

CALIFORNIA DEPARTMENT OF TRANSPORTATION

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What's Inside...
A Gateway to Fresno • SMF Gets New Neighbors
Digging Up San Francisco's History • Alameda Corridor Opens
U.S. 97 • Truckee Gets its Streets Back • Highway Barrier Aesthetics

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SAVING TAHOE II

In January of 2001, the Journal reported on a compact reached by a Lake Tahoe coalition that included the federal government, the states of California and Nevada, cities, counties, special districts and large private institutions, all aimed at arresting damage to Lake Tahoe. The compact, announced by President Clinton in 1997, pledged expenditures of \$908 million over the next decade to fund capital improvements, research, monitoring, and operations and maintenance—all designed to improve the lake's environment.

Caltrans was given a very large responsibility for ensuring that the approximately \$100 million to be spent on the region's transportation system was spent effectively.

I am pleased to report that the Caltrans part of this effort is moving ahead vigorously. The 2002 State Highway Operations Protection Plan adopted recently by the California Transportation Commission includes \$101 million in erosion control and stormwater treatment projects in the Tahoe Basin. Added to the projects Caltrans already had on the books, it results in almost 50 kilometers of the State Highway System within the basin that will have been completed, be under construction or going to design. An additional \$100 million, in 2004, should complete the funding package for Lake Tahoe's improvements.



Jeff Morales

Capital projects represent only the tip of our environmental iceberg at Lake Tahoe. We have assigned a stormwater treatment project to every kilometer of state highway in the basin and are conducting research on 16 pilot stormwater treatment systems. By reducing traction sand use, increasing recovery and by using low-phosphorous sand, we have reduced our contribution of that detrimental nutrient in Lake Tahoe to insignificance. We no longer "slush" snow berms, thus eliminating rapid flushing of quickly melting snow. We have retrofitted snow storage areas with runoff collection and treatment systems and added several units of state-of-the-art

sand recovery equipment. We are fully involved in regional transportation planning activities on contextsensitive issues such as bicycle/pedestrian-friendly communities.

The Tahoe projects are just a current example of the environmental stewardship that this department has increasingly made a central feature of the way it does business throughout the state of California. The response by department personnel to the Context Sensitive Solutions effort has been dramatic. I have noticed a new and exciting awareness of context among project development staffs, from planning to design to construction support staff.

UC Davis researchers reported earlier this year that in 2001 Lake Tahoe was the clearest that it had been in five years. While it is far too early to declare victory, this is a very positive sign that the coalition's efforts are paying off. Caltrans is proud to be a part of the change.

Jeff Morales

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Context Sensitive Solutions in Action

A GATEWAY FOR FRESNO

Photos by Don Tateishi

The “gateway” to a city is one of the most sensitive aspects of the image that it desires to show the world. As someone once said, “There is only one first impression.”

The gateways to San Francisco — over the Golden Gate and San Francisco-Oakland Bay Bridges — are among the most spectacular in the world. A trip into Los Angeles on Interstate 5 yields a stirring view of the city’s skyscrapers. Travelers entering Sacramento on Interstate 80 cross the Pioneer Bridge to behold a city on the build, ensconced in a canopy of leafy trees.

Consider, then, Fresno.

Built, patched and re-patched over a half-century, State Route 99 ignores the heart of Fresno to course through a corridor of rail yards, auto dismantlers, rundown motels and weed patches. Over the years, Caltrans had made various improvements that marred the appearance of the highway. A lane was added in the 1980s. Freeway-to-freeway connectors for State Route 180 and State Route 41 were added in the late 1980s and mid-1990s. Old and modern bridges, sign panels, landscape types, fences and overhead lighting fixtures were installed over the years with no unifying theme.

Meanwhile, out of sight from Route 99, Fresno grew into an economic powerhouse with almost a half-million residents. Small wonder that a wide circle of business owners, civic leaders and interested citizens came together in the 1990s to ask Caltrans to do something about the gateway to their city.

Local officials felt that the cluttered view from the freeway was making it difficult to attract new businesses to the city. “Some people wouldn’t even keep their appointments,” says Barbara Goodwin, executive director of the Fresno Council of Governments. “They would just turn around and go home.”



The “99 in 99” group, as it was then known, was composed of individuals in the private sector, local elected officials, and Caltrans staff. This group created a strong partnership to brainstorm ideas on how to improve the appearance of the highway through Fresno County. The group found not only a District 6 office that wanted to help, it came upon a fortuitous, unfolding program—the Modernization and Beautification Program—whose objective was to do exactly what the group wanted. In addition, the notion of Context Sensitive Solutions was just beginning to surface.

The impetus for improving the appearance of State Route 99 and its environs also arose partly because of the job that District 6 had done with three newer routes in Fresno—Routes 41, 168 and 180—all of which boasted abundant greenery, graceful sculpting of embankments and unified structures and appurtenances.

“Those highways have a far greater percentage of local travel than Route 99, which is a major, inter-regional route,” says Lori Butler, the District 6 Landscape Architect. “People saw what we had done with them and wanted inter-



Local officials felt that the cluttered view from the freeway was making it difficult to attract job-producing new businesses to the city.

regional travelers to take away the same impression of our city that local residents had.”

Butler and Project Manager Jim Bane both praise the citizens’ group that grew out of the “99 in 99” group — the “Association for the Beautification of Highway 99.”

“The district beautification group, called the ‘REVAMP’ team, existed before the Beautification and Modernization program started,” Lori Butler says. “We had already decided to focus on improving the appearance of the 99 corridor and when we got a call for projects, we responded with the proposal for the Fresno 99 project,

which we chose because of strong local interest.”

The Association for the Beautification of Highway 99 had done its homework. It hired a consultant, RRM Design, who put together a beautification plan under the guidance of the association. The plan identified views of junkyards, billboards, cellular telephone towers and litter as problems the community needed to address, along with problems of the highway itself. The consultant also noted a lack of community identifiers.

The key to the success of the 99 group is the strong partnership that has developed among members of the group. “By working together to solve problems, the community has taken ownership of the state highway,” says Jose Ruano, Chief of Environmental Enhancement and a Caltrans voting representative in the association.

“I don’t believe the association ever dreamed that Caltrans would develop a project such as this, one focused on aesthetic improvements only,” says Butler, who has attended monthly meetings of the association since Caltrans began development on the \$6 million project in May 2000. “They were hoping for improvements over time as projects came along, and anticipating local contributions through the Regional Transportation Enhancement Activity program.”

After getting community input, Caltrans determined that a primary requirement was to identify the entrances and boundaries of the community (“You are now entering/leaving the Fresno area”) and give the highway a consistent look throughout the project area.

“The association has been great,” Butler says. “They have provided a sounding board for the measures we proposed and they have given us essential support along the way with the county, the cities, the regional planning agency, the media and other citizens. They’ve been involved every step of the way, even now with construction issues.

“The project received a boost because the pavement on Route 99 needed resurfacing and a \$20 million pavement repair project was in the works,” Butler says. Reconditioning the pavement was a major element of Caltrans’ beautification project. “We could have taken all the other measures, but if a traveler were still confronted with broken, cracked and discolored pavements, we still would not have provided an attractive view,” she said.



Jim Bane, Project Manager, and Lori Butler, District 6 Landscape Architect, are working together on a project to enhance the gateway to a bustling Fresno.



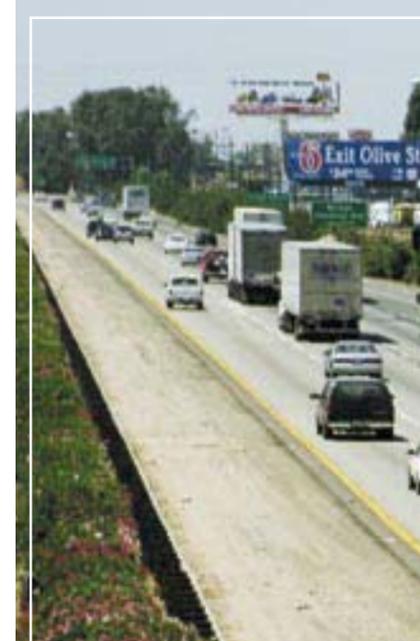
The \$6 million Fresno 99 Beautification and Modernization Project, the first of its kind in the state, is the “showcase” project for the Beautification and Modernization Program. This program focuses on the role of a highway as a gateway and a thoroughfare for a community. The program takes into account environmental, scenic, aesthetic and community impacts and identifies ways of enhancing these elements.

The Fresno 99 project was designed by Caltrans District 6 staff led by Project Manager Jim Bane with a goal of enhancing the look of the Highway 99 corridor and providing a pleasing and positive image of the community to travelers, while also addressing safety needs.

After getting community input, Caltrans determined that a primary requirement was to identify the entrances and boundaries of the community (“You are now entering/leaving the Fresno area”) and give the highway a consistent look throughout the project area.

To meet these objectives, the Caltrans team devised a plan to use similar or complementary colors and textures on a variety of elements throughout the corridor. In addition, walls and landscaping would be used to screen undesirable sights from the highway. And, for long-term beautification and for the safety of Caltrans Maintenance personnel, the team created a design that would make the roadsides easier to maintain, and require less frequent maintenance. The Caltrans team included the following features:

- Plants to screen unwanted views, while creating a visually unified corridor.
- Trees along the length of the project to create a tree-lined highway to further strengthen the corridor concept.
- Walls to screen the most undesirable views of nearby properties.
- Paved gore areas and slopes under structures with stamped and colored concrete to reduce the need to maintain difficult yet highly visible areas.
- Color-stained concrete barriers.
- A painted, brick-colored band on structures.
- Replacement of worn right-of-way and pedestrian fencing on structures with an upgraded mesh and decorative supports to enhance the pedestrian space.



Plantings in the median are consistent throughout the Fresno metropolitan area, providing unity and identity to the city.

- Lighting that conforms to the current standard.
- Removal of unnecessary road signs and installation of new ones that conform to the current standard.
- Distinctive artwork in the form of attractive tile murals put together by local high school students guided by the Rotary Club of Fresno.

“This project is an excellent example of customer-driven project management and context sensitive solutions,” says Mike Leonardo, District 6 Director. “The customers—travelers and the local community—ultimately helped to determine the requirements of the project. They worked as partners with

Caltrans to develop a master plan for the beautification of Highway 99 throughout Fresno County. The Caltrans team of landscape architects, district design engineers and other functional units from District 6, along with help from Caltrans headquarters, then helped to carry out the plan.”

With the changes in place so far, Highway 99 boasts a new attitude, and it shows. And this has produced other, more basic developments in Fresno. The city has just announced the formation of a redevelopment zone for 10.5 km along Route 99, to deal with blighted motels, aging neighborhoods, abandoned properties, junkyards and urban blight. The zone would generate tax dollars to provide infrastructure, clean up blight and spur commercial and industrial development.

Once the target of negative comments regarding the appearance of its major thoroughfare, Fresno is now identified as a model for other communities along Highway 99 in the San Joaquin Valley.

“In fact,” Leonardo says, “the mayor of Bakersfield recently wrote to Caltrans, citing Fresno’s Highway 99 as the model he wanted to use in determining desired highway appearance through his community. I think you could say that’s being sensitive to context.”

— Gene Berthelsen



Attractive tile murals, put together by local high school students and guided by the Rotary Club of Fresno, enhance the roadside and lend further identity to Fresno.

SMF Gets Some New Neighbors

Sacramento's International Airport has, over the past three decades, undergone steady growth in the number of flights and passengers it serves; today, 12 million passengers annually hustle through its two main terminals. For those three decades, it has sat amidst fields of alfalfa and row crops while various financial and other roadblocks have stopped proposed developments nearby.

Meanwhile, the city of Sacramento has crept inexorably toward the airport's southern boundaries, like Birnam Forest advancing on MacBeth's Dunsinane Castle.

