

CALIFORNIA TRANSPORTATION

# Journal

2008 | Issue 1

## STRUCTURE MAINTENANCE AND INVESTIGATIONS: ADVANCING TECHNOLOGY FOR MORE THAN 80 YEARS

2005 GOLD AWARD WINNER – MAGAZINE, STATE INFORMATION OFFICERS COUNCIL  
2006 GOLD AWARD – INTERNAL MAGAZINE, NATIONAL TRANSPORTATION PUBLIC AFFAIRS WORKSHOP  
2007 AWARDS OF DISTINCTION – COMMUNICATOR AWARDS



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Historical San Francisco-Oakland  
Bay Bridge construction photo  
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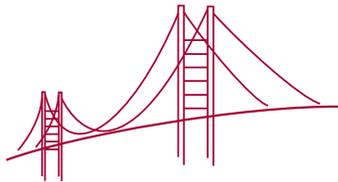
**COVER STORY:** The California  
Highway Commission created  
Caltrans' Structure Maintenance  
and Investigations unit in 1927  
to evaluate the condition of our  
bridges. Now, 81 years later, the  
group of specialized engineers  
is doing much more than that.  
See page 2.



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## *In this issue:*



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*of operation...* **8** *Recycle your*



*interstate...*



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*team preserves Me-Wuk culture...* 

# Message from the Caltrans Director

California taxpayers are right to insist that government operates prudently. For that reason, the California Department of Transportation (Caltrans) has adopted a performance-based approach to doing business, tailored to create an excellent and responsive government organization. Consistent with Governor Arnold Schwarzenegger's vision, Caltrans has striven to become more efficient in order to reform and revitalize California's transportation system.

Key performance strategies are crucial to developing and adopting relevant performance guidelines. The resulting performance measures are used by Caltrans and the California Transportation Commission (CTC) to review projects and allocate funds for Proposition 1B, the \$19.9 billion transportation bond proposed by Governor Schwarzenegger and approved by the Legislature and voters in 2006. The measures are both performance-driven and outcome-oriented.

One successful performance-based outcome was achieved in April when Bay Area traffic came to a screeching halt following a tanker crash on Interstate 80 near Emeryville, impacting connectors on both Interstates 880 and 580. The upper deck collapsed onto the lower deck, closing traffic to both connectors. The impact on Bay Area traffic was significant. Caltrans used an informal bid process to choose a contractor to replace the I-580 span lost in the fire. Then, at the Governor's direction, Caltrans used an incentive-based contract so the work could be done as quickly as possible. Against all odds, the MacArthur Maze reopened to traffic in just 26 days.

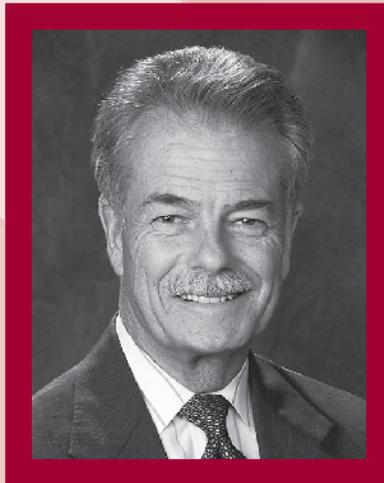
Another successful performance-based outcome was achieved last November when a truck tunnel and bridge on Interstate 5 in Santa Clarita in Southern California reopened more than two weeks ahead of schedule. Again using an incentive-based contract, Caltrans selected a private-sector contractor. Crews worked around the clock in the aftermath of the fiery 31-vehicle crash that had shut down the tunnel October 12 and blocked traffic for hours.

Caltrans has a long history of teaming with other private and government agencies to deliver the state's transportation projects. We have demonstrated that the Department can do more cooperatively than it can do alone. The Department has made a successful effort to accommodate the state's growing transportation needs. As a result, Caltrans has become significantly more efficient and businesslike. It has worked in partnership with other government and private organizations to finish projects more quickly. For example, Caltrans and its construction industry partners have been working to ensure that builders have the increased resources needed to complete projects funded by Proposition 1B.

We have conducted Caltrans/ Construction Industry Workshops and taken action to ensure that builders are "growing" their ability to take on and complete the increased workload, and we are confident these efforts are working. Using a performance-based management approach, Caltrans delivered 100 percent of the 286 projects planned for the 2006-07 fiscal year. Because California did such an excellent job of delivering its projects, Caltrans received an additional \$120 million in federal spending authority for this year.

We've also seen the number of private contractors bidding on advertised projects increase from 3.6 bidders per project in fiscal year 2005-06 to 4.9 bidders per project in fiscal year 2006-07. Increasing the number of bidders generally leads to more competitive bids, which could potentially save Caltrans (and taxpayers) at least \$100 million annually. This is money that can be used to fund additional transportation projects.

By using a performance-based approach to managing the Department and building partnerships with other public agencies and the private sector, Caltrans and the state of California are rebuilding the transportation infrastructure to be more timely and cost-efficient.

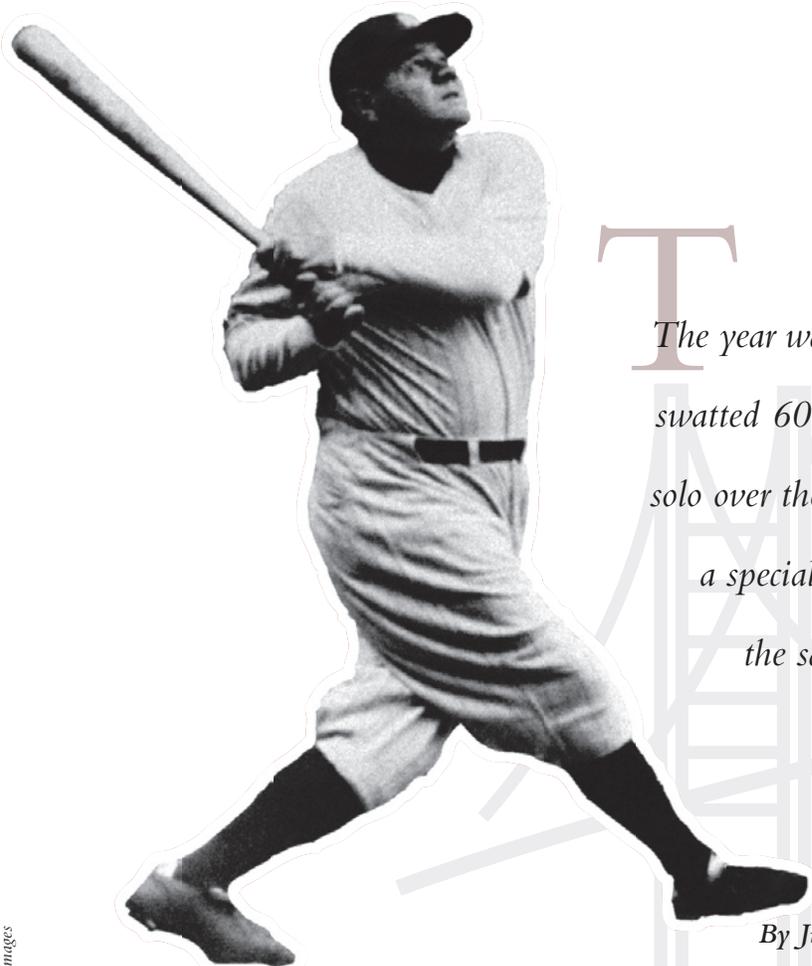


A handwritten signature in black ink that reads "Will Kempton". The signature is written in a cursive, slightly stylized font.

