

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Date: June 18, 2007

To: Troy Tusup, Project Manager

Subject: Final Value Analysis Study Report (Task Order 536)
Rest Area Study Results

Value Management Strategies, Inc. is pleased to transmit this Value Analysis Summary Study Report. Per your request we have incorporated the requested changes. Please let us know if you would like any further clarifications. If you have any questions or comments concerning the report, please contact me at (206) 901-9557.

We look forward to working with you in the future.

Sincerely,

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EXECUTIVE SUMMARY

The State of California's 87-unit Safety Roadside Rest Area (SRRA) system was constructed between 1958 and 1984. Due to funding constraints California Department of Transportation (Caltrans) deferred major capital improvements at the rest areas between 1984 and 2000 resulting in a severely deteriorated system. In 1999, due to looming ADA and Cal/OSHA mandates Caltrans began developing projects to bring the system into compliance.

This report summarizes two Value Analysis (VA) Studies on one District 8 and three District 11 Safety Roadside Rest Area (SRRA) projects. The subjects of the studies were the Valley Wells SRRA (08-0A6401), Buckman Springs SRRA (11-243200), Aliso Creek SRRA (11-261401), and Sunbeam SRRA (11-261500). The Sunbeam SRRA project includes work at the Two Rivers SRRA. The three day District 8 study dates were January 30, 31, and February 3, 2006. The seven day District 11 study dates were August 28-31, 2006 and October 2-4, 2006.

The primary focus of these studies was to identify ways to control construction costs while maintaining or improving project quality. Recent bids for these projects have been well over the estimated budgets. The VA Team's construction cost estimates of these projects were 40-50% higher than the Caltrans estimates, with the exception of the Sunbeam SRRA, which was 93% higher. The following reasons were cited as causes for the high bids: rapid escalation in construction cost, remote locations, strong bidding climate resulting in contractors being able to pick and choose projects, and the type of work performed on the contracts required using contractors that do not typically seek Caltrans work.

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.

Proposals developed for the SRRA projects generally fall into one of the following categories:

- ◆ Revised layouts including unisex toilets, ganged sinks, etc.
- ◆ Design changes to accommodate remote location construction.
- ◆ Contracting strategies considering the type of project and location.
- ◆ Material changes to reduce cost and/or improve durability.
- ◆ Alternative concepts to deliver context-appropriate solutions.
- ◆ Scope refinements to eliminate either non-essential work or work that could be performed outside of the construction contract.

The results of the VA Studies are summarized below:

Valley Wells SRRA – Fourteen alternatives were accepted resulting in cost savings of ~\$3,000,000. These alternatives result in a new design approach to meet the project's context appropriate needs and promote the use of materials and construction techniques that can be used to construct the facility more cost effectively.

Aliso Creek SRRA – Two VA alternatives were accepted resulting in a cost savings of \$1,300,000 and a value improvement of 23%. The alternatives simplified construction, and minimized impacts during construction while controlling first cost.

Buckman Springs SRRA – Five VA alternatives were accepted resulting in a cost savings of \$1,252,000 and a value improvement of 34%. The accepted alternatives increased attractiveness to bidders by closing the rest area during construction, improved functionality by increasing the flexibility of spaces and right sized the structures.

Sunbeam SRRA – One VA alternative was accepted for a cost savings of \$466,000 and a value improvement of 8%. Due to the advanced stage of design and the need to maintain the schedule there were limited options for implementation of VA alternatives at Sunbeam.

VALUE ANALYSIS STUDY SUMMARY SRRA

INTRODUCTION

The State of California's 87-unit Safety Roadside Rest Areas (SRRA) system was constructed between 1958 and 1984. More than 100 million visitors use the system annually. Most rest areas receive between one and six million visitors each year. Due to funding constraints California Department of Transportation (Caltrans) was directed to defer major capital improvements at the rest areas between 1984 and 2000. This support level resulted in a severely deteriorated system. In 1999 due to ADA and Cal/OSHA mandates Caltrans was directed to develop projects to bring the system into compliance. Caltrans identified rest area system needs and began programming restoration projects beginning in the 2000 SHOPP. The total cost for these compliance projects is estimated to be \$136 million.

This Value Analysis (VA) Study Summary Report summarizes the events of two VA Studies conducted by Caltrans and facilitated by Value Management Strategies, Inc. The subjects of the studies were the following Safety Roadside Rest Areas (SRRA) in Southern California: District 8 Valley Wells SRRA and District 11's Buckman Springs SRRA, Aliso Creek SRRA, and Sunbeam SRRA. The District 8 study occurred in early 2006 followed by the District 11 study in late summer-fall 2006.