Now, with environmental requirements satisfied, the pace of development around the airport is about to pick up dramatically. And when it does, Sacramento may have been well-served by the length of time it took to satisfy those requirements and myriad other institutional, financing and legal conditions.

John Kasarda, director of the Kernan Institute at the University of North Carolina, has written that transportation has always governed urban form; seaports, rail and highways have sculpted cities with as sure a hand as a Michaelangelo on a Pieta. Now, in the 21st century — what Kasarda calls the "speed century" — new urban forms will be crafted by airports, creating what he has termed the "Aerotropolis."

The empty fields around SMF today lie fallow, in wait for some uniquely 21st century development. And that development, in turn, will have a major impact on the airport, the land around it and on Sacramento's ground transportation system.

Sacramento Airport renamed itself an "international" airport several years ago then had to wait for years before it inaugurated its first international flight.

But several proposed developments could speed up the arrival of more international air

Photos by Jon Hirtz



The empty fields around SMF today lie fallow, in wait for some uniquely 21st century development. That development, in turn, will have a major impact on the airport, the land around it and on Sacramento's ground transportation system.

traffic. Metro AirPark, a 100-hectare development dedicated to office buildings, light manufacturing and traveler services, along with several other nearby planned developments, is likely to mean many more international flights. With a real estate value of more than \$2 billion, Metro AirPark is typical of Kasarda's airport vision.

"It's a good fit," says Rob Leonard, Deputy Director of Airports for Sacramento County. "The empty fields around Sacramento International Airport represent an opportunity that few airports have — the possibility of crafting 'speed century development' on new space instead of having to displace earlier development, much of it residential or industrial."

Metro AirPark, for instance, will start with utilities, including fiber-optic communications, that are designed for 21st century uses, utilizing oversized conduit to accommodate future utility needs as yet unheard-of or unnamed.

The employees of the businesses likely to inhabit Metro AirPark and its neighbors are five times more likely than the general population to travel by air. They are the software programmers, systems engineers, service representatives and customer relations managers whose offices consist not of four walls and a desk, but of a briefcase, a laptop computer, a Palm Pilot and a cell phone. They are the people on the go who can be seen with a cell phone to their ears in any airport worldwide.

Above all, they need immediate access to air travel.

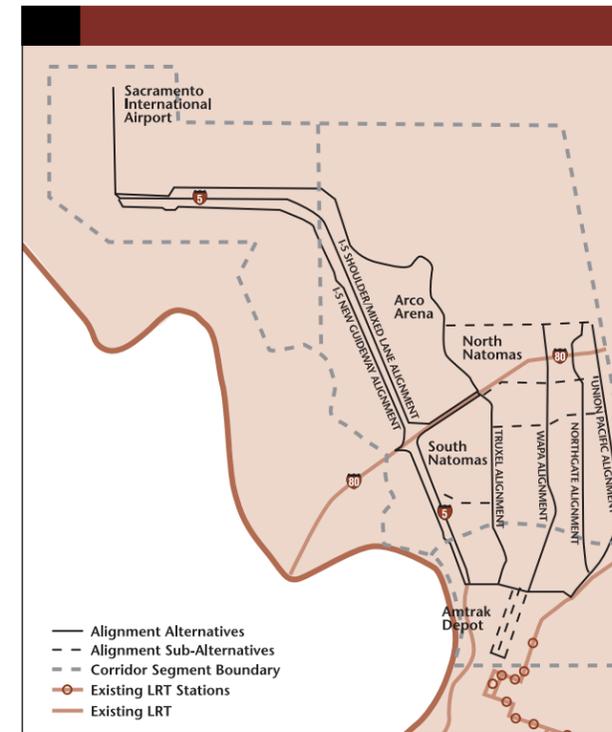
Kasarda, as well as futurist Alvin Toffler, predicts that the mere production of high-quality goods at competitive prices will no longer be enough in the speed century. "Speed and agility would take center stage as industry increasingly emphasizes accelerated development cycles, international sourcing and sales, flexible, customized production and rapid delivery."

METRO AIR PARK





“Sacramento International Airport and its surroundings represent an opportunity that few airports have — the possibility of crafting ‘speed century development’ on new space instead of having to displace earlier development, much of it residential or industrial.”



The Sacramento Council of Governments and Sacramento Regional Transit District are studying a number of light rail routes to Sacramento International Airport.

The well-documented trend toward reduction of inventories and in-and-out processing along the hyper-competitive Pacific Rim has resulted in half of the value of all freight shipments now being moved by air. These are the highest-value, highest-technology products that America makes. These products often fly as “belly cargo,” on scheduled passenger airlines. The frequent schedules flown by passenger airlines in and out of Sacramento International Airport will mean more opportunities for cargo shipments during a business day.

Sacramento’s international travelers are likely to see more international flights, both because of the need among Metro AirPark tenants for international access, but also because international belly cargo will make the flights more lucrative.

“Metro Air Park was first proposed in 1968,” says Gerry Kamilos, the project manager. “It has gone through a number of changes in land-use plans as we have watched California’s economy change. Immediately adjacent to the airport are industrial uses related to the airport. This would include aircraft maintenance, light manufacturing of materials used in the aircraft industry and support services

for air travel, such as catering, vehicle rentals and other services.

Metro Air Park, which contains areas for high-tech light manufacturing and distribution, is poised to take advantage of the trend toward fast-paced inventory management. And its high-tech and research/development offices are meant to supply the people needed to manage, control and service that flow of goods, often on the fly.

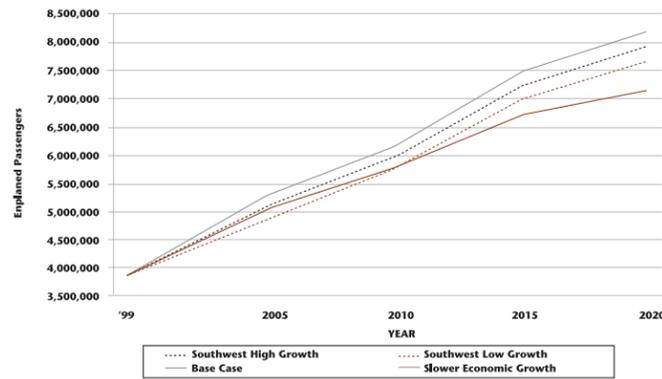
Metro AirPark also contains space for commercial, professional and corporate headquarter

offices and conference space, including hotels. Airport access is a powerful attraction for service-sector industries such as advertising, legal services, data processing, accounting, auditing and public relations, which often dispatch professional staff to their customers’ sites or bring in clients by air.

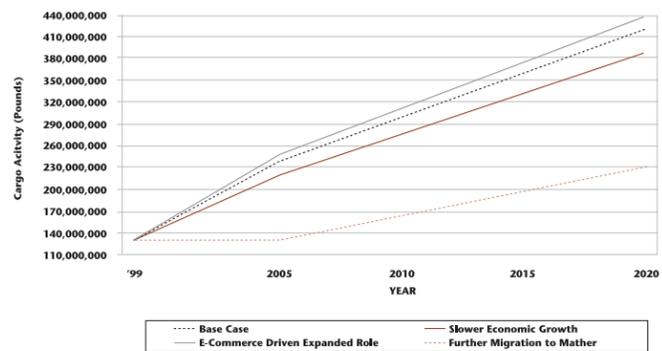
“The commercial and conference space is a particularly important element of the development,” Kamilos says. “In this era of electronic communication, people still prefer to meet face-to-face. And when it comes to meetings, conferences and training, companies are putting a premium on proximity to airports. These go-go staffs need to be able to fly in and fly out, often at moment’s notice.” To make the

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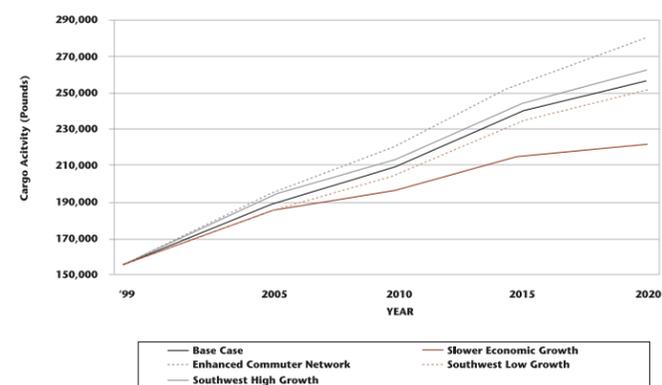




ENPLANEMENT FORECAST SCENARIOS



CARGO FORECAST SCENARIOS



OPERATIONS FORECAST SCENARIOS

Sacramento International Airport forecasts a steady growth in passenger, cargo and operations activity over the next 20 years, trends that will be colored by the character of surrounding development.

conference facilities more attractive, Metro AirPark will have a golf course that snakes through most of its length.

While much of Metro AirPark is designed for uses that would contain travel between the development and the airport, its developers estimate that, at buildout, 35,000 people will be employed there—and therein lies a problem. Currently, the airport’s one major lifeline from downtown is Interstate 5, a route that appears to be in danger of serious capacity problems from residents traveling to and from the thousands of houses being built in the city’s North Natomas area, in Woodland and beyond. Other routes from the burgeoning foothill development to the east are also overburdened.

Caltrans, the County of Sacramento, the Airport and Metro AirPark’s developers are working together to develop the access needed as nearby developments come on line. Jeff Pulverman, Caltrans District 3 Senior Planner, says, “A planned Sacramento Light Rail Extension, under construction in 2007, is expected to carry as many as 20,000 daily riders by 2009 from downtown Sacramento to the airport, as well as the

development surrounding it. Caltrans, the Sacramento Area Council of Governments and the county are also planning a new High-Occupancy Vehicle lane that will travel the length of Sacramento and end at the airport.”

The developers of Metro AirPark and other nearby developments will furnish a very large share of infrastructure needed to provide new service to the airport. “Metro AirPark will invest a total of more than \$160 million for infrastructure of all kinds, including water and sewers and transportation,” says Kamilos. This includes investment in a new Interstate 5 interchange to serve Metro AirPark as well as upgrades to the interchange at Elkhorn Boulevard and State Route 99.

Metro AirPark will pay for construction of new access to the airport from the east along Elkhorn Boulevard, and installation of acceleration and deceleration lanes on Route 99’s main line.

Is it likely that these investments will avert a breakdown of mobility between downtown Sacramento and the airport? Steve Hetland is the Caltrans project manager for the interchange project for Metro AirPark; he previously worked on Metro AirPark when he was employed with the County of Sacramento.

“Predicting the future is very difficult,” Hetland says. “Metro AirPark is designed for uses that will contain as much travel as possible between itself and the airport. But this is a free economy, and those moving into the development may not all fit the pattern that has been planned. We’ll just have to cope with that as time goes on.”

– Gene Berthelsen

Caltrans, the County of Sacramento, the Airport and Metro AirPark’s developers are working together to develop the access needed as nearby developments come on line.





Digging up San Francisco's History

Photos by Don Tateishi

In the afternoon, I visited the encampment of the gold diggers in Happy Valley, for the purpose of selecting a site on which to pitch my tent... Yerba Buena [San Francisco] contains at this time a dozen adobe structures and perhaps two hundred roughly-constructed frame buildings, mostly shipped around Cape Horn... The beach, Happy Valley, for the space of two miles, is covered with canvas and rubber tents, and the adjacent sandhills are dotted to their summits with these frail but convenient tenements of the prospective miner. The population numbers perhaps five thousand... It seems as though every nation on the face of the earth had sent a representative.

- SAMUEL UPHAM
EXCERPT FROM HIS JOURNAL
AUGUST 6, 1849



More than 150 years ago, the scene described above was visible from atop Rincon Hill where the west approach of the San Francisco-Oakland Bay Bridge now rests and where District 4's West Approach Replacement Project begins in San Francisco. The project consists of constructing temporary structures, demolition of the old freeway and construction of the new interstate, with on- and off-ramps between the bridge and Fifth Street, encompassing 14 city blocks.