Will Kempton, Director

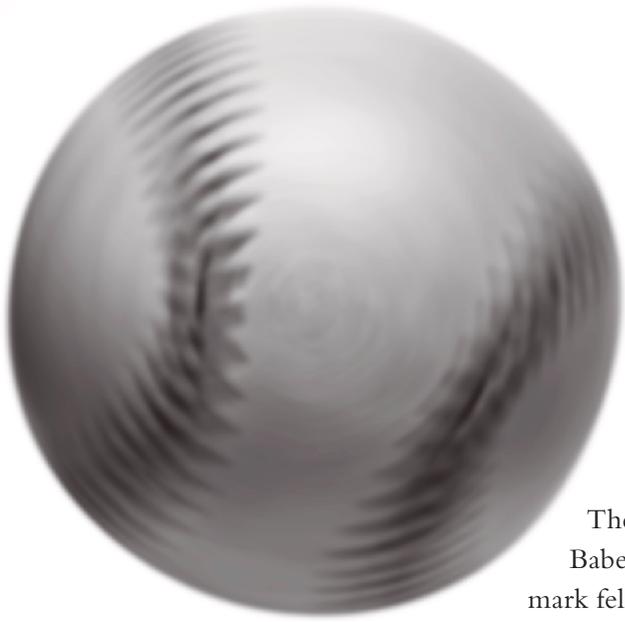


# 80 Years and Still GO



**T***The year was 1927 – a year of milestones. Babe Ruth swatted 60 home runs. Charles Lindbergh flew solo over the Atlantic Ocean. And California created a special branch of engineering experts to ensure the safety and reliability of its bridges.*

*By Jim Drago, Chief, Bridge Maintenance Information*



The Babe's mark fell in 1961 to the

bat of Roger Maris, and air travel over "the pond" became a routine occurrence.

to protect the safety of the traveling public and the financial investment California has in its bridges. That investment is still paying big dividends for the Golden State. More than 24,000 state and local agency bridges in California, many of which have reached or exceeded their design life, each day reliably serve millions of travelers because of the ongoing care provided by SM&I staff and its district maintenance counterparts. More than 160 million vehicle trips

# ing STRONG

California's bridge maintenance program, however, has stood the test of time and today continues to deliver on its mission to provide Californians with a dependable network of bridges carrying traffic and pedestrians over rivers, canyons, railroads, highways and city streets throughout the Golden State.

The faces have changed and the number of bridges has increased, but the mission of Caltrans' Structure Maintenance & Investigations (SM&I) remains the same as it was in 1927 –

are recorded on California's transportation system each day.

"Demand on the transportation system continues to increase, placing more and more stress on our bridges. Through our ongoing inspection and maintenance program, we identify potential problems, make needed repairs and help keep the stream of people and commerce flowing without interruption," SM&I Chief Barton Newton said at an 80th anniversary celebration.

*continued on page 4*



AP Images

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**Top left:** The Yerba Buena Tunnel constitutes the midbay portion of the 8-mile long San Francisco to Oakland Bay Bridge. The 540-foot long tunnel was first bored out of the military and naval reservation island from 1933 to 1935 and then the core was removed. Photo: Moulin Studios, courtesy of Caltrans Transportation Library and History Center.

**Bottom Right:** Caltrans' Structure Maintenance and Investigations engineers inspect each of California's 12,836 state highway and 12,398 local agency bridges at least once every four years.

## A New Day Dawns

In 1927 the California Highway Commission ordered that an investigation be conducted to determine the condition, safe load carrying limits, and other restrictions of each public bridge in the state to develop progress reports with work recommendations.

With that initial investigation, California's bridge maintenance program was born.

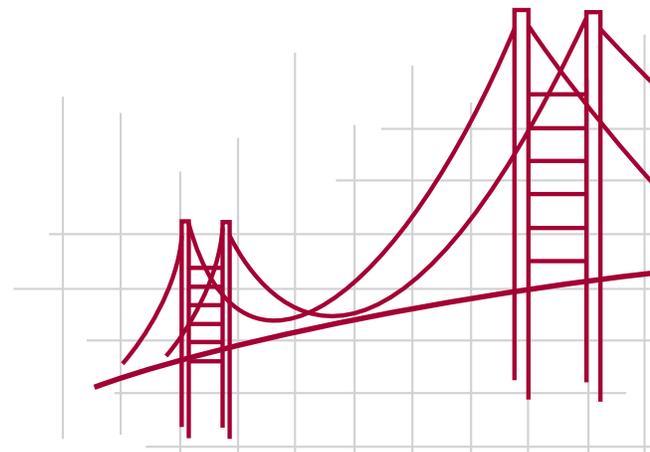
"California's program was unique because it required that inspection of the state's structures be done by engineers with an expertise in bridges," Newton said. "And it remains that way today."



Bridge inspections and engineering investigations are performed by SM&I staff in accordance with federal regulations on more than 12,836 state highway and 12,398 local agency bridges.

SM&I staff make structure repair recommendations, determine the safe load carrying capacity of all bridges,

review and approve all encroachment permits and air space lease proposals involving structures, and program bridge maintenance projects. SM&I staff deliver plans, specifications and estimates for bridge maintenance and rehabilitation projects and coordinate the protective coating work on more than 800 steel state highway bridges.



# SM&I

IS RESPONSIBLE FOR MAKING SURE BRIDGES ARE SAFE TO TRAVEL ON AND FOR RESTORING TRAFFIC SERVICE AS QUICKLY AS POSSIBLE. THAT CAN RANGE FROM ORDERING MINOR REPAIRS TO DEVELOPING CONTINGENCY PLANS, SUCH AS THE INSTALLATION OF A TEMPORARY CROSSING.

-BARTON NEWTON, CHIEF, SM&I

## Bridge Inspections

SM&I engineers and technicians are responsible for conducting routine inspections of state highway and local agency bridges at least every four years, or more frequently as needed.

Inspections are conducted by three investigative offices, a northern branch covering 45 counties stretching from the Oregon border to the Tehachapi Mountains, a branch serving the state's 13 southern counties, and a toll investigations office responsible for the nine state-owned toll bridges.

Inspectors look for any signs of deterioration, fatigue or distress in decks, superstructures and substructures, and recommend repairs to responsible Caltrans district maintenance offices.

More than 650,000 routine bridge inspections have been completed by SM&I since 1927.