The primary focus of these studies was to identify ways to control construction costs while maintaining or improving project quality.

BACKGROUND: CALIFORNIA'S VISION FOR THE REST AREA SYSTEM

Caltrans wishes to launch a program that will bring California's SRRA system up to world-class standard and takes maximum advantage of California's dynamic and diverse environment, technology, tourism, history, and culture. The program envisions a system that is far more than a necessary, comfortable stop for weary travelers – though safety will remain its primary function. The rest area system of the future will serve as:

- ◆ An attractive, comfortable place for travelers to rest for their own safety and that of other travelers.
- ◆ A “welcome mat” for state and regional tourism, encouraging visitors to take advantage of cultural, historic, natural, and scenic attractions.
- ◆ A boon to the local and regional economy by directing the motorist off the highway to local communities.
- ◆ A highway feature contributing to efficient movement of freight commodities by providing truck stopping opportunities that are responsive to the needs of the goods movement industry and their customers.
- ◆ A showcase for environmentally sustainable design and management practices and cutting-edge technology.
- ◆ A demonstration of cost-effective partnerships among public agencies and between the public and private sectors.

PROJECT DESCRIPTIONS

This Value Analysis (VA) Report summarizes the events of two VA Studies conducted by Caltrans District 8 and District 11. The subjects of the studies were the following SRRAs in Southern California:

District 8	Valley Wells SRRA	(EA 08-0A6401)
District 11	Buckman Springs SRRA	(EA 11-243200)
	Aliso Creek SRRA	(EA 11-261401)
	Sunbeam SRRA	(EA 11-261500)

On the following page, Table 1 – SRRA Project Summaries summarizes the projects as presented to the VA Teams and the implemented results of each VA Study. Detailed discussions of the alternatives are included in Sections 4 and 5 of this report.

PROJECT DESCRIPTIONS (CONTINUED)

Table 1 SRRA Project Summaries

EA	SRRA NAME	RTE	NO. OF UNITS	PROJECT CONFIGURATION ¹	PROGRAMMED SHOPP AMOUNT AT TIME OF VA ²	2006 SHOPP AMOUNTS	ESTIMATED CONSTRUCTION COST	ACCEPTED VA SAVINGS	TOTAL IDEAS	VA ALTS	ACCEPTED ALTS	CA ³	CA SAVINGS
EA 0A6401	Valley Wells	I-15	2 (NB & SB)	NB Men - 6 toilets, 6 urinals; Women - 14 toilets, 2 family-assisted restrooms; 1 CHP office with toilet, 1 VSR, 1 MCR ⁴ SB Men - 6 toilets, 6 urinals; Women - 14 toilets, 3 family-assisted restrooms, 1 CHP office with toilet, 1 VSR, 1 MCR	\$6,080,000 (FY 06/07)	\$7,862,000 (FY 06/07)	\$9,989,000 ⁵	\$3,014,000	40	17	13	1	\$98,000
EA 261500	Sunbeam ⁶	I-8	2 (EB & WB)	WB Men - 8 toilets/urinals; Women - 10 toilets, 1 family-assisted restroom; 1 CHP office with toilet, 1 VSR, 1 MCR (Eastbound-Sitework only)	\$2,628,613 (FY 08/09)	\$3,360,000 (FY 06/07)	\$5,063,000	\$466,000	113 ⁷	14	1	0	0
EA 243200	Buckman Springs	I-8	1	Men - 4 toilets, 4 urinals, 4 sinks; Women - 8 toilets, 4 sinks, 1 family-assisted restroom; 1 CHP office with toilet, 1 VSR, 1 MCR	\$2,800,000 ⁸ (FY 08/09)	\$2,884,000 (FY 08/09)	\$4,229,000	\$1,252,000	111 ⁹	15	5	0	0
EA 261401	Aliso Creek	I-5	2 (NB & SB)	NB Men - 9 toilets, 7 urinals, 8 sinks, 1 family-assisted restroom; Women - 15 toilets, 9 sinks; 1 CHP office with toilet, 1 VCR, 1 MCR SB Women - 19 toilets, 11 sinks; Men - 9 urinals, 13 toilets, 10 sinks, 1 family-assisted restroom; 1 VSR, 1 MCR	\$5,130,000 (FY08/09)	\$5,130,000 (FY08/09)	\$7,150,000	\$1,300,000	109 ¹⁰	15	2	0	0

¹ Project configuration was as configured at the time of the VA Study.

² SHOPP amounts shown are those approved at the time at the VA Study.