Before the retrofit work begins, archaeologists from Caltrans and Sonoma State University's Anthropological Studies Center are working to retrieve pieces of history that would have been lost forever during the construction. The work is in compliance with California Public Resources Codes 5024 and 5097, which protect historic and prehistoric resources found on state property.

"Years of research and preparation went into this archaeology field endeavor," says Janet Pape, Senior Environmental Planner and Archaeology Manger for the



The project consists of constructing temporary structures, demolition of the old freeway and construction of the new interstate, with on- and off-ramps between the bridge and Fifth Street, encompassing 14 city blocks.



Toll Bridge Program. "As a result of our preparation, we eliminated, as best we could, areas disturbed by previous excavation, such as basements. We also eliminated places likely to have a high degree of toxic materials, such as where an 1870s lead paint factory once operated, and property that would have provided little historical information."

The research was narrowed to portions of 10 blocks, but since the historic surface in some areas is up to six meters deep, excavation next to some buildings and footings was nearly impossible. Thus, nearly half of the proposed areas were eliminated from field testing by agreement with the State Office of Historic Preservation.

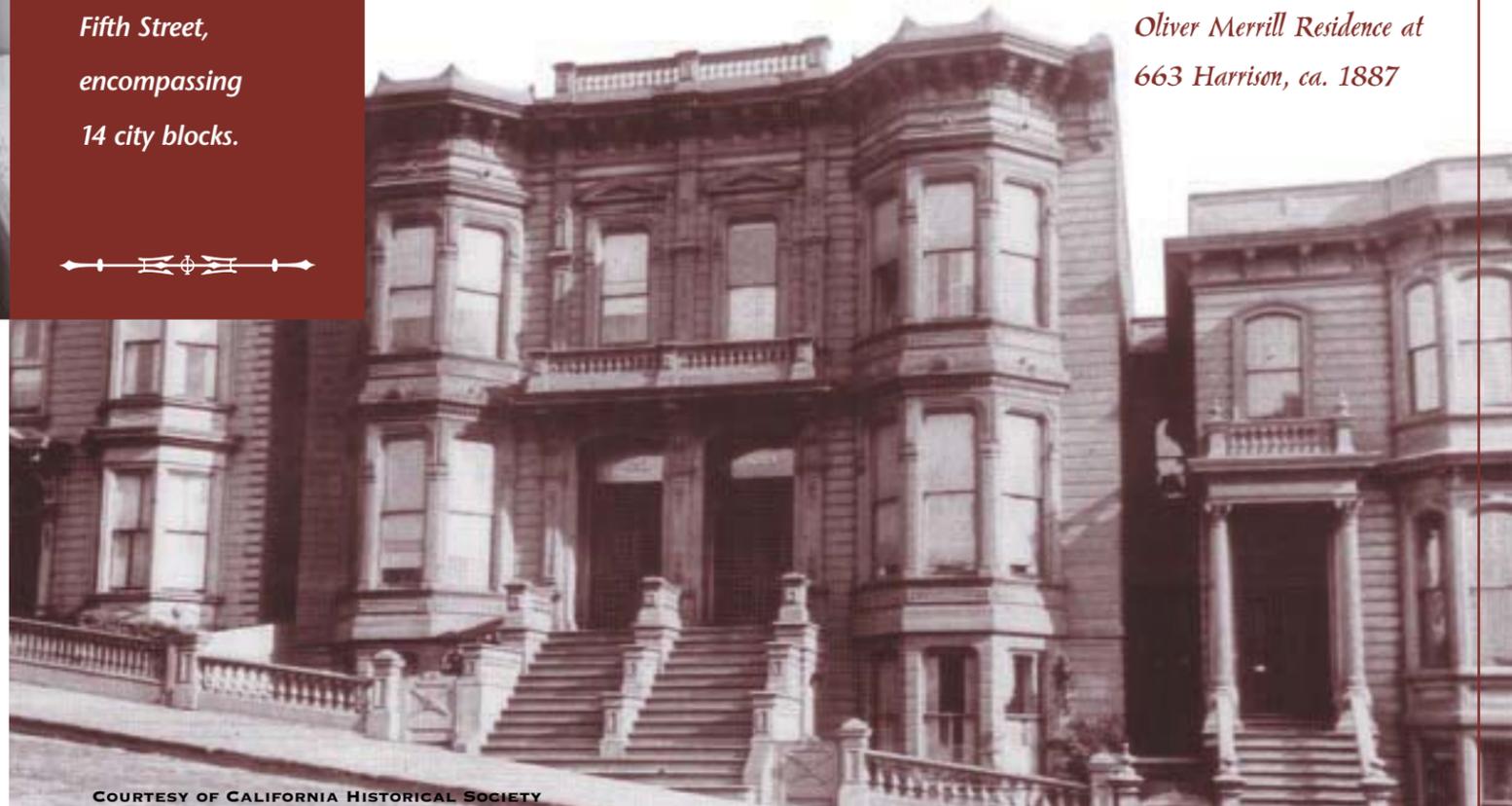
A great deal of time and effort was also spent working with engineers on the archaeology specifications for the Plan, Specifications and Estimates. "This was a real challenge, but important because cooperation is crucial between the construction contractor, the Caltrans engineers, and consultant archaeologists for the fieldwork to operate smoothly," Pape says.

COURTESY OF THE BANCROFT LIBRARY



The second day of the April 1906 Fire, from Lafayette Square, looking toward Nob Hill.

Oliver Merrill Residence at 663 Harrison, ca. 1887



COURTESY OF CALIFORNIA HISTORICAL SOCIETY

Digging up San Francisco's History

Various Caltrans personnel are also essential for a successful archaeological investigation. Right-of-Way clears parking from the portion of the block where the investigations will take place, then Surveys marks out the boundary corners of the test areas.

The archaeological investigations can be carried out on only one block at a time because the work is being done on lots that contain some of the limited parking available in downtown San Francisco.

To date, the archaeologists have completed two blocks and are working on a third—Rincon Hill, San Francisco's first elite neighborhood. San Francisco's genteel society folk built mansions on its summit because of the sweeping views of the bay and the city. However, during the Industrial Revolution in the 1860s and 1870s, sand dunes were leveled and Second Street was cut through Rincon Hill to allow traffic to flow from the city to the bay on the south.

"Years of research and preparation went into this archaeology field endeavor," says Janet Pape, Senior Environmental Planner and Archaeology Manger for the Toll Bridge Program.



"This intrusion into Rincon Hill prompted San Francisco's elite to vacate their secluded neighborhood and the mansions became boarding houses and nursing homes," says Pape. The area in which the archaeologists are working, at this writing, is the site of the old St. Mary's Hospital, which was destroyed by the earthquake and fire of 1906.

Archaeologists are aided by a backhoe operator who has a feather touch, for dealing with materials that lie, at the minimum, a meter below the surface of the parking lot.

"First time on an archaeological dig," says Dwight Williams, backhoe operator for Balfour Beatty, hired to do earthwork for the excavation. "It takes finesse and patience. You can't just blow through the ground like you do in regular construction work."

A big man with a big piece of equipment, Williams nevertheless confesses to excitement when his claw unveils a plate or a

"First time on an archaeological dig," says Dwight Williams, backhoe operator for Balfour Beatty, hired to do earthwork for the excavation. "It takes finesse and patience. You can't just blow through the ground like you do in regular construction work."



bottle or chamber pot. He gently strips away the soil near the foundation of the old hospital to reveal the artifacts in place.

"Archaeologists examine the evidence of the past in meaningful units," says Grace Ziesing, Anthropological Studies Center archaeologist and editor of the archaeological research design and treatment plan for the West Approach project. "In most cases, that means layers."

Those layers are obvious in today's excavation, cut into the earth by Williams' backhoe and by the shovels, hoes, trowels, picks and brushes used by the archaeologists—along with their fingernails. The profile of the trench shows the most recent earth fill at the top, then a heavy, black layer of ash and soot from the 1906 earthquake and fire that leveled the city. Beneath these layers are the foundations of the original hospital that stood before the fire, including a "dead house" where the deceased were



Types of artifacts uncovered include ceramics, glass, wood, metal and cut bone, as well as more discrete items that are bagged separately, such as a cluster of slate pencils or a complete, but broken vessel.

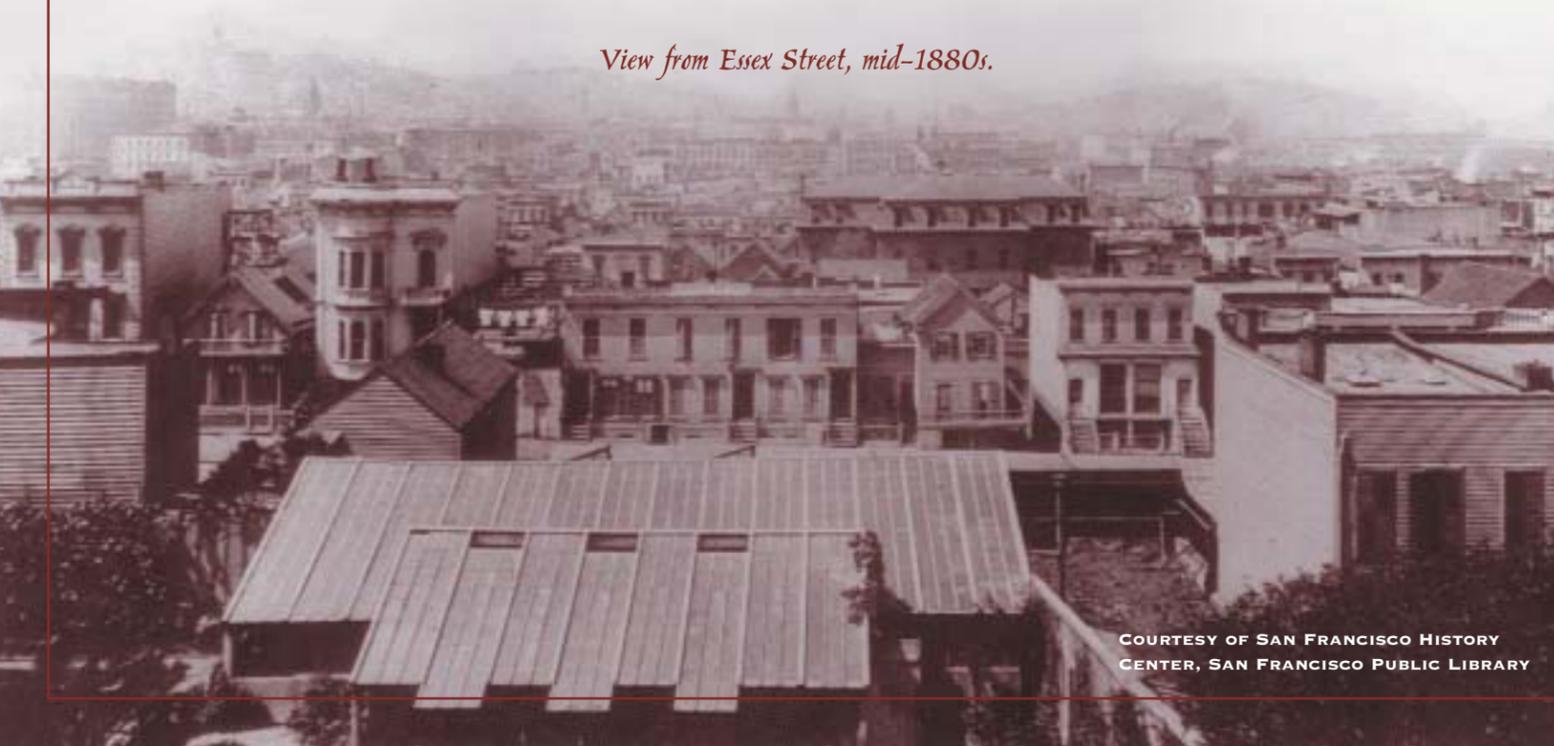
taken before burial. And under that are the earlier leavings of the settlers who preceded the hospital.