## Special Investigations

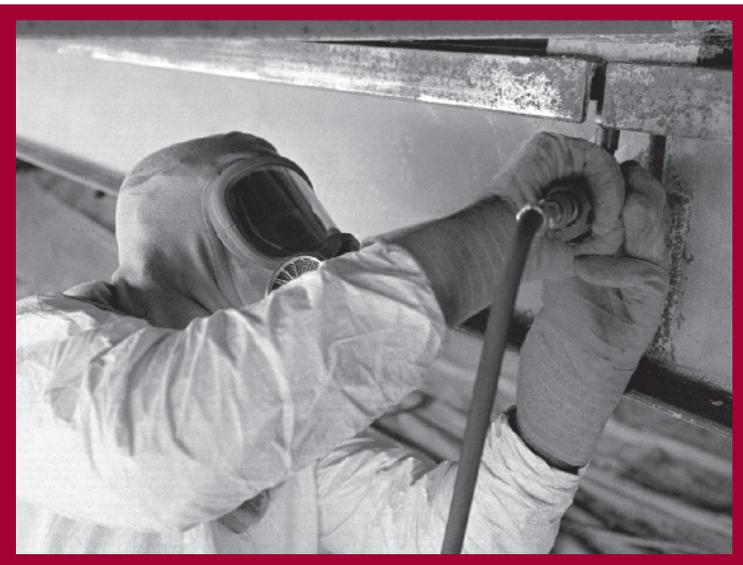
In addition to routine inspections, SM&I conducts special investigations of steel bridges and structures over water.

SM&I's Fracture Critical Program staff are responsible for inspecting more than 1,000 state and local agency steel structures. They look for signs of fatigue.

The Underwater Inspection Program Team is responsible for checking the supporting piers of more than 536 bridges, including major bay crossings like the San Francisco-Oakland Bay, Richmond-San Rafael and San Diego-Coronado bridges.

Evaluations of state highway and local agency bridges subject to scouring are the responsibility of SM&I's Hydraulics Office.

The Permits and Load Rating Branch is dedicated to determining the safe load carrying capacity of each bridge in the state and making sure over-height and over-weight loads can be safely transported on the State Highway System. The unit evaluates an average of 1,000 over-height and over-weight permits a year, and determines the safe load carrying capacity for hundreds of bridges from requests generated by SM&I's staff and the Caltrans design and construction offices.



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*Structure, Maintenance and Investigations crews inspect each of California's bridges at least once every four years using various methods, such as under bridge inspection trucks (UBITs), boat teams, and rappelling crews. Photo of boat team courtesy of SM&I.*



## Bridge Management

SM&I keeps information about every California state and local agency bridge. This information includes a historical record of the condition of each bridge on the state highway and local road networks, including the original as-built engineering plans and all completed bridge inspections.

The bridge library contains more than one million documents, some dating back 100 years!

## Bridge Repairs

The engineers and technicians in SM&I's design function produce engineering plans, specifications and estimates for bridge rehabilitation and replacement projects funded through the State Highway Operation and Protection Program and the Caltrans Five-Year Maintenance Plan.

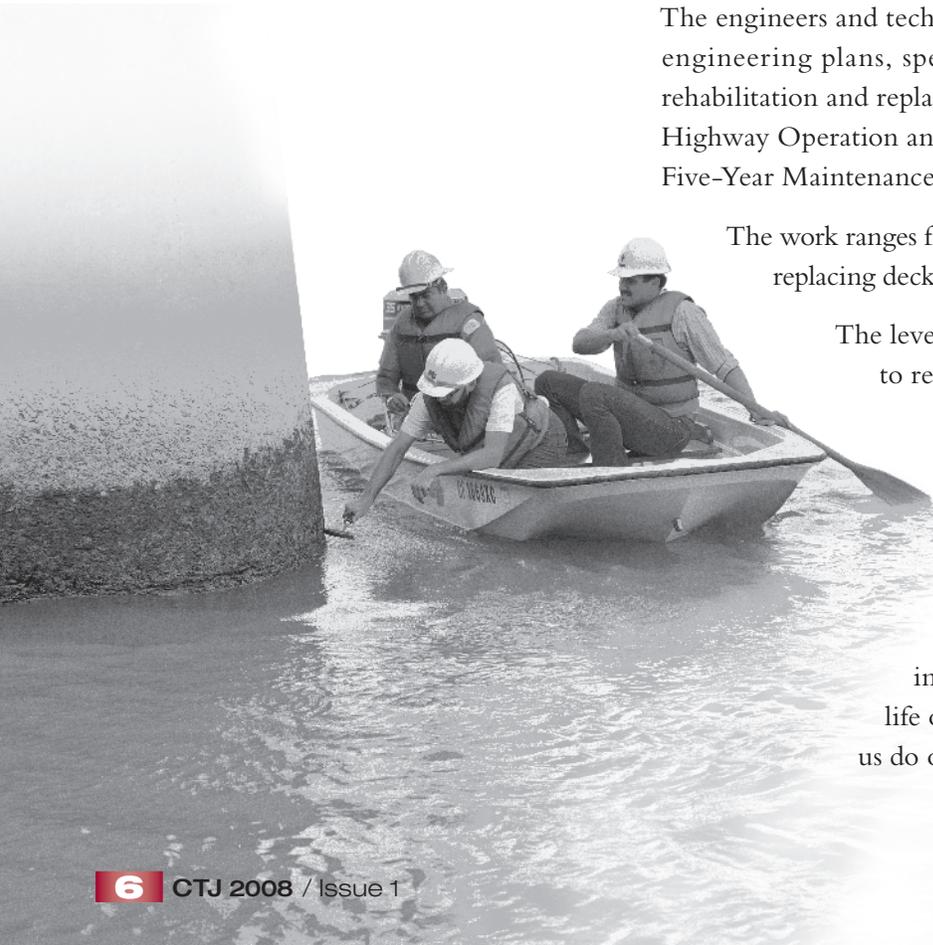
The work ranges from repairing expansion joints and hinges to replacing decks, superstructure elements and bridge rails.

The level of design work produced is programmed to reach \$100 million in fiscal year 2007-2008.

## Innovation

SM&I's aggressive bridge inspection and maintenance program is augmented by an ongoing research program.

"We are continually looking for ways to improve the health and to extend the serviceable life of our bridges and employ new tools to help us do our job better," Newton explained.



For example, SM&I is currently involved in federal research programs to build the first composite bridge to carry vehicular traffic in California and test whether Sonar imaging technology can improve the quality of underwater bridge inspections.

## Emergency Response

For the past 80 years, SM&I has played a critical role in responding to natural disasters or other emergencies that strike the state.

“SM&I is responsible for making sure bridges are safe to travel on and for restoring traffic service as quickly as possible,” Newton said. “That can range from ordering minor repairs to developing contingency plans, such as the installation of a temporary crossing.”

SM&I engineers spearheaded the installation of two temporary bridges to restore traffic service on Highway 140 near Yosemite National Park in 2006, after a massive landslide closed the highway.