³ CA - Conditionally Accepted

⁴ VSR - Vending Storage Room, MCR- Maintenance Crew Room

⁵ Low bid

⁶ Sunbeam SRRA Project includes work on the Two Rivers SRRA located on Route 111.

⁷ Includes 16 ideas specifically for Aliso Creek SRRA and 97 ideas common for the three SRRA.

⁸ Buckman Springs construction funds reflect approved Project Change Request at time of the VA Study.

⁹ Includes 14 ideas specifically for Buckman Springs SRRA and 97 ideas for all three SRRA.

¹⁰ Includes 12 ideas specifically for Sunbeam SRRA and 97 ideas for all three SRRA.

PROJECT ANALYSIS

As part of the VA Studies the VA Teams reviewed and developed the functions of the SRRA and performance criteria for advancing change. In addition thorough reviews of the construction cost estimates occurred.

Functional Analysis

Using function analysis and Function Analysis System Technique (FAST) diagramming, both VA Teams validated that the projects' design supported the need and purpose identified in each project report. For the District 8 Valley Wells Rest Area project, the team identified *Rest Traveling Public*, *Add Breakroom*, and *Delineate Site* as the basic functions, with key secondary functions as *Improve Facilities* and *Improve Worker Conditions*. The District 11 SRRA VA Team defined the basic functions of the projects as *Meet ADA*, *Relax Public*, and *Minimize Illegal Acts*, with secondary functions of *Attract CHP* and *Improve Durability*.

Analysis of the functions intended to be performed by the projects helped both teams focus on the purpose and need of the project and, consequently, how to craft alternative concepts that would provide the required functions. Overall, *Rest Traveling Public/Relax Public* is the primary basic function of both VA Studies. While each VA Study focused on other key elements particular to each project, other overriding functions applicable to all projects include *Improve Facilities/Improve Durability* and *Improve Worker Conditions/Attract CHP*.

Performance Criteria

The SRRA projects considered the following performance criteria: *Durability*, *Context Appropriate*, and *Capacity*. Other key criteria also considered were *Ability to Attract Bidders* and *Construction in Remote Location*. While these translate into dollars, they were not included in the performance matrix for the District 8 study; rather, they were used as critical factors in the discussion of alternatives.

Cost Estimate

As part of the VA process both studies reviewed the construction cost estimates. The District 8 Valley Wells VA Study occurred after the bid. Construction estimates for the District 11 project were created by the VA Team and indicated that the costs were low. Alternatives to address the increased cost and lessons learned were developed for future projects.

LESSONS LEARNED

The VA Teams identified several key issues that affect all the projects.

- ◆ **Bidding Climate:** The construction boom, while slowing, is still at a very high level resulting in a lack of competition. On the District 8 Valley Wells SRRA project the contractors knew limited competition existed. The Valley Wells Rest Area project has bid twice, undergone a VA Study, and was re-estimated to better reflect the current bidding environment. The three District 11 SRRA projects are under funded based on independent estimates conducted during the VA Study. Three Project Change Requests (PCRs) were initiated during the project report phase. When the VA Study occurred only the Sunbeam SRRA PCR was approved at the District level.

- ◆ Several of the project locations are rural. It is thought that these will be less appealing to contractors because travel distances and the difficulty acquiring local labor and materials.
- ◆ The SRRA projects are not typical Caltrans construction projects. The types of bidders that are skilled in building construction versus transportation and roadway construction do not generally frequent the typical avenues Caltrans uses for publishing bid advertisements.
- ◆ The projects are in metric units, and while typical roadway contractors are accustomed to this, building contractors are not. While there is a cost premium associated with this, it may also have a bigger impact on this project by dissuading potential bidders.
- ◆ Construction Estimates did not accurately reflect current cost due to:
 - The estimates do not reflect current spikes in materials due to Hurricane Katrina and overseas construction.
 - Bidders would have a low percentage of self-performance. For Valley Wells the two bidders that responded are large firms that would do a relatively small amount of work on the project. As a result, there would be a certain amount of money they would need to make to even make it worth their time and to assume the risk and liability for this project.
 - Remote sites which reduce efficiencies
 - The SRRA will remain open during construction resulting in a more complex project.
 - Timing of start of construction. For Valley Wells, mobilization would start within 15 days of award. This placed mobilization in the November/December timeframe which is one of the worst time for contractor mobilization due to holidays and vacations at this time of year.

VALUE ANALYSIS STUDY RESULTS

Proposals developed for the SRRA projects generally fall into one of the following categories:

- ◆ Revised layouts including unisex toilets, ganged sinks, etc.
- ◆ Design changes to accommodate remote location construction.
- ◆ Contracting strategies considering the type of project and location.
- ◆ Material changes to reduce cost and/or improve durability.
- ◆ Alternative concepts to deliver context-appropriate solutions.
- ◆ Scope refinements to eliminate either non-essential work or work that could be performed outside of the construction contract.