Sticking out of the side of a deep, step-backed pit is a clear-glass decorative bottle. This bottle is about to start a journey. It will be unearthed carefully, along with the layer of soil it rests in. The soil will be put into screens to shake loose the dirt, leaving artifacts and small debris such as brick fragments, burned clay, small rocks, etc. The contents in the screen will be carefully scrutinized and the artifacts picked out by hand. They will then be packed by type into paper bags, with each bag tagged as to its origin.

The bags today contain such items as flatware, ceramic dishes, refuse animal bones, doll parts, buttons, keys, thimbles, a ring and clock parts. The artifacts will be transported to the Anthropological Studies Center at CSU Sonoma where they will be washed, accessioned and



View from Essex Street, mid-1880s.



COURTESY OF SAN FRANCISCO HISTORY CENTER, SAN FRANCISCO PUBLIC LIBRARY

Digging up San Francisco's History



Dwight Williams' backhoe has uncovered an artifact that will now make a trip to CSU Sonoma, where it will undergo a forensic process to determine its origin and its place in San Francisco's culture.

catalogued. The items from each layer will be studied, photographed and documented. Then the interpretation, a forensic enterprise, begins.

The successive deposits often tell the story of a life. A family, over time, has risen to prosperity, gone through hard times and suffered the death of the master of the house. Prior to the installation of a sewage system in San Francisco, outmoded or broken household items, including garbage, often were deposited in the privy out back. "Each layer is a time capsule," says Jack McIlroy, Sonoma's archaeology field director. As the family prospered, its members dined on prime cuts of meat served on gilded porcelain dinnerware with fine cutlery, and drank wine from crystal goblets. But falling fortunes are reflected in animal refuse bones from

Henry Miller's residence at the corner of Essex & Harrison, built in 1877. The house key was all that remained after the 1906 fire.



COURTESY OF THE
SAN FRANCISCO HISTORY CENTER,
SAN FRANCISCO PUBLIC LIBRARY

poorer cuts of meat. When the widow remarries and moves away to start her life anew, the privy receives remains and memories from her previous life—an incomplete set of dishes, chipped or broken crystal and other items no longer useful.

Each of these items, separately and together, tells part of a story. Each person participating in the investigation—from the backhoe operator to the field archaeologists to the lab technicians, analysts and report writers—provides a hand in fitting the pieces into a mosaic that will ultimately provide a more complete picture of early San Francisco.

The archaeological investigation will not only reveal stories of the lives of San Franciscans, but provide an account of the working class people who migrated here from Europe,

Asia and elsewhere to build this magnificent city. The materials unearthed from the West Approach project will be curated at Sonoma State University in perpetuity. They will be used by future researchers for scholarly papers, presentations at conferences and development of courses about San Francisco's history.



COURTESY OF THE
CALIFORNIA HISTORICAL SOCIETY

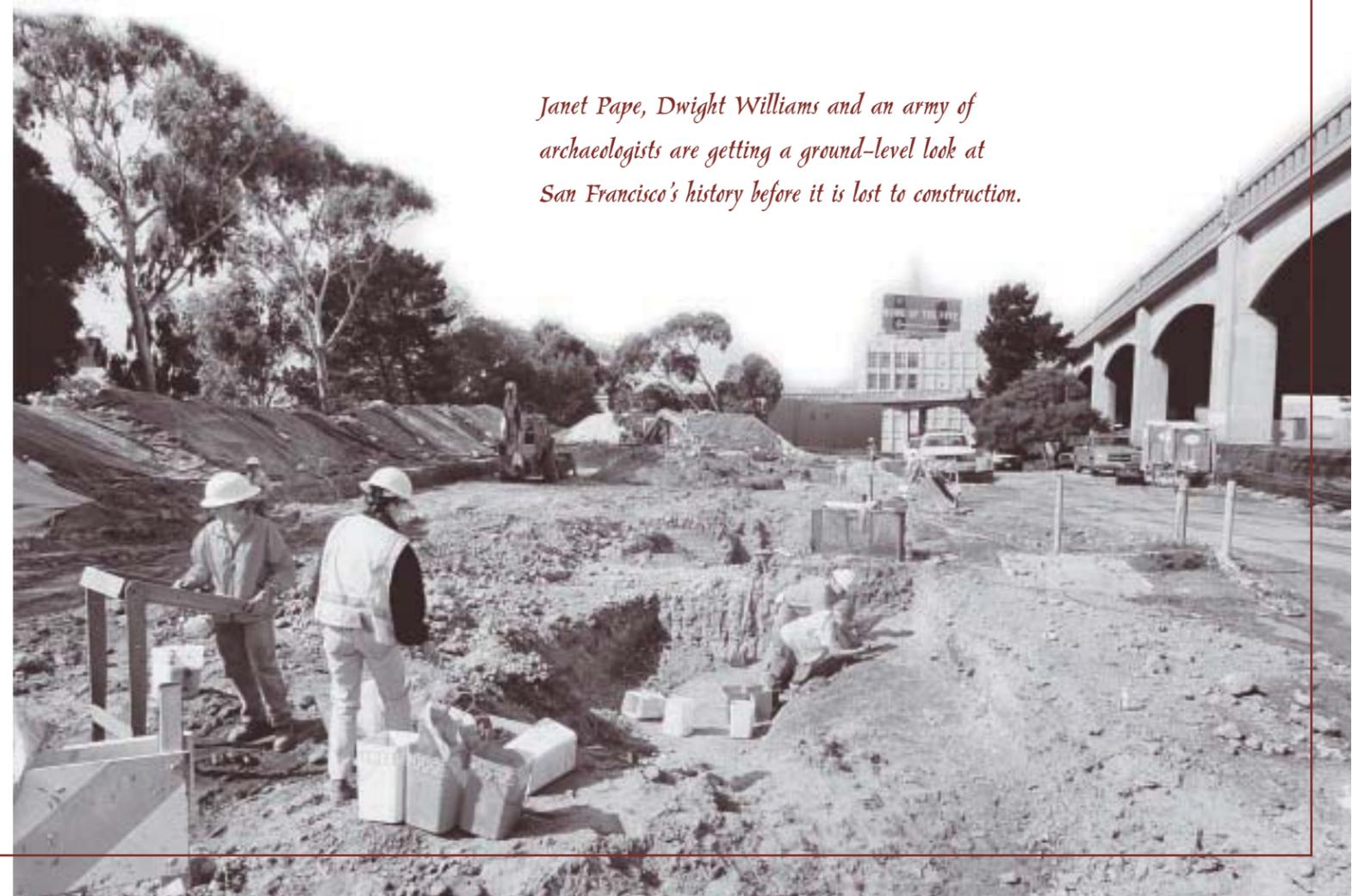
William Babcock's House on Rincon Hill, ca. 1879. The Babcocks lived through momentous changes recorded from this porch by many photographers until April 1906.

"Nineteenth-century historians mostly wrote about what they wanted future generations to know about them-

selves and their cultures," says Pape. "They often left out the details of life that to them were unimportant or not so savory. Archaeology fills in the details and produces a more accurate record of how people lived their lives. This is what historical archaeology is all about."

—Gene Berthelsen and Janet Pape
May 2002

Janet Pape, Dwight Williams and an army of archaeologists are getting a ground-level look at San Francisco's history before it is lost to construction.





PROJECT UPDATE

A L A M E D A

CORRIDOR OPENS

Governor Gray Davis and other dignitaries were on hand to mark the opening of the \$2.4 billion Alameda Corridor.



Photos by Ed Andersen

About a year ago, the Journal ran an article on a unique project to link the nation's busiest harbor complex with train yards near downtown Los Angeles — the Alameda Corridor.

Now, the \$2.4 billion series of bridges, underpasses, overpasses and street improvements — whose centerpiece is the 16-km Mid-Corridor Trench to separate freight trains from street traffic and passenger trains — has begun operations. Governor Gray Davis, U. S. Transportation Secretary Norman Mineta and Los Angeles Mayor James Hahn formally inaugurated the project in April with the flip of a switch.

Construction of the Alameda Corridor began in April 1997 with work on a three-track bridge over the Los Angeles River, replacing a single-track bridge built in 1905. It ended with the cleanup of a dozen acres between Long Beach and Wilmington that were home to junkyards, prostitutes, crack dens and cockfighting rings.

By consolidating 145 km of branch rail lines into one route, the corridor will eliminate conflicts between trains and street traffic at 209 rail crossings between downtown and the harbor. Over the

By consolidating 145 km of branch rail lines into one route, the corridor will eliminate conflicts between trains and street traffic at 209 rail crossings between downtown and the harbor.



The central element of the Alameda Corridor Project is the 16 km mid-corridor trench that now carries all rail cargo out of the port, without encountering surface vehicles.





Caltrans director Jeff Morales discusses the Alameda Corridor Project's benefits with U. S. Secretary of Transportation Norman Mineta.

course of construction, the project required more than six million pounds of rebar, 750 000 cubic meters of concrete, the removal of 4 million tonnes of dirt and the relocation of 1,700 lines for sewers, gas, electricity and fiber optic service.

BENEFITS OF THE PROJECT INCLUDE:

- More efficient freight rail movements
- Reducing traffic congestion by eliminating 200 at-grade crossings
 - Improvements to Alameda Street
 - Multiple community beautification projects
 - Cutting train emissions up to 28 percent
 - Slashing delays at railroad crossings by 90 percent
 - Reducing noise pollution from trains by 90 percent

The project will virtually double the average speed of rail lines serving the ports, triple the number of train movements each day and reduce emissions from idling automobiles and trucks by up to half.

International trade accounts for one of every 15 jobs in the five-county Southern California region, according to the Los Angeles County Economic Development Corporation. The ports of Long Beach and Los Angeles are the two busiest container ports in the country and, together, the third busiest port complex in the world. The ports handled more than \$200 billion in cargo in 2001.