Following the devastating 1989 Loma Prieta and 1994 Northridge earthquakes – and countless aftershocks – SM&I engineers inspected thousands of bridges for damage.

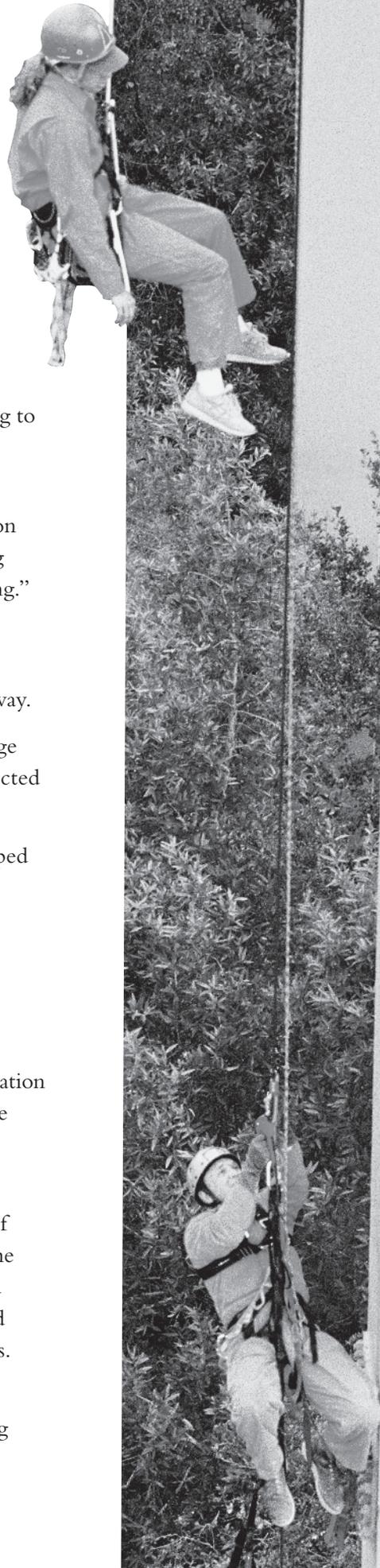
As part of its emergency response preparation, SM&I has developed an ongoing training program and adapted advanced technology to improve the flow of timely and accurate information from damaged bridges to Caltrans management and the state’s Emergency Operations Center.

## Keeping The Promise

The inspection process is the foundation of the SM&I bridge operation and management system. The accuracy and consistency of bridge inspections and documentation directly affect public safety, programming and funding appropriations.

The five-member SM&I Quality Team was created as a means of making a good inspection program better. The cornerstone of the effort is to help the bridge inspectors by identifying training and equipment needs and assisting in the development of policies and procedures designed to improve the quality of bridge inspections.

After 80 years, the promise – to deliver a safe and reliable system of bridges for California – is a promise the dedicated engineering professionals at Caltrans intend to keep. 





***Caltrans'  
Interstate 80  
Cold Foam  
Recycle Project  
won an award  
from Green  
Technology,  
a nonprofit  
organization  
that works with  
federal and  
state officials on  
environmental  
solutions.***

*By Joseph Peterson  
District Materials Engineer*

The Interstate 80 Cold Foam Recycle project is the first in California and the United States to recycle a high-speed, high-traffic volume roadway. Traffic counts range from 30,000 to approximately 60,000 vehicles per day.

The I-80 project rehabilitated existing asphalt concrete pavement, which showed block and fatigue cracking, movement of base fine materials (pumping), and minor potholes. It was a very rough ride.

Existing asphalt concrete lanes were recycled to a depth of four inches and the shoulders were recycled to a depth of three

inches using less than half the bitumen that would have been required if this project was constructed using conventional methodology. Three inches of hot mix asphalt was then overlaid on the recycled material.

The innovative aspect of the project was three-fold: First, the recycling methodology used 100 percent of the existing in-place asphalt concrete on a high-volume, high-speed interstate. This was done in a single pass, with a short equipment train configuration, allowing for the free flow of traffic through the construction zone.

# *Caltrans Wins Green*



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The short equipment “train” (pictured on the left) is an all-in-one recycler. The train reused the existing cracked and broken asphalt concrete on Interstate 80 by using a cold foam process to generate fresh asphalt concrete. The “train” consolidated three road-replacement machines into one, which allowed traffic to flow through the construction zone in the adjacent lane. This reduced congestion and emissions – an added environmentally-friendly bonus to the road-recycling process. Photos courtesy of Joseph Peterson.

This reduced construction zone congestion and idling motors at traffic standstills, lowering non-construction vehicle emissions. Second, trucks were not needed to haul away the existing milled asphalt concrete or bring in new replacement hot mix asphalt. Third, the modern computer-driven all-in-one recycler eliminated the need for three additional high-horsepower diesel engines: paver, pickup machine and breakdown roller. This saved additional fuel and further reduced the emissions as compared to conventional construction methodology.

The project used foamed asphalt as the recycling agent. Foamed asphalt is made when hot bitumen is injected with a very small amount of water, creating a violent reaction much like when adding a drop of water to oil in a frying pan to check temperature. When contained, this reaction produces foamed asphalt which is then mixed with the existing asphalt concrete and paved back in place. There are no other chemicals mixed with the bitumen, and the small amount of water added is blended into the recycled mixture. Unlike conventional chemical and water-based recycling agents, if

rain occurs prior to compaction, the material will act as a sponge with virtually no contaminated runoff. If compacted, the material behaves much like aged asphalt concrete, again with virtually no contaminated runoff. The other benefit of using foamed asphalt as the recycling agent is that traffic can travel on the recycled material in four hours or less.

The cold foam process could save millions of tons of virgin aggregate and bitumen. It could also significantly lower construction truck travel and emission levels. This is an added bonus in highly urbanized areas. **CTJ**

# Technology Award



# Trial By Fire:

**A terrible accident caused a fatal tunnel fire on the southbound Golden State Freeway (I-5) October 12. Reporters across the nation and beyond kept the public up-to-date on the speedy repair of the crucial Southern California main artery.**

A 31-vehicle pileup on the truck bypass lanes ignited a massive fire inside the tunnel on Friday evening, October 12. Three people were killed, several were injured, and all vehicles involved were incinerated.

Amazingly, in less than three days all the debris was cleared and the freeway was returned to nearly normal operations. This was completed because of the cooperation, commitment and capability of all responding agencies.

However, because of severe damage to the tunnel, the southbound truck lanes remained closed while a repair project was designed. The coordination achieved to prepare the project for bid by October 25 was another stunning success.

Even as firefighters cleared the wreckage inside the tunnel, Caltrans Structural Maintenance crews were right behind them, following at 10-foot intervals to hydro-blast the walls and assess the damage. The tunnel's

*continued on page 12*

# *I-5 Truck Tunnel Re-emerges from the Ashes*

*By Judy Gish, Public Information Officer*

*Photos courtesy of District 7*



roadway sustained severe damage and significant spalling (crumbling) of the reinforced concrete walls and soffit exposed structural steel at numerous locations.