DISTRICT 8 PROJECT DESCRIPTION AND VALUE ANALYSIS ALTERNATIVES

INTRODUCTION

The District 8 Valley Wells Rest Area project will upgrade both northbound and southbound Valley Wells Safety Roadside Rest Area facilities on I-15 in San Bernardino County. The proposed work will replace existing comfort stations with new facilities in compliance with ADA requirements. The estimate at the time of the VA Study is \$6,080,000 for the project. In October 2005 the low bid for the project was \$9,989,000, which is 78% over the approved construction funds. In early 2006 a VA Study was held. Fourteen VA alternatives were accepted for a savings \$3,000,000.

PROJECT DESCRIPTION

The District 8 Valley Wells Rest Area project will upgrade both northbound and southbound Valley Wells Safety Roadside Rest Area facilities on I-15 in San Bernardino County. These facilities are severely deteriorated and under capacity. The proposed work will consist of demolishing existing comfort stations, walkways, and site facilities (excluding parking), and replacing those items with new facilities in compliance with ADA requirements. Additional work will include modifications to existing utilities. All work will be performed within the existing right-of-way. The architectural façade will reflect a mining theme, incorporating a concrete simulated aged wood façade, in combination with angular rock and low profile pitched and flat rooflines of metal materials that will blend into the desert environment.

The Engineer's estimate, dated 2005, is \$6,080,000 for the project. The project was advertised using the standard Caltrans bidding process in September of 2005 and no bidders responded. Caltrans utilized a contractor outreach process and re-advertised the project in October 2005. Two bidders responded to the re-advertisement. The low bid was \$9,989,000, which is 78% over the approved construction funds. The results of this second bid prompted Caltrans to initiate the VA Study to assess what could be done to identify options on how to best proceed with this project.

ACCEPTED VALUE ANALYSIS ALTERNATIVES

The District 8 Valley Wells Rest Area project's Implementation Meeting was held on March 1, 2006. Fourteen VA alternatives were accepted for the District 8 Valley Wells Rest Area project, resulting in cost savings of ~\$3,000,000. These alternatives result in a new design approach to meet the context-appropriate needs of the project and promote the use of materials and construction techniques that can be used to construct the facility at this location more cost effectively. Four of these accepted alternatives have no direct cost savings. They would help to increase the number of bidders and provide a more predictable project cost.

Alt. No.	Description	Potential Initial Savings	Performance Change
1.2	Block Exterior Walls of Buildings This concept could be done within the context-appropriate mining town theme, but it would not maintain the theme represented in the original concept. The concept will be done to meet the long-term context-appropriate needs of the project.	\$258,000	N/A
2.0	Use Galvanized Steel with Epoxy Paint Versus COR-TEN The proposed use of COR-TEN is desired to provide a weathered metal appearance to simulate a mining town. COR-TEN is much more expensive and will eventually result in rust stains on the concrete below. Fabricating milled steel, then galvanizing it and providing an epoxy paint coat to simulate the desired appearance of the steel, will significantly reduce project cost and avoid future maintenance issues.	\$250,000	N/A
3.0	Eliminate Color Concrete – Vary Texture for Aesthetic Treatment Use standard grey concrete and vary the surface textures by either sandblasting or broom finishing to provide the three textures desired in the core area, and use a light broom finish on the remainder of the project. With the elimination of integral color concrete a single pour is possible, with the desired pattern soft cut into the concrete. Reinforcement is also simplified, as the dowels are eliminated. In addition, the column connections at the pavement are changed from being imbedded into the concrete to a bolt-on connection. The integral color concrete was originally selected for its glare reduction properties, and it delineates the design. Varying the texture and using aggregate indigenous to the area will provide similar effects. Due to the remote site and limited suppliers, maintaining quality control of the color is expected to create construction issues, which this alternative would alleviate.	\$250,000	N/A
4.0	Reduce Sub-Base Section Under Concrete from 12 inches Under Building and 8 inches Under Concrete Walkways to 5 inches – Add Vapor Barrier The soils in this area should permit this change without increasing heaving potential. The soils report needs to be reviewed to confirm the viability of this change. If local aggregate can be used for this application, cost savings will be further increased.	\$98,000	N/A
5.0	Reduce Seating Walls on Perimeter Maintaining just the seating walls at the core area, near the CHP Building, and eliminating the seating walls on the perimeter, would reduce ~120 meters of seating walls. This is simply a cost reduction item, and there would be some loss of desired functionality at the site. These walls could be added in the future as part of a separate project.	\$215,000	N/A