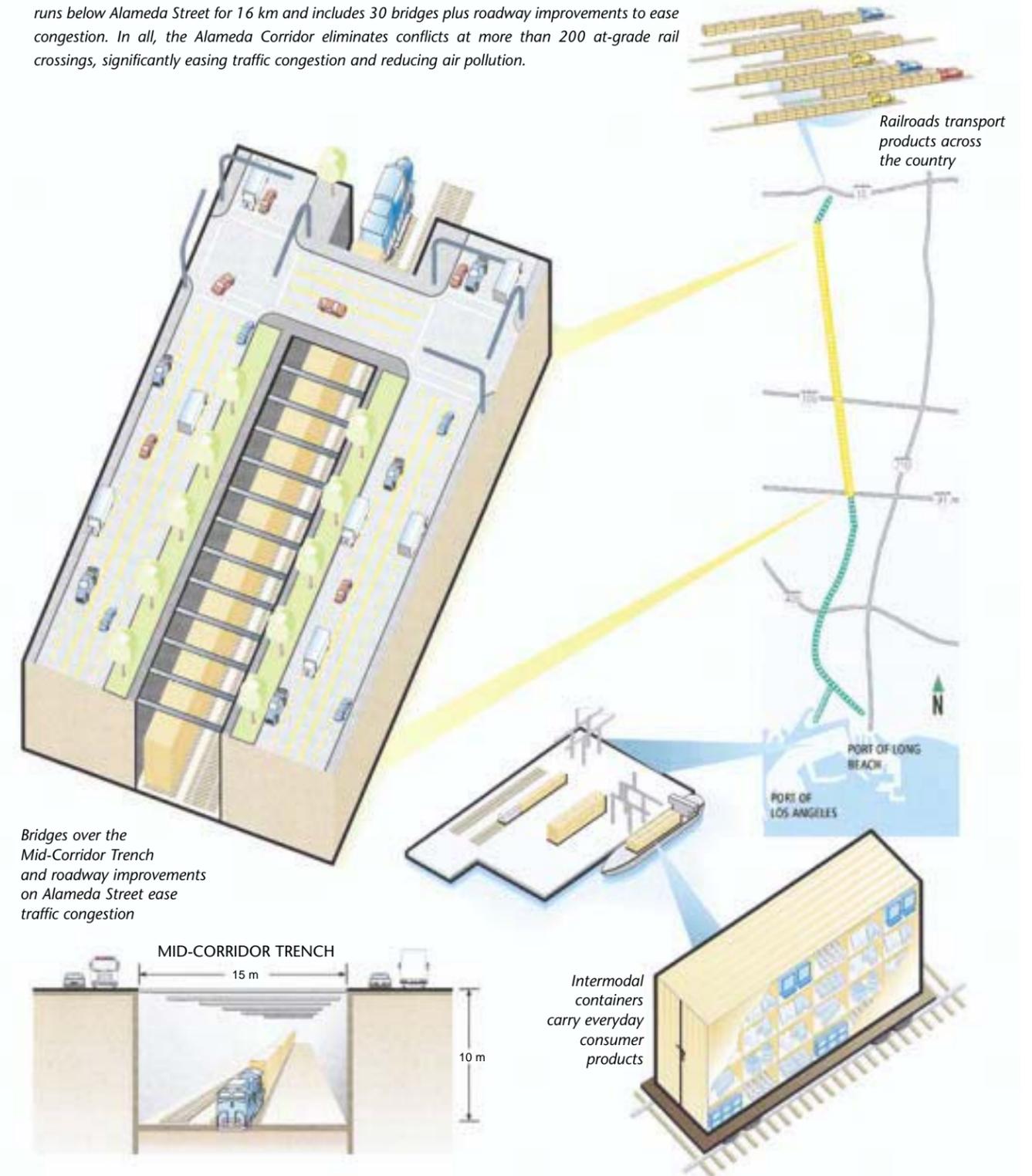


A L A M E D A

CORRIDOR

SPEEDING PRODUCTS ON THEIR WAY, EASING CONGESTION

The Alameda Corridor links the ports of Long Beach and Los Angeles to the rail yards near downtown Los Angeles via a 32 km freight expressway that speeds everyday products to store shelves and expedites American exports to overseas markets. The centerpiece is the Mid-Corridor Trench, which runs below Alameda Street for 16 km and includes 30 bridges plus roadway improvements to ease congestion. In all, the Alameda Corridor eliminates conflicts at more than 200 at-grade rail crossings, significantly easing traffic congestion and reducing air pollution.



Bridges over the Mid-Corridor Trench and roadway improvements on Alameda Street ease traffic congestion

Intermodal containers carry everyday consumer products

U.S. 97

A Ride In Shasta's Shadow

Photos by Don Tateishi



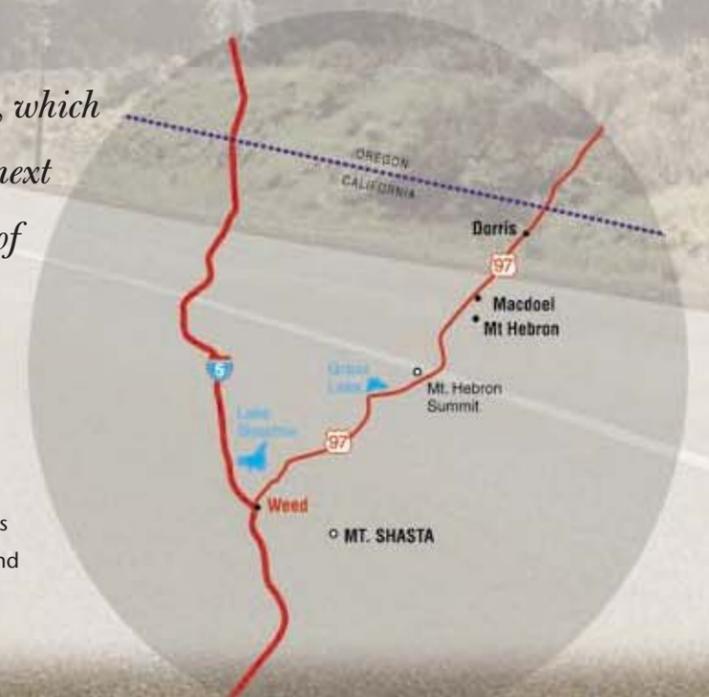
You enter California from Oregon on U.S. 97 unceremoniously, after a jaunt across the mammoth Klamath Basin.

The bug station is still some 9 km down the road at Dorris, as if they'd like you to get used to the easy life and prosperous times of the Golden State for a few miles before you're officially there.

At the state border, Mount Shasta, which will be a guiding presence for the next 100 km, peeks over the ridge of Dorris Mountain.

The weather, at about 1500 m altitude, is icy and the mountain air has a freshness that someone ought to bottle up and pipe into convalescent homes everywhere.

U.S. 97, in Shasta's monumental shadow, drains traffic down out of eastern Oregon, channels it and dumps it onto Interstate 5 at Weed.





but an earlier settler dynamited a hole into the bottom and a lot of the water leaked out into the substrata, so it's only a meter or so deep. It really is a grass lake, though, with channels of deep blue water coursing through the waving grass. Canadian honkers, snow geese, teals, egrets and sandhill cranes find its waters a great place for a nosh. With its blonde grasses, bright blue water, green

U.S. 97

uplands and surrounding pine and juniper, it looks as if it would make a great, hard-to-solve jigsaw puzzle.

Just a little farther on is Caltrans' maintenance station where we find Curtis Crane, leadworker, and Tonka, the resident rottweiler who keeps things secure. Today, Crane is readying a sweeper to go out and do some shoulder work up by Dorris Mountain. He's a bit sheepish about the condition of U.S. 97's pavement as you come across the border. Its ruts and bumps contrast starkly with Oregon's baby-smooth pavement; there's even a "Rough Road" sign as a warning. Crane is hoping for a CAP-M soon to restore Caltrans' respectability.

Various New Age types, along with Shasta's original inhabitants, the Shasta Indians, have a deep spiritual interest in the mountain. Back in 1987, 5,000 New Agers, including I AM Activity, the Planetary Citizens, the Brotherhood of the White Temple, the Radiant School of Seekers and Servers, the League of Voluntary Effort (LOVE) and a Zen monastery, got together for a "harmonic convergence." There was even a temporary lull in hot spots around the globe — North and South Koreans, Arabs and Israelis, Catholics and Protestants in Ireland — but Shasta's mythical powers apparently weren't strong enough to overcome those historic grudges.

Down the road apiece is MacDoel, population 400, which boasts its own flagpole, standing in front of the post office, but at only about six meters high, it sports a much smaller flag than the one in Dorris. MacDoel appears to be a vast repository for inoperative vehicles and farm equipment. The speed limit through MacDoel is 55 mph.

U.S. 97 is a working highway, make no mistake about it. Almost half of the vehicles are trucks, packed with raw

materials on their way to cities or loaded with finished goods going back to the country, and most of the other half appear to be pickups or sport utes. The utes don't look like the ones you'd find in Woodlake or San Marino, either. These have plenty of mud and dents and often a dog of unspecified ancestry hanging out the window. They are driven by people in plaid, woolen shirts. Probably not affiliated with the League of Voluntary Effort.

Cross the Mt. Hebron Summit and then you're onto Caltrans' roadside rest and interpretive center at Grass Lake. This lake, probably several hundred hectares, is nifty and, like so many things shaped by Shasta's volcanic emergence, not what you'd expect. It used to be deeper,

The gale that blows through here wears out one of Dorris's flags every couple of months or so; at \$1,500 per flag, that means the Chamber of Commerce and other Dorris businesses have to maintain a continuous round of pancake breakfasts, barbecues and other fund-raising activities to pay for them.

There was a forerunner to Dorris in this area: the town of Picard. But when the railroad came through in 1904, the townfolk picked up Picard and moved it to some land donated by a rancher whose last name was Dorris, hence the name. The store in which the Butte Valley Saddle Company is now housed remained open during the move, which took several days.

Route 97, Dorris' main street, makes two sharp, right-angle turns, something of a concern to the couple thousand trucks that run through here every day. Local residents are also anxious about that, so Caltrans has proposed a number of fixes. One of these, a bypass around the city, has Mr. Koppenhafer and other Dorris business owners on edge.

Scooting south out of Dorris, the traveler is struck by the immensity of this mountain valley, a checkerboard of fertile fields in various stages of cultivation, surrounded by ridges that turn from green to blue in the distance, finally to merge with the blue of the sky — blue on blue. They grow a lot of strawberry plants here that are dug up and shipped to strawberry patches all over the place, but it really feels as if the Marlboro Man, in defiance of that billboard, should ride his cayuse out of the trees with a smoke in his jaw.

Virtually filling your windshield is Mount Shasta, elegant in its snowy fastness, perhaps America's most beautiful mountain. It is in a class by itself, like Michael Jordan. It will dominate your view for the next 100 km.

This spectacular volcano, at 4316 meters altitude the second highest of the Cascade volcanoes, is dormant these days, but you can still smell the sulfur if you get up toward the top. Mount Shasta is rumored by some to be the home of the underground city of Telos, whose 1.5 million inhabitants have supposedly thrived in its underground tunnels and cities for hundreds of years.

But here, at the top of the state, after cresting a set of rolling, juniper-studded hills, the first settlement you're into is Dorris, "California's first friendly town." This message is partially obscured by California's first billboard, a message that proclaims that "Smoking Causes Impotence."

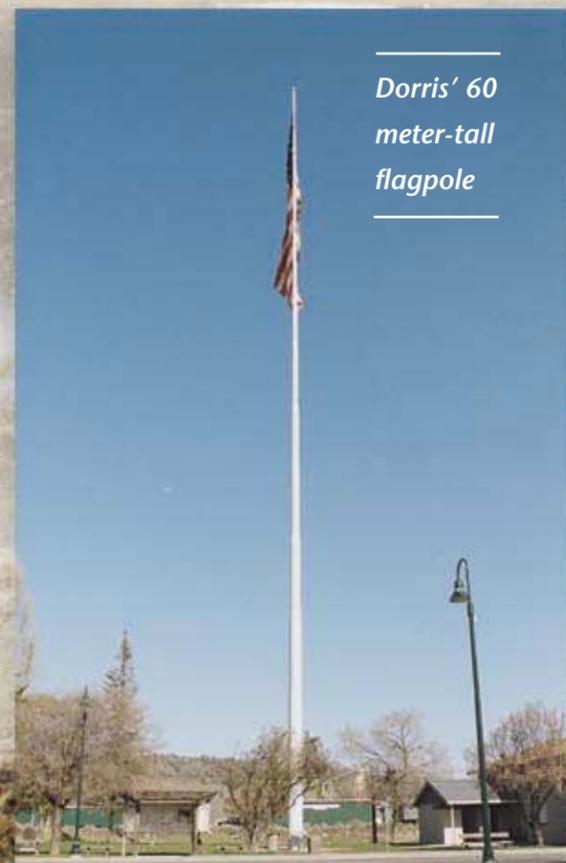
It'd be just about impossible to miss Dorris, at the north end of Butte Valley, because you round a corner and there, sticking like a hypodermic needle full of patriotism into the sky, is Dorris' 60 meter-tall flagpole, which the town boasts as the tallest west of

the Mississippi. Back in 1996, the Lion's Club and others hereabouts got together and raised \$50,000 to anchor this standard in about seven meters of concrete so it'd withstand Butte Valley's fierce winds.