Engineers immediately began working on designs while other staff reviewed as-builts, took field measurements, researched materials availability, and determined a budget. "Ninety-five percent of the work was completed before construction even started," said Resident Engineer Amjad Obeid.

The ensuing emergency repair work involved slab replacement, concrete barrier and metal beam guardrail repair, drainage and landscaping. Structural work included partial ceiling replacement/repair and repair of abutment walls, including new rebar (reinforced metal bar) support.

In order to bid on the project, contractors were required to attend a Mandatory Pre-bid Conference

to encourage small business participation. Security Paving of Sun Valley was the low bidder.

One clause set this contract apart from the norm — an incentive/disincentive clause to encourage early completion. The contractor would earn \$11 million if the job was done within 33 days from contract acceptance. If Security Paving finished prior to the 33-day deadline, it could get a \$2.9 million bonus. On the other hand, the contractor would owe the state \$150,000 per day plus liquidated damages if the job took longer than 33 days to complete.

Amazingly, the tunnel reopened 15 days ahead of the deadline, delighting motorists and demonstrating how quickly things can move when resources are made available. I-5 motorists can thank Governor Arnold Schwarzenegger for declaring the tunnel site a state of emergency and Caltrans Director Will Kempton for mobilizing emergency funds to quickly provide needed resources.



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The Los Angeles I-5 truck undercrossing was closed after a massive pile-up and fire on October 12. Immediately after fire crews cleared the wreckage, Caltrans employees hydro-blasted the walls and began design work to rebuild the interior of the tunnel. Within 13 days of the accident, Security Paving was awarded a construction bid. And 15 days later law enforcement led the first trucks through the newly renovated Golden State Freeway tunnel.



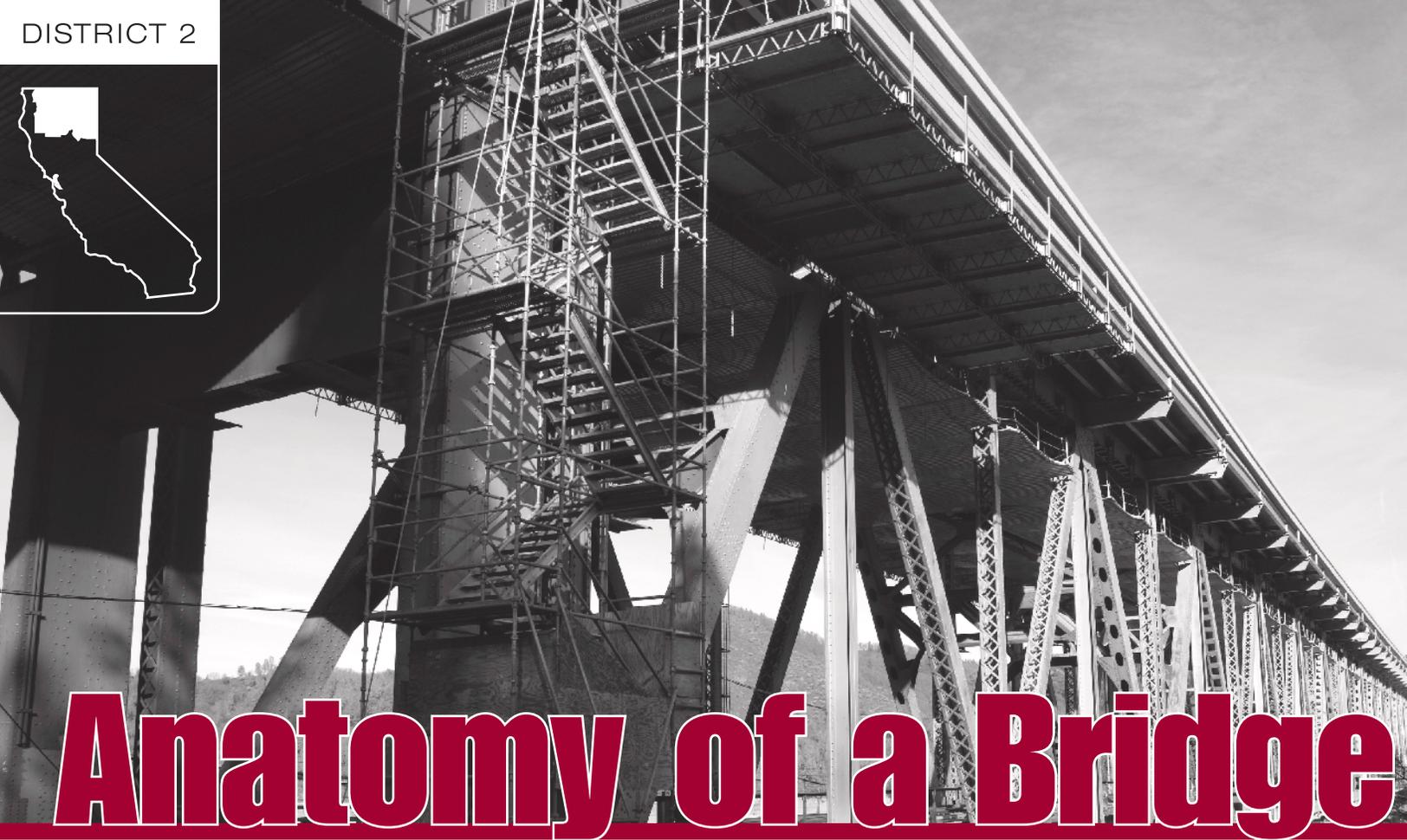
When the tunnel reopened, at approximately 4:30 p.m. on November 15, Governor Schwarzenegger issued the following statement: "Keeping people and goods moving across our state is vital to our economy, so I am proud to announce the early opening of this tunnel for the thousands of motorists who depend on I-5. I want to thank motorists for their patience during this emergency. I commend Caltrans Director Will Kempton and his entire team for working around-the-clock to get this project completed ahead of time."

More than a dozen news reporters attended the opening and toured the tunnel that afternoon. They saw pristine white walls (reflective paint), a new ceiling around the northern portal, and a new lighting system simulating daylight conditions inside the tunnel. Sensors dim the lights at night and at the tunnel exit to enable motorists' eyes to adjust to the contrasting outside light. Additional safety measures include installation of interactive

speed monitors and lowering of the speed limit at the tunnel approaches to 45 mph.