Alt. No.	Description	Potential Initial Savings	Performance Change
6.0	Revise Roof System Using the galvanized structural steel attached to imbeds in the CMU walls and covering the structural steel with galvanized decking will yield an acceptable alternative to the construction while maintaining the desired look.	\$132,000	N/A
7.0	Use English Units on Drawings and Specifications Building contractors that should bid on this project are not accustomed to metric units. Caltrans analysis had indicated a 3-6% cost premium for metric designs on highway projects. While some highway contractors have gotten used to metrics, this is a building project, and fewer building contractors are accustomed to using metric units. As a result, the team assumed a 6% cost premium for this item. With this project the actual premium could be higher. More importantly, however, is the fact that the use of metric may have discouraged many potential bidders from even making the effort to submit a bid. While there are concerns regarding the actual cost impact on the project, as this is the value used in the baseline cost estimate developed by the VA Team, using this value to represent the savings is appropriate.	\$336,000	N/A
8.0	Identify Potential Contractors that Should Bid on this Project The advertisement and outreach efforts to date have not really reached the type of contractor best suited for this type of work. The large contractors that bid on this project knew that Caltrans was desperate and needed bids; therefore, their bids appear to be inflated, as they would probably contract out a majority of the work, and their mark-ups are probably high to make it worth their time to deal with the issues of this relatively small project. The contractors that could provide the best bids for this type of work do not look at the Caltrans website for projects; rather, they use the traditional trade bulletins including Reed, Dodge, and McGraw Hill. Bidding should be limited to A and B contractors only. While no cost savings is calculated for this item, the action identified in this alternative is necessary to close the gap between the Caltrans estimate and the bids that have been received, and ultimately deliver the project within budget.	Improve Bids	N/A
9.0	Create Additive Bid Items Identify a minimum project that would provide a complete and usable restroom facility and access to comply with the ADA requirements, which Caltrans would be comfortable with in that it could be built within budget. Develop a series of additive bid packages on which the contractor would develop separate bids. Based on the bids received, Caltrans would be able to select as many of the additive bid items as possible within the budget amount of the project. This process of using additive bid items is widely used by government agencies in their construction contract bid process. These agencies include the Naval Facilities Engineering Command, GSA, and the Corps of Engineers, who all contract extensively in this area, and the contractors who are familiar with this process. The team checked and determined that Caltrans can use this process; they just need to coordinate it with the OE office.	Improve Bids	N/A

Alt. No.	Description	Potential Initial Savings	Performance Change
10.0	<p>Accelerate Project to Minimize Escalation Impact</p> <p>Projects throughout the region have been escalating at much higher rates than typical in recent years. This is due to the fact that worldwide factors are controlling the cost of critical products such as steel, concrete, and petroleum. In addition, the impacts of Katrina on the building market supplies are still impacting costs. While some of these factors are leveling off, the VA Team estimated that delaying the project to next the fiscal year could increase project cost by ~15%. It is difficult to quantify projected savings, but it is recognized that any delay will result in further escalation. For that reason, no credit for cost savings will be taken at this time.</p>	\$0	N/A
11.0	<p>Strategically Schedule Contract Advertisement</p> <p>Modify the standard Caltrans bid process to include avoiding mobilization dates in the November/December timeframe; requiring A and B contractors only, including a delayed start specification to provide more contractor flexibility; and advertising contractor trade bulletins including Reed, Dodge, and McGraw Hill. These changes to the standard Caltrans process should provide more competitive bids, which would result in lower bids.</p> <p>While no cost savings are calculated for this item, the action identified in this alternative is necessary to close the gap between the Caltrans estimate and the bids that have been received, and ultimately deliver the project within budget.</p>	Improve Bids	N/A
12.0	<p>Reduce Plant Establishment Time to 90 Days – Use Caltrans Maintenance Beyond that Time</p> <p>The standard one-year plant establishment time at this site has several implications on the project cost and bidders. Due to the remote location of this site, contractors are not going to be interested in returning to this site for plant establishment. In addition, this can impact their bonding time. Both of these factors can discourage potential bidders from participating or cause them to inflate their bids to make it worth their effort.</p> <p>This idea has been further expanded, and all landscaping will be deleted from the project. The area will support just hardscape/rocks and boulders.</p>	\$133,000	N/A
14.0	<p>Make Tables/Trash Receptacles State-Furnished Items (CMAS Contract)</p> <p>Make tables/trash receptacles State-furnished items from the CMAS Contract. Have them delivered to the site and installed after the contractor’s work is complete and before the site is open for use. This provides a small cost savings opportunity by avoiding contractor mark-ups on items that can easily be placed on the site by either Caltrans or the supplier of this equipment directly.</p>	\$40,000	N/A