"We only have two or three windy days a year," says Conrad Koppenhafer, president of the Dorris Chamber of Commerce and owner of the Butte Valley Saddle Company. But Koppenhafer defines a "windy day" as one on which a blacksmith's anvil, hung at the end of a 3 meter chain, will stand straight out.



Dorris' 60 meter-tall flagpole



Crane likes it here. He spent his first seven years with Caltrans working out of North Hollywood and has been finding himself in more primitive places ever since; his wife now says, "This is as far as I go."

Each kilometer takes you past another view of Mount Shasta. You're on the north side of the mountain, so there's a lot of snow up there, but as you curve around toward the west, the ridges begin to peek out of the snow and subtle textures of rock begin to appear. You can't help wondering what it was like when this mountain was emerging. The most recent eruption was in the late 1700s.

Cross the next summit and you're on a downgrade toward the Shasta Valley, another large alpine valley whose main artery is Interstate 5, way across there. It, too, is a pastiche of pines, tilled fields and hillocks plopped down by one or more

of Mount Shasta's volcanic convulsions. At your feet is Lake Shastina, an attempt by a local developer to improve on nature, which seems pretty futile when you gaze up at Shasta. Shastina's arid shores are dotted with mountain cabins.

On a windswept plateau flowing out from U.S. 97, you run across a mysterious sign, "War Memorial and Labyrinth." Sculptor Ric DeLugo, a Vietnam vet, has made an impressive tribute to his military brethren here, throwing up about a dozen very emotional steel sculptures that depict war scenes and the anguish of those for whom there was no homecoming. He and partner Dennis Smith got a number of public agencies involved and planted 55,000 trees to memorialize the fallen vets.

U.S. 97 courses along Shasta's majestic flank for another dozen or so kilometers and ends at Weed. A lot of people snicker at this town for the wrong reason. Weed is not named after a noxious plant form, but for Abner E. Weed, a

Mainer who, in 1901, moved to California and built a lumber mill called "Mill No. 1," to set the town on a course that it follows even today, however fitfully. Weed used to be a company town, with the post office, store, depot, school, church, hotel, homes and other buildings (and maybe their inhabitants) all owned by the mill. It had a string of names, including "Rabbit Flat," "Whiskey Row," "Stringtown" and "Camino Row" before Weed became its moniker.

Today, about 3,000 people live in Weed, which has survived the twin calamities of

Interstate 5, which bypassed it, and a major slowdown of the lumber industry. Abner Weed's mill is now owned by Roseburg Timber Products of Oregon. But the doughty folks of Weed survive. Main Street is busy. The company store has been transformed into the Weed Mercantile Mall, and along the town's formerly utilitarian main street are the Drop of Joy Self Discovery Center, Richter Scale Real Estate, a chiropractor's office, an establishment advertising acupuncture and massage, Main Street Grooming for dogs, and Prom Nails by Cory.

— Gene Berthelsen



Weed, California



Truckee GETS ITS STREETS BACK

Photos by Ed Andersen

On any given ski weekend in winter or sun-splashed weekend in summer, the tiny mountain town of Truckee, California — a stepping stone to Reno's gambling tables and Tahoe's playland — is paralyzed by an unending stream of cars and trucks crawling down its main street. And when an 80-car train chuffs up the middle of town on Union Pacific's tracks, the paralysis becomes a mess.

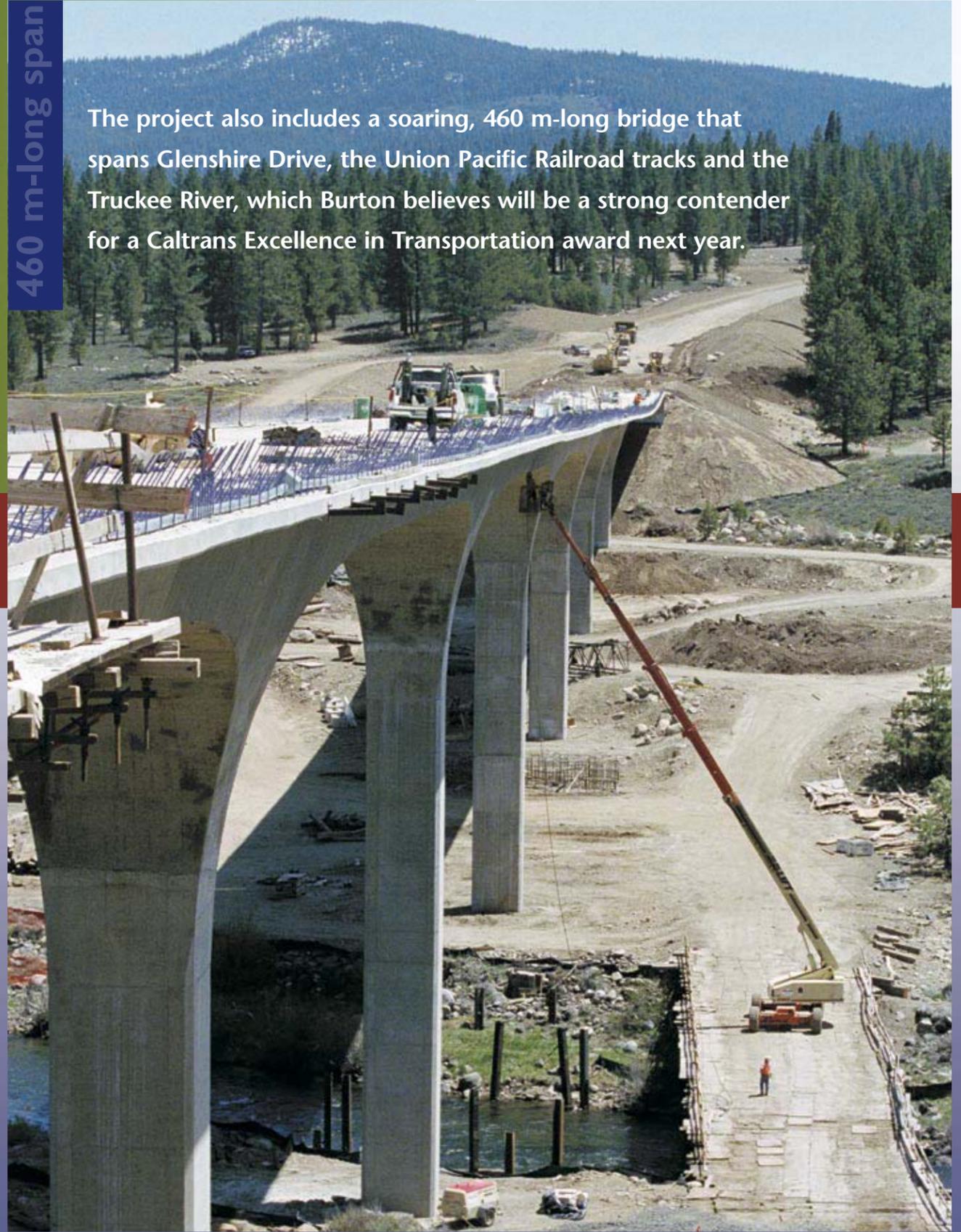
A Caltrans project, to reroute State Route 267 around the town and give the citizens of Truckee back their streets, is now 80 percent complete, under the stewardship of Resident Engineer and 40-year Caltrans construction veteran Bob Burton.

The \$33 million project, which started in August of 1999 and will be completed later this year, has been finished in six-month bites between May and November, to meet the conditions worked out with various permitting agencies

and at the behest of Mother Nature, who coats Truckee with a blanket of snow for several months each year.

In addition to 3.8 km of new alignment for State Routes 89 and 267 and various local street improvements, the project also involves a 3.0 km-long change in vertical alignment and rehabilitation of Interstate 80 to accommodate a new interchange. The project also includes a soaring 460 m-long bridge that spans Glenshire Drive, the Union Pacific Railroad tracks and the

460 m-long span



The project also includes a soaring, 460 m-long bridge that spans Glenshire Drive, the Union Pacific Railroad tracks and the Truckee River, which Burton believes will be a strong contender for a Caltrans Excellence in Transportation award next year.

Truckee River, which Burton believes will be a strong contender for a Caltrans Excellence in Transportation award next year.

This job, just a few kilometers from where the legendary Donner Party met its famous end (it crosses the Donner Trail, which is marked as an environmentally sensitive area), has presented a number of challenges, Burton says. "Each year, when the job shuts down, it has to be winterized against the harsh elements that come with the High Sierra's 1800 m altitude."

The construction work, by MCM Constructors of North Highlands and Ladd and Associates of Redding, is being performed under the close scrutiny of the Lahontan Regional Water Quality Control Board, the Environmental Protection Agency, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service and the California Department of Fish and Game, all of which have a strong interest in protecting the pristine waters and wildlife of the Truckee River.

"It means a set of Best Management Practices to assure that when the job closes down, any earth that has been disturbed has to be stabilized, either by placement of imper-

meable membranes or chips and duff. Runoff is contained by silt fences, hay bales and settlement basins and rock at entrances to streams, for energy attenuation," Burton says.

The job's location on a main route between California and the gaming playgrounds of Nevada has other consequences. One of these is a larger-than-usual percentage of tired and drunk drivers heading down the highway, an especially serious condition when it is necessary to do night work, which has been necessary at times because of the short work windows. "I am especially thankful for the COZEEP program (Caltrans' highly successful use of California Highway Patrol officers) to keep traffic in work zones under control," Burton says.

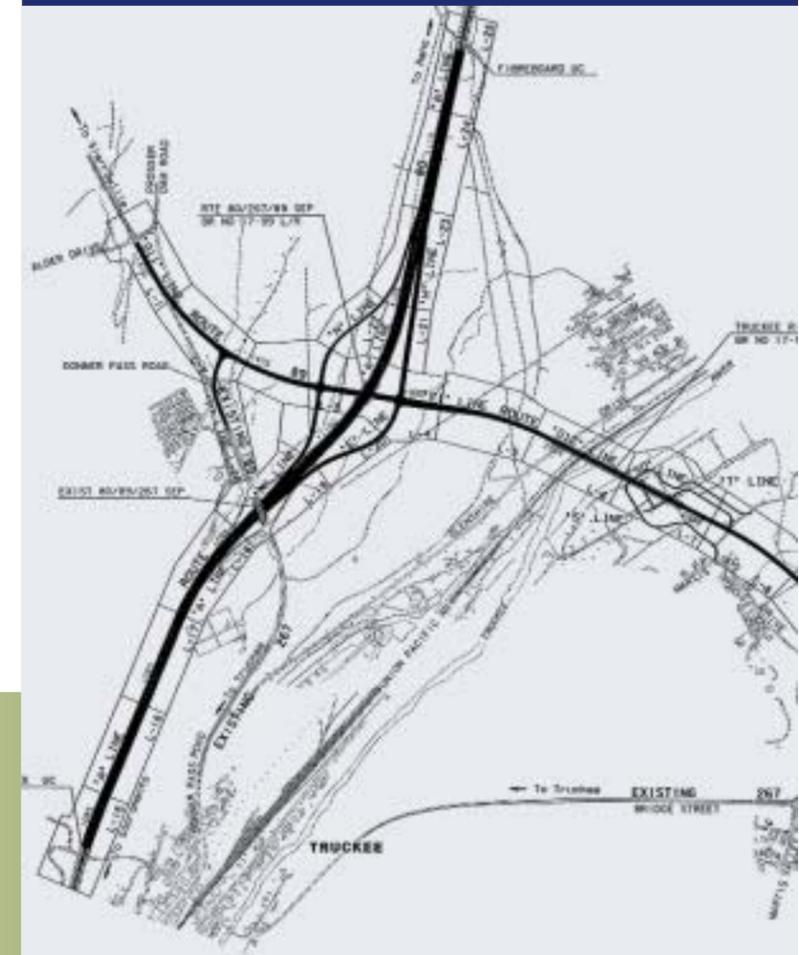
The job contains a number of settlement basins to retain silt. The basins, which feature concrete dams and rock energy attenuators, are designed to allow mechanical cleanouts to restore them for future winters' retention.