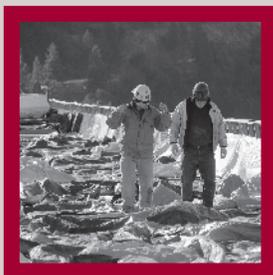
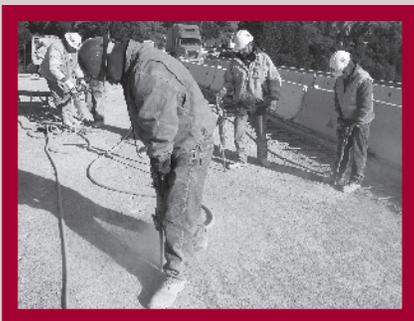
Approximately 120 Caltrans employees representing virtually every division contributed to the success of the tunnel restoration. Obeid said, without the dedicated Caltrans staff, the contractor would never have been able to finish the project so quickly. Caltrans surveyors and designers responded at any hour. Staff worked on Veterans Day, and maintenance support staff were available to fabricate signs as needed. These are just a few examples of the commitment shown by all who worked on the project. Obeid said, "We had 24 hours to respond to the contractor's questions, but we always got back to them within minutes."

District Director Doug Failing, a regular at the construction site himself, praised everyone involved for their contributions: "I'm incredibly proud of all the employees who worked practically nonstop to deliver the I-5 truck lanes to California motorists." **CTJ**



# Anatomy of a Bridge

## *Public outreach, coordination*



In June 2005, Caltrans conducted an investigation of the Pit River Bridge over Shasta Lake, a 3,600-foot-long span near Redding on Interstate 5 (I-5). The 64-year-old concrete deck showed signs of structural failure, so an emergency project to repair it was recommended.

The Pit River Bridge has a steel truss design supporting a concrete upper deck serving I-5 motorists and a lower deck serving Union Pacific Railroad trains. Coincidentally, the I-35W bridge that collapsed into the Mississippi River August 1,

killing 13 people and injuring 145, was also a steel truss design.

The Bureau of Reclamation owns the Pit River Bridge; however, the maintenance responsibility is shared between Caltrans and the railroad. Several options were identified to repair the bridge deck, all of which involved significant traffic management needs and coordination with Union Pacific Railroad staff to protect numerous trains, which pass under the construction zone each day.



# Rehabilitation

## *of partners pays off*

The project team investigated using a protective cover system suspended between the roadway, railroad tracks and Shasta Lake to protect boaters and the railroad from falling debris.

In the past when construction took place on the bridge, the railroad required all construction activities to stop prior to the passage of a train. In this case, interruption of construction was not acceptable due to the deck's condition. Using a separation structure would allow the

construction activities to progress unimpeded by train traffic.

Construction of the separation structure and subsequent removal and replacement of the bridge deck would cause severe impacts to the traveling public and Union Pacific Railroad. Replacement of the deck required reducing traffic to one lane in each direction. To prevent further deck deterioration, speed limits were lowered to 45 mph for the project's duration. The bridge averages 20,000 vehicles per day, and unpredictable winter weather or increased

*continued on page 16*

*By Chris Harvey, Senior Transportation Engineer, Project Management and Michael Mayor, Public Information Specialist*

# PIT RIVER BRIDGE FACTS

**Owner:** U.S. Bureau of Reclamation

**Year Built:** 1941

**Year Widened:** 1966

**Further Widening Capability?** No

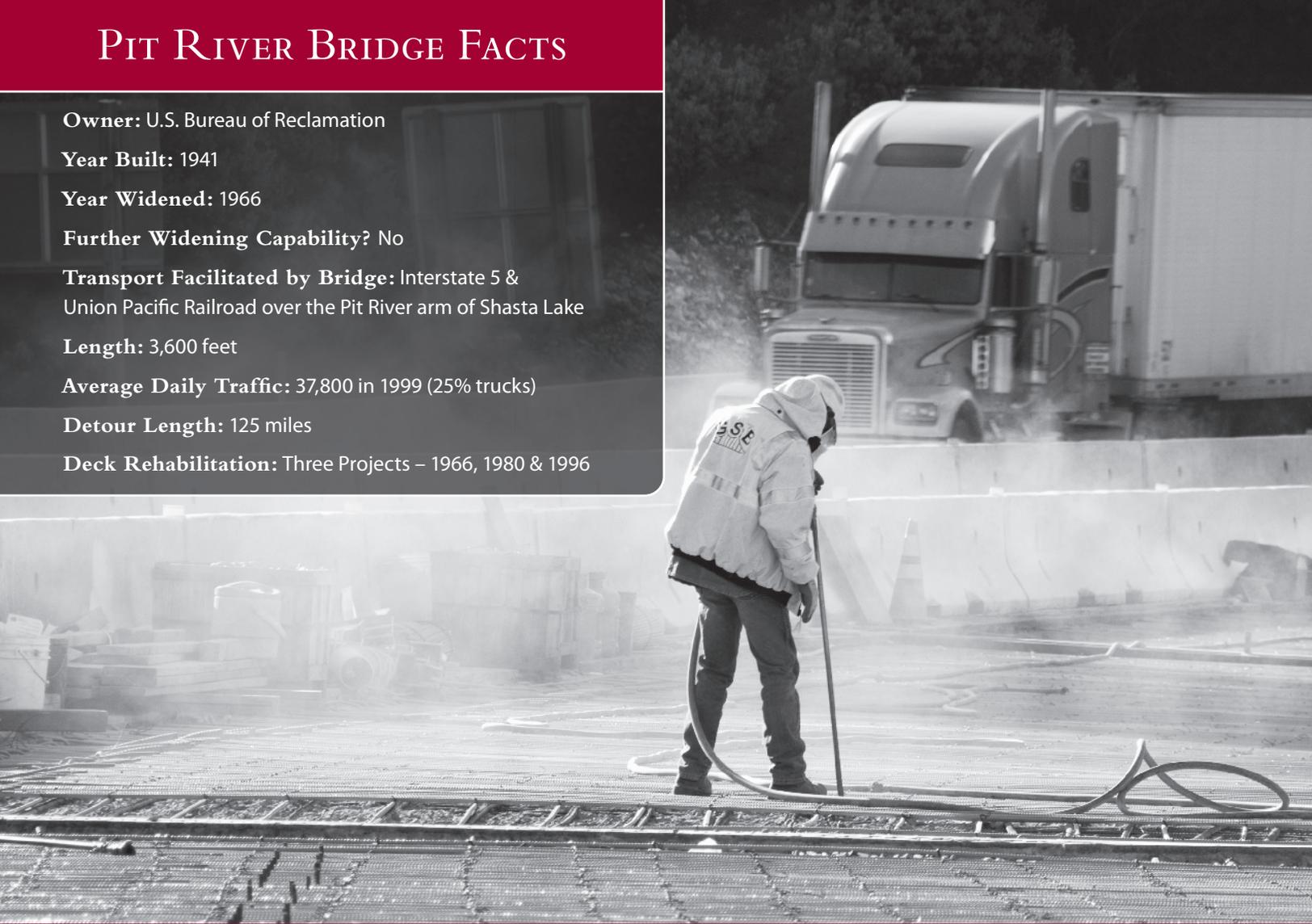
**Transport Facilitated by Bridge:** Interstate 5 & Union Pacific Railroad over the Pit River arm of Shasta Lake

**Length:** 3,600 feet

**Average Daily Traffic:** 37,800 in 1999 (25% trucks)

**Detour Length:** 125 miles

**Deck Rehabilitation:** Three Projects – 1966, 1980 & 1996



holiday traffic can cause major delays. With the only available detour being a 125-mile, two-lane rural mountain highway, loss of this bridge would cost Californians millions because of lost time.