Alt. No.	Description	Potential Initial Savings	Performance Change
15.0	Minimal Cost Facility The VA Team attempted to identify what would comprise a minimal facility that could be built within the limits of the project budget. This could represent the base bid facility in the procurement strategy, where additive bid items are used. The minimal facility would maintain the restroom, storage, and break room capacity as part of the basic facility and eliminate the following: <ul style="list-style-type: none"> ◆ Context-appropriate finishes ◆ CHP buildings ◆ Picnic shelters ◆ Large canopies ◆ Trash enclosures This represents the loss of several key functional aspects of the project, and it does not support the future Interpretive Center project.	\$1,400,000	N/A

REJECTED VALUE ANALYSIS ALTERNATIVES

Alt. No.	Description	Reason for Rejection
1.1	Use GFRC Planks and Simulated Stone Panels for Aesthetic Treatment	Rejected in favor of Alternative 1.2, which the design team is confident can be developed to meet the context-appropriate requirements of the project.
13.0	Combine TE Project with Reconstruction Project	Due to the special funding of TE projects, it is not advisable to combine these projects.
16.0	Separate Projects – Northbound and Southbound	While one project would be assured of delivery within budget, the total cost for both projects would be increased.

DISTRICT 11 PROJECT DESCRIPTIONS AND VALUE ANALYSIS ALTERNATIVES

INTRODUCTION

The District 11 Safety Roadside Rest Area (SRRA) VA Study encompassed three projects: Sunbeam and Buckman Springs Safety Roadside Rest Areas on I-8, and the Aliso Safety Roadside Rest Area on I-5. All three of these projects sought to increase capacity and maintain or improve durability, while integrating context-appropriate solutions. A VA Study was held in fall of 2006 to improve the performance of the project.

PROJECT DESCRIPTIONS

The focus of the VA Study on the three SRRA was on the Stage 1 work. Stage 1 work is that work necessary for the ADA upgrade, the CAL/OSHA requirement of separate air conditioned crew quarters, and the integration of the California Highway Patrol (CHP) office. In addition, work in Stage 1 shall be work that is more cost effective to be performed while other work is occurring. Typical work of this type is support for the Department of Rehabilitation, Business Enterprise Program (BEP) with the construction of a storage room for vending supplies and a suitable location for vending machines with electrical power.

Sitework at all three sites will include modifications to pavements, site furnishings, site lighting and signage to meet ADA and safety standards.

Sunbeam SRRA

The Sunbeam SRRA is composed of two separate rest areas located in Imperial Valley approximately six miles west of El Centro on I-8; both are accessed directly from the interstate. As part of the Sunbeam Rest Area project, some minor work consisting of constructing a screen wall for dumpsters will occur at the Two Rivers Rest Area on Route 111. Work in the eastbound rest area is limited to sitework to respond to NPDES requirements for erosion control and sidewalks will be added and repaired to improve the functionality of the area.

The current plans for the westbound SRRA call for a complete overhaul of the westbound rest area. The existing restroom building will be renovated into a crew area, storage area, and overflow women's toilets. A new building will be constructed to house men's and women's restrooms, a family-assisted restroom, a CHP office with a separate toilet, and a vending area. The total capacity of the westbound rest area will be eight men's toilets and urinals and 10 women's toilets. The style of the renovated rest area will be contextually tied to the local area by utilizing a Spanish Mission motif with red tile roofs.

At the time of the VA Study the escalated cost of capital improvements was authorized at \$2,628,613. At that time the schedule for the project stated it will be Ready to List (RTL) in January 2008 with construction starting in April of that year. Construction was anticipated to last 10 to 12 months. The construction plan was for the rest area to remain open by phasing the construction. The scenario constructed the new building while keeping the existing facility open. Upon completion of the new building, the existing building would be renovated.

Buckman Springs SRRA

The Buckman Springs SRRA is a single rest area situated in the expanded median of I-8 and serves both eastbound and westbound traffic.

The rest area was originally constructed in 1979. The men's side has four toilets, four urinals, and four sinks. The woman's side has eight toilets and four sinks. At the time of the VA Study, the plans called for a complete overhaul of the rest area. The existing buildings would be demolished and two new buildings would be constructed to house men's and women's restrooms, a CHP office with a separate toilet, and a vending area. The overall capacity of the Buckman Springs Rest Area would be increased by the construction of a family-assisted restroom. The general toilets, sinks, and urinals would be replaced on a one-for-one basis. The style of the renovated rest area would be contextually tied to the local area by utilizing a mining motif.