Burton gives a thumbs-up to District 3's design staff. "We got an especially good set of plans," he says. He's up to Change Order #65, a relatively low number, given the size of the job. One of these involved an agreement with the City of Truckee to leave the existing eastbound 80-to-southbound 267 and northbound 267-to-westbound 80 access in place and combine them as collector ramps in the new interchange. The change was made at the request of the city of Truckee.

"Taking the ramps out would have created a circuitous route for traffic trying to get into Truckee at this location," says Burton. He cites the effort to work with the city as a victory for context sensitive solutions.

Another change order involved replacing the originally-specified asphalt concrete pavement with Portland cement concrete. The original structural section had been approved to use PCC, then changed to AC to meet budget. It was changed back to PCC—a much more durable surface in the Sierra winters —when contract funds were available.

The project's location at the top of the Sierra requires that the reinforcing bar on all of the structures be coated with epoxy to forestall corrosion from de-icing salt. On the Truckee River Bridge, the railings contain a longitudinal set of pipes that will eventually become an element of a system



Above: the Truckee Bypass project contains a number of settlement basins to protect the waters of the Truckee River.

Below: an agreement between Caltrans and the contractor made it possible for large granite rocks to be preserved as interesting features of the alpine landscape.



special features

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partnering

“Partnering on this project is informal. I’ve worked with MCM Constructors on other projects, so when we had our pre-construction meeting, the contractor said, ‘I know you; you know us. Let’s go build a bridge.’ ”

to spray de-icing chemicals onto the bridge deck when weather conditions warrant. (This feature will be covered in-depth in a future *Journal* article.)

Burton gives high marks to Dave Catania, the Structures representative on the job. “He has made coordination between roadway and structures work, especially with the need to winterize the job, a much simpler task than it might have been.”

After 40 years in construction, Burton likes to say that “gray hair counts for a great deal.” When asked if Caltrans has entered into formal partnering on the project, he says, “Partnering on this project is informal. I’ve worked with MCM Constructors on other projects, so when we had our pre-construction meeting, the contractor said, ‘I know you; you know us. Let’s go build a bridge.’ ”

A particularly felicitous outcome of this attitude is that when MCM ran into a rock on one of the cut slopes that seemed to be “connected to the center of the earth,” Burton worked out an agreement with the contractor, District Design and Environmental, not only to leave it in place, but to allow the placement of other large boulders that would have been expensive to dispose of in embankments, creating an enhanced landscape that mimics the earth and granite of the project’s surroundings.

“Caltrans got some nice landscaping rock for free, the contractor was spared the expense of disposing of the rock off the job site, and everybody gained,” Burton says.

It is clear that Burton likes his work. He is glad to have had a part in building a project that, while providing safer and easier access to the Sierra playland, helps to preserve its fragile environment—and he’s looking for an Excellence Award for the bridge. A walk out onto the Truckee River Bridge gives him an opportunity to wave a hand toward the panorama that will confront a driver who has turned onto Route 267 from Route 80.

“Look at this,” he says. “In front of you is the Truckee Valley; under you, the river; to the right here is the town, and out in front, the Sierra, with the ski runs of Northstar-at-Tahoe coursing down the mountain in front of you. Couldn’t get a better job than this.”

– Gene Berthelsen



Bob Burton



“Look at this,” Burton says. “In front of you is the Truckee Valley; under you, the river; to the right here is the town, and out in front, the Sierra, with the ski runs of Northstar-at-Tahoe coursing down the mountain in front of you. Couldn’t get a better job than this.”



Walls come in many sizes and shapes. Some, like the Great Wall, Hadrian's Wall, the Wailing Wall and even Wall Drug Store along Interstate 90 in South Dakota, have achieved a degree of notoriety.

Most walls, however, are anonymous, providing an important function with little or any fanfare.

So it is for the thousands of kilometers of median barrier and guardrails that millions of motorists pass each day on California's freeways and two-lane highways.

For more than 50 years, these barriers have been a common feature along California highways, keeping vehicles from careening across freeway medians into oncoming traffic or veering off a steep curve into a canyon or creek.

For Caltrans engineers, the barriers—steel cable, steel beam and concrete—have literally been lifesavers.

The debate over the appearance of highway barriers, however, is not that simple.

HIGHWAY

BARRIER

Photos by Don Tateishi and Ed Andersen

"I saw the angel in the marble and carved until I set him free."

-Michelangelo

On one side are the traffic safety engineers and maintenance crews who have to maintain the barriers.

On the other are the public and the Caltrans professionals whose job it is to protect the environment and enhance the aesthetic quality of the transportation system.

"The safety value of highway barriers is without question," says Jack Broadbent, Senior Landscape Architect in the Office of Landscape Architecture.

But that is where the unanimity of opinion ends.

"The highway system is like a hallway in your home. Most people prefer some pictures or wallpaper to a gray, blank wall. It really is a quality of life issue," Broadbent explains.

For the public, the issue of landscaped medians and the appearance of the barriers designed to prevent crossover accidents is important. On freeways where a barrier is proposed, the look of the barrier routinely becomes a major topic of discussion between the public and Caltrans project staff.

Technical experts and maintenance crews counter that the integrity of the barrier must not be compromised and that a smooth concrete barrier is easier to maintain, reducing exposure of maintenance crews to live traffic while making repairs.

The Office of Landscape Architecture, as part of the department's Context Sensitive Solutions initiative, initiated a study of highway barrier aesthetics in 2001 to see if it could find common ground in these conflicting viewpoints.

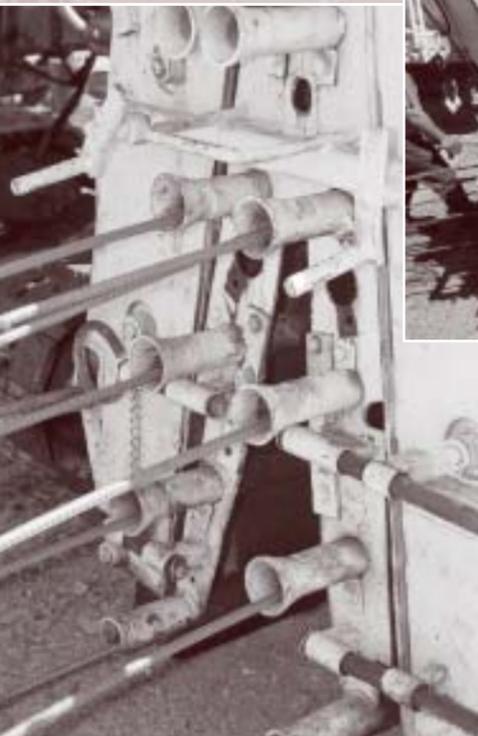
"What we found is that everyone shared the goals of improving safety and enhancing the environment. The challenge was how to get there. We are trying to give project designers more flexibility and tools in determining the best median barrier alternative from both engineering and aesthetic quality standpoints," says Keith Robinson, Chief of the Office of Landscape Architecture.

California has been the national leader in this area, serving as a driving force in a nationwide examination of aesthetic bridge rails and barriers. Caltrans' Roadside Safety Technology Branch conducted a \$434,000 study of different types of textured barriers. From the study, a set of guidelines was produced allowing designers to develop a variety of crashworthy textures. Further, Caltrans is participating in a \$600,000 federal program to produce new barrier textures and bridge rail designs.

A smooth concrete barrier has been a staple in the Caltrans design arsenal for decades.

AESTHETICS

New safety barriers are proving attractive to nearby residents while retaining their vital function of protecting motorists from cross-median and run off-the-road accidents.



New construction techniques offer the possibility that aesthetically pleasing barriers may be produced at a cost near that of simpler ones.

"The smooth barrier is strong and functional," says Rich Peter, Chief of the Caltrans Roadside

Safety Technology Branch, the unit responsible for crash-testing barrier walls. "But beauty is in the eye of the beholder and some people may not see the natural beauty in a smooth concrete barrier wall."

Robinson says the initial challenge was to get the various parties to consider alternatives to their long-held positions.

"For example, Caltrans maintenance prefers concrete because it requires less maintenance. That means that our maintenance people do not have to be out repairing the concrete with live traffic just a couple of meters away," Robinson explains. "Many of our local partners do not like concrete because it is not aesthetically pleasing. They both have legitimate concerns."

"We are trying to give project designers more flexibility and tools in determining the best median barrier alternative from both engineering and aesthetic quality standpoints," says Keith Robinson, Chief of the Office of Landscape Architecture.

The highway barrier aesthetics study focused on three main areas: safety, constructability and maintainability. Various design ideas were developed and crash-tested by the department at the Caltrans Dynamic Test Facility in West Sacramento.

"We had to assure ourselves, first and foremost, that by treating the concrete with a texture or other material, we did not create a situation that could cause a potential safety problem," Broadbent says.

Caltrans researchers tested a number of alternative textures and patterns on the face of a Type 60 concrete barrier, which is 1.6 m tall (including a built-in glare screen) and 600 mm wide at the base.

"The successfully tested textured barrier behaved similarly but not identically to smooth concrete. The barriers, when crash-tested, were proven to be safe and met the design criteria we demanded," Peter says. "However, a car running into a textured barrier

face could sustain more damage than from a smooth barrier because of the natural friction in the texture."

With the safety issue resolved, Caltrans researchers turned to constructability and maintainability of the textured barrier. Crews from MBI Construction in Livermore demonstrated a new method of constructing slip-formed, textured concrete barrier pioneered by Mike Allen of Allen and Sons Construction.

At the MBI construction yard in Lodi, the company poured a 30 m-long barrier and rolled on a dry-stacked rock design into the wet concrete.

The pattern for this design is made of urethane and is attached to a roller. As the concrete is poured, the rollers on the back of the slip-form machine are pressed against the wet concrete like a rolling pin over dough.

Designs that cover the gamut from simulated stone to a beach scene including sun, surf and sand can be imprinted into the concrete.

"Concrete is a material that is pliable and flexible up until the time it dries. It really has tremendous potential in terms of architectural and aesthetic character," Broadbent says. "Armed with this study, the project designers can come up with solutions that meet the engineering criteria, look good and enjoy the support of the public."

Guidelines to implement the study's alternatives for textured concrete barriers are being reviewed by Caltrans engineering management and are expected to be issued before the end of the year.

The department also has evaluated and approved other aesthetic barrier designs. These include steel-backed timber rails and a stone-cast barrier consisting of precast concrete elements covered with real stone.



All barrier designs are tested rigorously for their ability to contain errant vehicles while minimizing damage.



The first planned location to receive one of these environmentally friendly barriers is the section of Highway 163 through San Diego's Balboa Park.

The 5 km-long section of highway slices through the park. The median is 16.8 m wide and is heavily wooded. Last year, Caltrans District 11 engineers responding to a series of accidents proposed installation of a median barrier.

"The public was not happy with the concrete alternative. They supported the effort to improve safety but were very vocal in their opposition to something that detracted from the beauty of the park," says District 11 Director Pedro Orso-Delgado.

District 11 offered a steel-backed timber guardrail as a rustic alternative to concrete. The guardrail features a steel strap on the back of the barrier to provide the needed tensile strength with wood members for a rustic appearance.



Test vehicles are fitted with extensive instrumentation to assure the rigor of the analysis.