Using vehicle count data from previous years, Caltrans determined the increased volumes of holiday travelers could result in two-hour delays and 20-mile back-ups the weekend after Thanksgiving. It

was imperative to inform the public about the expected impacts.

Weeks before Thanksgiving, Changeable Message Signs and Highway Advisory Radios were activated. Public information officers did outreach and held a media day at the bridge. Nearly a dozen media representatives toured the bridge.

Additional outreach included purchasing newspaper ads

throughout the north region and Oregon and contacting the college newspapers from San Francisco to Medford. Public service announcements were placed on local radio, and video of the construction site was distributed, along with news releases, to television news outlets in Redding, the Bay Area and Oregon.

Local businesses (hotels, gas stations, restaurants, etc.) and

numerous news, media and travel Web sites joined the efforts, posting flyers and links to the District 2 Web site informing drivers to prepare for major delays. A large pizza chain even volunteered to tape flyers on their takeout orders, an effective method that is now used with other local businesses. Web-based wire services carried news releases as far away as Ireland and the United Kingdom. The week prior to Thanksgiving, random surveys taken at select rest areas in District 2 showed approximately 70 percent of

those asked had heard about the projected delays.

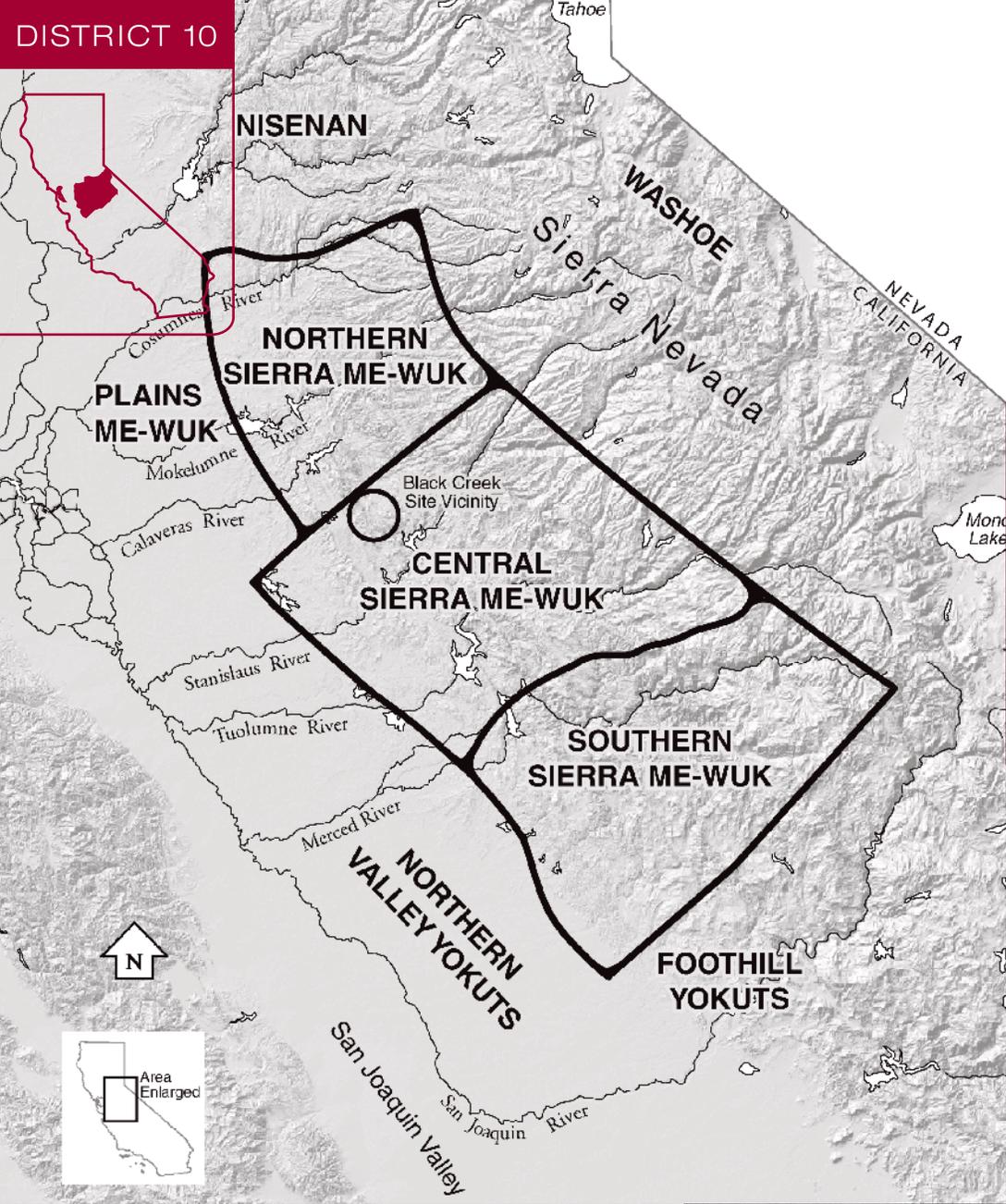
A temporary Closed Circuit Television (Traffic) Camera was installed at the bridge and a dedicated “Pit River Bridge” Web page was created. The use of a Pit River Bridge telephone “Hot Line” allowed motorists approaching the crossing to receive updated information relays from field personnel monitoring bridge traffic.

Caltrans personnel on site and in the Transportation Management Center provided

updates to traveler resources and the media, giving real time back-up and delay information throughout the Thanksgiving holiday weekend.

In the end, enough travelers altered their plans. The traffic volume decreased by 25 percent. This resulted in a maximum delay of less than an hour. Using a nationally accepted commercial truck and passenger vehicle delay cost standard, this reduction in delay equated to approximately \$250,000 in savings to the traveling public. 





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The Me-Wuk people are native to the Sierra Nevada Foothills and central valley. Black Creek is at the base of the foothills, so it contained many clues as to how the Me-Wuk lived thousands of years ago. The Me-Wuk used tools, such as the ones shown below, to pound out their food in bowls and created flour on mill slabs.

# Gover





CALTRANS HAS EARNED  
THE PRESTIGIOUS GOVERNOR'S

# *nor Honors Black Creek Site Project*



HISTORIC PRESERVATION  
AWARD FOR 2007  
ENVIRONMENTAL STAFF  
WORK ON THE BLACK  
CREEK SITE PROJECT.  
THE PREHISTORIC  
RESEARCH AND PUBLIC  
INTERPRETATION PROJECT  
WAS RECOGNIZED IN THE  
“INTERPRETATION OF  
HISTORIC PROPERTIES”  
CATEGORY.