At the time of the VA Study the escalated cost of capital improvements was authorized at \$2,800,000, based on an approved Project Change Request. The schedule for the project was RTL in April 2008, with bid openings in June or July of 2008. Construction was anticipated to last six months. The plan called for the rest area to remain open by phasing the construction. Conversations on the feasibility of closing the rest area were ongoing at the District level.

Aliso Creek SRRA

The Aliso Creek SRRA is composed of two separate rest areas located on northbound and southbound I-5 about six miles north of Oceanside; both are accessed directly from the interstate. On the southbound side, Buildings 1 and 2 would be renovated and Building 5 will be constructed new. On the northbound side, Buildings 2 and 3 would be renovated and enlarged. The Aliso Creek SRRA was constructed in three stages between 1966 and 1973. The southbound rest area is a grassy area with two flat-roofed brick buildings (Buildings 1 and 2).

At the time of the VA Study the following changes were planned for the southbound rest area. Building 1 would be expanded to include a maintenance crew area with storage, and the number of women's toilets would be increased from four to six. The men's facilities would be increased by one urinal and one toilet. Building 2 would be expanded and the number of women's toilets increased by one. In addition to the standard site upgrades, sitework on the southbound side included demolition of the existing vending kiosk. Building 5 would be new construction and would include four new women's toilets, three women's sinks, two men's urinals, four men's toilets, and three sinks. In addition, a family-assisted restroom and storage for vending would be constructed as part of Building 5. The exterior of this building would house the new location for vending as well as providing a shade area.

At the time of the VA Study the following changes were planned for the northbound rest area. The northbound work consisted of renovations and additions to Buildings 3 and 4. Building 3 was to be demolished and rebuilt. The general restroom capacity of Building 3 would remain the same; however, the CHP office, family-assisted restroom, crew quarters with separate storage, and a vending storage area would be added to the building. Building 4 would be renovated. The capacity of the women's restrooms would be increased by one toilet and one sink; the men's restroom capacity would increase by one toilet, one urinal, and one sink.

The style of the renovated rest areas would be contextually tied to the local area by utilizing a Spanish motif with red tile roofs. At the time of the VA Study the escalated cost of capital improvements was authorized at \$5,130,000. At that time the schedule for the project defined the project be RTL in August

2008, with bidding in October and November of that year. Construction was anticipated to last 10 to 12 months. The plan called for the rest area to remain open by phasing the construction. The construction scenario of the southbound work constructed Building 5 while keeping the existing facility open. Upon completion of the new building, the existing buildings would be renovated. Work on the northbound portion will be phased.

ACCEPTED VALUE ANALYSIS ALTERNATIVES

Alt. No.	Description	Potential Savings Initial / LCC	Performance Change
4.0	BUCKMAN SPRINGS Eliminate Separate Bathroom for California Highway Patrol	\$76,000	+0%
	As a pilot program the CHP will have access to the family assisted restrooms. The Family assisted restrooms are lockable and allow the protection for CHP staff.		
5.0	BUCKMAN SPRINGS Move Vending/Storage Area from New Building, Vending Kiosk by Others	\$219,000	+0%
	This alternative results in cost saving due to a reduction in the amount of constructed facilities. Utilities will be stubbed to an appropriate location for construction of the vending kiosk and storage by others.		
11.0	BUCKMAN SPRINGS Close Rest Areas During Construction	\$691,000	+0%
	SUNBEAM Close Rest Areas During Construction	\$466,000	
	Allowing the closure of the two rest areas will simplify the projects, increase the likelihood of attracting bidders and may reduce the amount of time to construct. The inconvenience to the traveling public will be minimal since facilities are available in reasonable proximity to the closed rest areas.		
15.0	BUCKMAN SPRINGS Use Existing Parking for ADA and California Highway Patrol and Restripe	\$14,000	-7%
	The slight reduction in the number of public parking stalls by making one of the existing stalls into a CHP parking stall will simplify the construction project and control cost with a minimal loss in performance.		
17.0	BUCKMAN SPRINGS Reduce Work Crew Area and Amenities	\$252,000	+10%
	Reducing the size of the buildings to respond to the appropriate staffing needs will simplify the construction and maintenance of the facility.		

Alt. No.	Description	Potential Savings Initial / LCC	Performance Change
19.0	ALISO CREEK Construct Building 5 First; then Renovate Buildings 1 and 2	\$167,000	+0%
	Revising the order in which the buildings will be constructed will allow the existing facilities to be used during construction of the new facility. Once Building 5 is constructed it is available for use while the existing Buildings 1 and 2 are renovated.		
20.0	ALISO CREEK Simplify the Building Construction and Layout	\$1,102,000	+3%
	Revising the layout and simplifying the construction of the buildings at Aliso Creek will control cost while maintaining function. Although significant redesign of the architecture is required at this time the project is highly schematic in nature. It does not appear that work has occurred in disciplines other than architecture. This alternative leaves the vending kiosk in place rather than demolishing those structures and building new.		

REJECTED VALUE ANALYSIS ALTERNATIVES

Alt. No.	Description	Reason for Rejection
1.0	Use Lightweight Concrete Tile or Fiber/Cement Tile Versus Clay Tile ALISO CREEK BUCKMAN SPRINGS SUNBEAM	The durability of the tiles was not felt to be proven. There was a concern that the appearance was not aesthetically suitable.
2.0	Move Lavatories from Interior Wall to Exterior Wall ALISO CREEK – 12 EACH BUCKMAN SPRINGS – 8 EACH SUNBEAM – 10 EACH	There was a concern that the traveling public would feel that the exterior lavatories did not offer sufficient privacy. There was also a concern that vandalism would increase.
3.0	Provide Durability through Material Selection ALISO CREEK BUCKMAN SPRINGS SUNBEAM	The general feeling was that the current fixtures and finishes that had been chosen would provide sufficient durability without a need to increase the first cost.

Alt. No.	Description	Reason for Rejection
4.0	Eliminate Separate Bathroom for California Highway Patrol ALISO CREEK SUNBEAM	Using the family assisted bathroom as the CHP bath will be piloted at Buckman Springs.
5.0	Move Vending/Storage Area from New Building, Vending Kiosk by Others SUNBEAM	The design is too advanced to accept this alternative.
6.0	Increase Bids by Contractor Outreach, Better Timing, and Organization ALISO CREEK BUCKMAN SPRINGS SUNBEAM	The current process is felt to be sufficient for the project needs.
7.0	Use Unisex Restrooms in the New Buildings ALISO CREEK BUCKMAN SPRINGS SUNBEAM	There was a concern that the traveling public would not care for this idea. There was also a concern that inappropriate behavior would occur in the restrooms.
8.0	Use Vault Toilets for Construction and Leave as Permanent ALISO CREEK BUCKMAN SPRINGS SUNBEAM	Rejected in favor of 11.0.
9.0	Use Pre-Engineered Buildings for Building 5 at Aliso and All Buildings at Sunbeam and Buckman Rest Areas ALISO CREEK BUCKMAN SPRINGS SUNBEAM	There was a concern that the prefabricated buildings would not be sufficiently durable. The cost savings/increase was not able to be quantified.

Alt. No.	Description	Reason for Rejection
10.0	Develop Amenities Within Project Scope ALISO CREEK: NEW CONSTRUCTION AND RENOVATION BUCKMAN SPRINGS: RENOVATE EXISTING STRUCTURE SUNBEAM: RENOVATE EXISTING STRUCTURE	This alternative was developed to match available funds forcing a significant reduction in scope. The District will allocate sufficient funds to construct the project at full scope.
11.0	Close Rest Areas During Construction ALISO CREEK SUNBEAM SRRA ONLY	The Rest Area is too heavily used to close during construction.
12.0	Sunbeam – Use Concrete Masonry Unit Construction in lieu of Insulated Concrete Form Construction	The District feels that piloting the use of the insulated Concrete Form will allow the District to determine future usability.
13.0	Sunbeam – Eliminate Pavilion and Increase Trellis	Due to the extreme desert condition the shade from the pavilion is required.
14.0	Sunbeam – Reduce Project Scope to Exclude Work at Two Rivers and Eastbound Sunbeam and Perform Minor Contract BUCKMAN SPRINGS SRRA ONLY	The District does not have another funding source if this work is not performed under this contract.
16.0	Buckman Springs – Retrofit Existing Structure and Build New Building for Crew and California Highway Patrol	The need to construct a context appropriate structure and the age of the existing structure require this alternative be rejected.
18.0	Buckman Springs – Move RV Dump 24 Feet to Eliminate Congestion and Meet ADA	This is not required to meet the purpose and need of the project.

Alt. No.	Description	Reason for Rejection
ALISO CREEK SRRA ONLY		
21.0	Aliso Creek – Eliminate Plaster from Building Exterior and Paint Grouted Block	There is concern that the aesthetic look of the painted blocks is not appropriate for this SRRA.
22.0	Aliso Creek –Eliminate Vendor Storage Space at Building 3 and 5	Included in Alternative 20.0 which was accepted.