*continued on page 20*

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Group photo by Caltrans Photography:  
*Tom Carsoner, Monitor/Cultural Committee  
Member; Milford Wayne Donaldson, FAIA,  
State Historic Preservation Officer; Jay Norvell,  
Chief, Division of Environmental Analysis,  
Caltrans; Alan Gold, Ph.D., Associate  
Environmental Planner, Anthropologist/  
Archaeologist, Caltrans Central Region; Christine  
Cox-Kovacevich, Environmental Office Chief,  
Caltrans Central Region; Debra Grimes,  
Cultural Resource Specialist, Calaveras Band of  
Me-Wuk Indians; Jeff Rosenthal, Principal, Far  
Western Anthropological Research Group, Inc.;  
Kome Ajise, Caltrans District 10 Director; and  
Ruth Coleman, Director, California State Parks.*

*By Jane Sellers, Research Writer, Central Region Environmental Planning  
Images and graphics courtesy of Far Western Anthropological Research, Inc.*

.....

*A Division of Environmental Analysis archaeological evaluation near SR 4, revealed acorns and pine nuts were harvested by California natives earlier than previously thought. Black Creek team member Eric Wohlgemuth looks for preserved plant remains through a microscope. The map shows that the volcanic glass used to make culinary tools among the Black Creek Me-Wuks, was traded from tribes in the Napa and Inyo-Mono areas.*



The State of California presents this special award annually in recognition of outstanding achievements in the field of historic preservation.

"This award is for exceptional work on one project, but it reflects the professional and respectful work Caltrans does on all archaeological resources that it impacts," said Jay Norvell, Chief, Division of Environmental Analysis. "We have outstanding archaeologists, Native American liaisons, and managers who work very hard to deliver projects in a way that promotes both good science and respect for Native Americans and their ancestors."

The project involved an archaeological evaluation and data recovery effort at Black Creek along State Route 4 near the town of Copperopolis in Calaveras County. Extensive studies on an archaeological site there resulted in new insights about California prehistory and the culture and history of the local Me-Wuk people. The project revealed that acorns, a main food staple of California native peoples, were harvested far earlier than previously thought, perhaps as far back as 7,000 years ago.

Alan Gold, Ph.D, archaeologist and associate environmental planner in Central Region Environmental Division, led the team of cultural resource specialists who were recognized for their research contributions: Richard Levy, Ben Broyles, Cassandra Hensher, and Carolyn Yee.

Kelly R. McGuire, project manager for Far Western Anthropological Research Group, Inc., produced the scientific report for Caltrans and stated in a letter to Gold: "I personally believe that the findings enumerated in the technical report will ultimately be recognized as one of the most important scholarly contributions to California archaeology produced by Caltrans."

The Caltrans research team developed an innovative solution to interpret what was found at Black Creek and share the history, traditional beliefs, and cultural values of the Me-Wuk people with the general public. The archaeologists, environmental planners and Native Americans worked together to produce an

informative booklet called "Stealing the Sun," written in nontechnical language for the general public. The booklet contains photos of the archaeological site and the artifacts recovered. It also contains Me-Wuk stories and cultural traditions, complemented by illustrations of the native landscape so important to the Me-Wuk.

The booklet, an important addition to the archaeological work, was identified by the State Office of Historic Preservation and the U.S. Army Corps of Engineers as a significant mitigation measure to help minimize adverse effects resulting from the realignment of State Route 4 near Copperopolis.

The Tuolumne and Calaveras bands of the Me-Wuk Indians contributed to the public interpretation program. Beyond the discovery of prehistoric artifacts and scientific findings, Caltrans provided several ways that the Me-Wuk could share their perspective on the

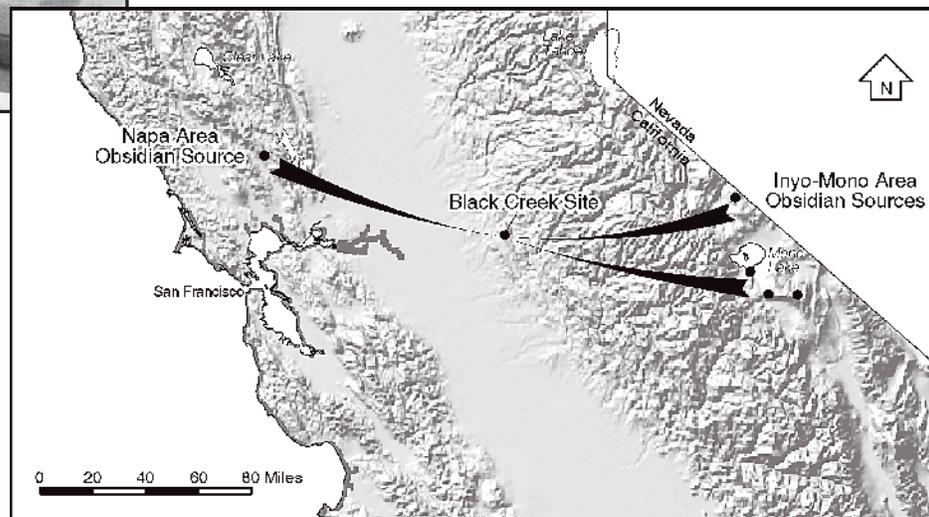
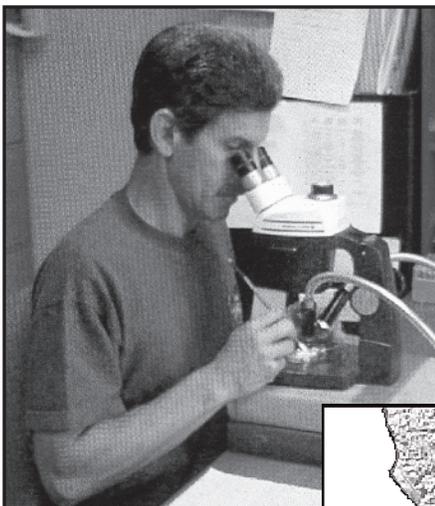
past and profile their traditional culture. Caltrans used Native American monitors of both the Tuolumne and Calaveras bands during all phases of the archaeological studies at the Black Creek Site. The Me-Wuk provided input for the scientific report, led on-site tours and provided information for the booklet, which contains information traditionally passed on through Me-Wuk oral history, archaeology, and ethnography.

"The Black Creek Project, with its booklet 'Stealing the Sun,' is an excellent example of an easy-to-understand educational tool for future generations to learn about and appreciate the culture of the Me-Wuk," said Jose Ruano, who helped prepare the nomination package for the award competition.

The booklet will be an ongoing tool to inform the public that the Me-Wuk culture continues to thrive today. For additional public access, the booklet has also been posted on the Internet at:

[http://www.farwestern.com/Caltrans/Stealing\\_the\\_Sun.pdf](http://www.farwestern.com/Caltrans/Stealing_the_Sun.pdf)

The booklet has been distributed to schools, tribal groups, public libraries, and interested organizations. Caltrans staff have featured the booklet and the Black Creek Site research results in presentations at public forums, lectures, workshops, primary and secondary schools, and professional meetings. 



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