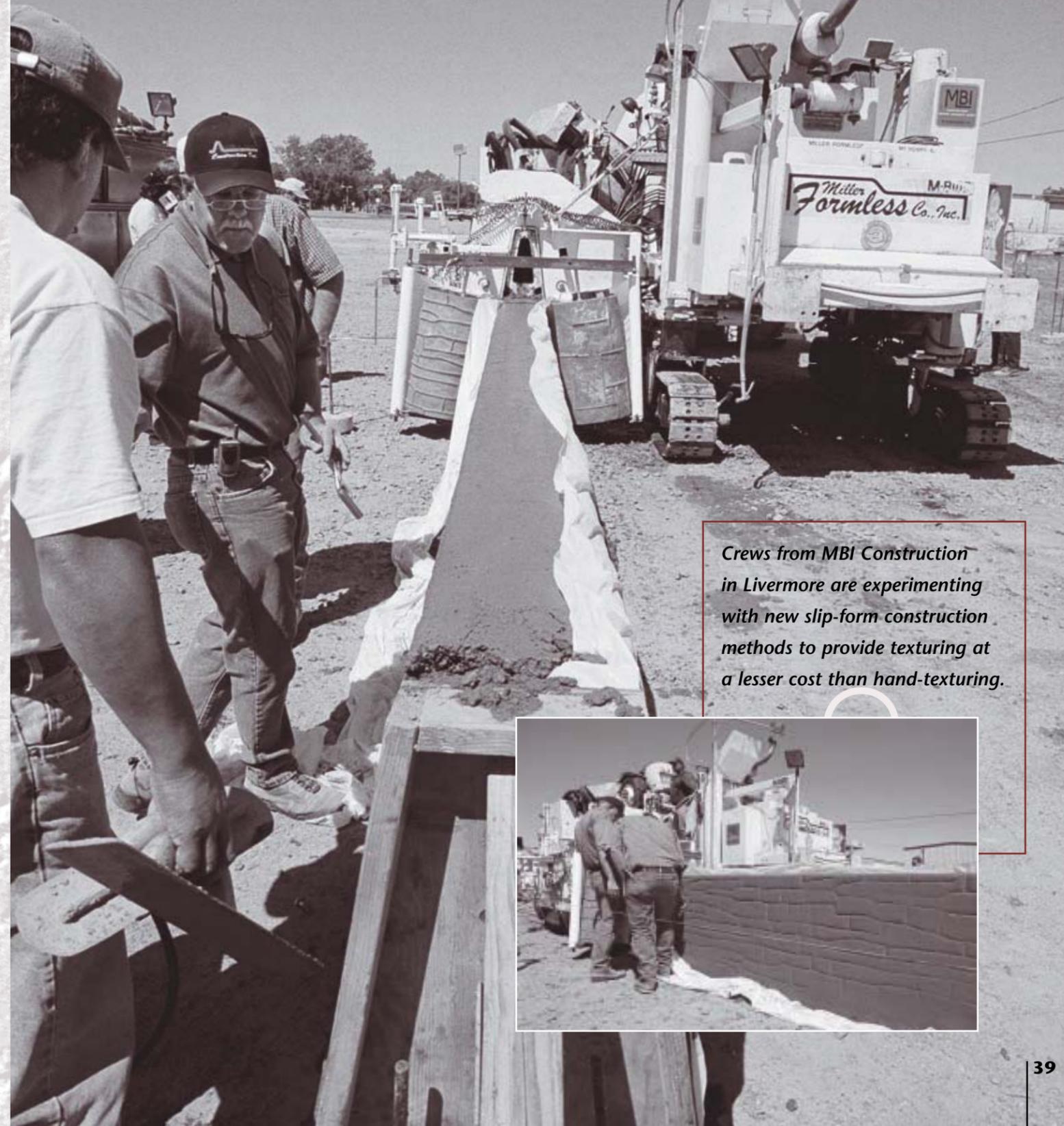
Other aesthetic barrier designs that Caltrans will consider in the future include:

STONE MASONRY GUARDWALL

The stone masonry guardwall features a stone fascia, mortared in place, providing a natural appearance. The guardrail can incorporate local rock to match the surrounding area. The guardrail has a concrete core faced and capped with natural stone.

PRECAST CONCRETE GUARDWALL

The finish treatment on this wall is a simulated stone surface on both sides and the ends of the wall. The surface of the guardrail is stained to simulate individual stones. The design details include a precast mowing strip.



Crews from MBI Construction in Livermore are experimenting with new slip-form construction methods to provide texturing at a lesser cost than hand-texturing.



TRAFFIC CONGESTION RELIEF PROGRAM UPDATE

CALTRANS DELIVERS ON CONGESTION RELIEF PROJECTS

Photo by Lynn G. Harrison

On June 13, 2002, the California Transportation Commission approved funding for the final project in Governor Gray Davis' Traffic Congestion Relief Program, a \$5 million appropriation for a project to ease congestion at the Green River interchange with Highway 91 in Riverside County.

The action resembled hundreds of similar funding votes taken each year by the commission — except for one major difference.

The Highway 91/Green River interchange marks a significant milestone in California's transportation history.

With the commission's action, all of the 141 transportation improvements included in Governor Gray Davis' \$5.3 billion Traffic Congestion Relief Program (TCRP) have received funding.

For Debbie Mah, Caltrans Program Manager for the Traffic Congestion Relief Program, her Sacramento staff of 10 and hundreds of Caltrans technical personnel working on the projects in district and various headquarters units, the commission action has special significance.

"It really has been a team effort and everyone who has had a hand in taking the projects from the idea stage to the point where we are in construction deserves to be proud of what they have accomplished," Mah says. "When the program was announced, the direction was very simple; Deliver the projects. And we did in two years."

In June 2000, Governor Davis unveiled the Traffic Congestion Relief Program, giving Caltrans the task of delivering a series of highway, rail and transit projects specifically proposed to ease traffic congestion in some of the state's most heavily traveled corridors. Caltrans has been working at breakneck speed ever since.

"Has it been two years already?" laughs Mah.

On a more serious note, Mah explains that drivers using these heavily congested corridors are patient up to a point.

"People stuck in traffic understand that projects of this magnitude take time but they want relief. We have worked hard to develop a solid working relationship with our local partners and the various permitting agencies to reduce bureaucratic snafus that could slow down the work.

"We are proud of the job we have done to date but our work is not over. Now, our task is to keep everything on track, get the elements of the various projects out to construction and finish the jobs," Mah explains.

The Green River project is indicative of the type of heavily traveled transportation links that were targeted in the governor's program.

The existing three-lane bridge that carries Green River Road over Highway 91 is being swamped on a daily basis by a growing caravan of motorists who live in western Riverside County and work in Orange and Los Angeles counties.

"It is not uncommon for the morning traffic on Green River to back up more than 1.5 km trying to make the left turn onto the freeway," says Nassim Elias, District 8 Project Manager for the Green River improvements.

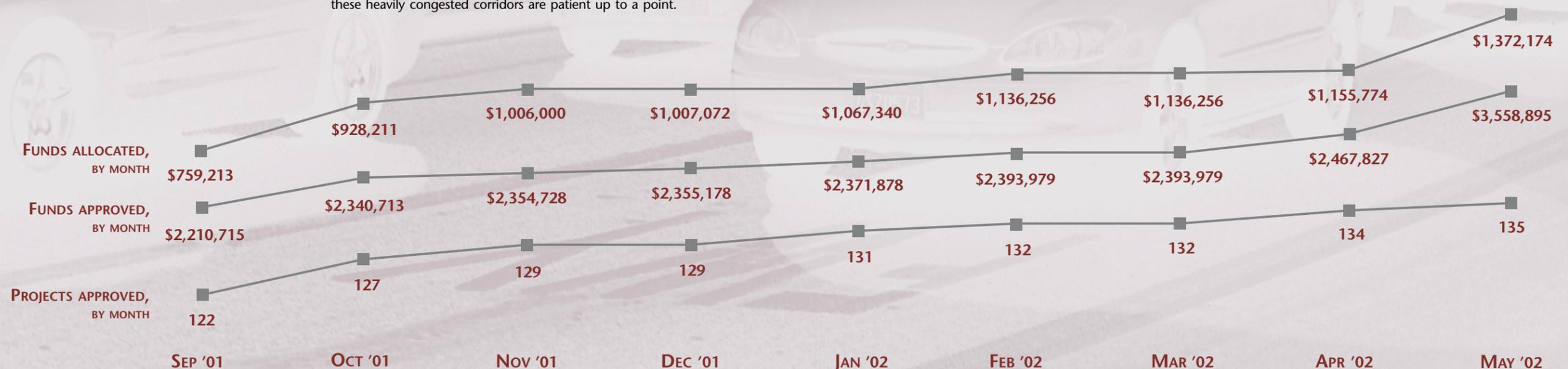
The scenario is repeated in the afternoon as thousands of homeward-bound travelers become too much for the existing off-ramp configuration to handle.

"Green River is a classic example of a rural interchange being asked to serve a growing urban traffic demand. This \$5 million, coupled with \$15 million in state and federal funds, allows us to move forward with a desperately-needed reconstruction of this interchange," says District 8 Director Anne Mayer.

The existing Green River Bridge will be replaced with a new six-lane structure. The ramps will be modified and fitted with ramp meters to help monitor traffic flow onto Highway 91.

Construction is scheduled to begin in 2002 and be completed in 2005.

To date, the commission has approved more than \$3.6 billion of the \$5.3 billion contained in the TCRP.



Completed Projects:

San Diego County—Coaster Commuter Rail - acquire new locomotive

Los Angeles County—West Hollywood repair on Santa Monica Boulevard

Projects Under Construction or in Procurement:

Alameda County—Capital Rail Corridor, Harder Road Overcrossing

Alameda and Contra Costa counties—AC Transit, fuel cell buses and fueling facility

Contra Costa County—State Route 4, widen and add HOV lanes between Railroad Avenue and Loveridge Road in Pittsburgh

El Dorado County—Folsom Light Rail

Fresno County—San Joaquin intercity rail service, construct second main track from Calwa to Bowles

Imperial County—Route 98, widen in the City of Calexico

Los Angeles County—Olympic Blvd/Lemon Street intersection, remodel, install new signals

Los Angeles County—Victory Boulevard corridor, automated traffic signal coordination

Los Angeles County—MTA, Los Angeles-to-Pasadena Blue Line

Marin County—Route 101, HOV lane in San Rafael

Orange County—Route 22, construct soundwalls

Sacramento County—Sacramento Emergency Clean Air/Transportation Program, clean diesels

Sacramento County—Sacramento Regional Transit, low emission buses

Sacramento County—Route 50/Sunrise Boulevard Interchange

San Diego County—North San Diego County Transit District, acquire compressed natural gas buses and transit vans

San Diego County—Route 5/805 interchange, reconstruct and widen

San Francisco Bay Area—Regional Express Bus program, procure suburban and over-the-road express buses

San Francisco County—Balboa Park BART Station, Phase I expansion

San Francisco County—SF Muni Ocean Avenue Light Rail

San Francisco County—SF Muni Third Street Rail Extension

San Francisco/San Mateo/Santa Clara counties—Caltrain Peninsula Corridor, acquire rolling stock

San Francisco and Marin Counties—Golden Gate Bridge, seismic retrofit

San Joaquin Valley counties—Emergency Clean Air District, clean diesel program

Santa Barbara County—Santa Barbara Metropolitan Transit District, acquire and install automated vehicle location tracking system

Santa Clara County—Route 101, widen freeway, improve Rte 101/85 Interchange

Santa Cruz County—Santa Cruz Metropolitan Transit District, low-emission buses

Santa Barbara County—State Street Smart Corridor Advanced Traffic Corridor System

Santa Clara County—Route 85/Route 87 Interchange

Santa Cruz County—Santa Cruz Metropolitan Transit District, low-emission express buses,



Governor's Program Projects now being opened are easing congestion such as that shown above, at Green River Road near the county line between San Bernardino and Orange counties.

Currently, more than two dozen projects are in the pipeline for groundbreakings over the summer and fall.

Caltrans STARRs in Recycling

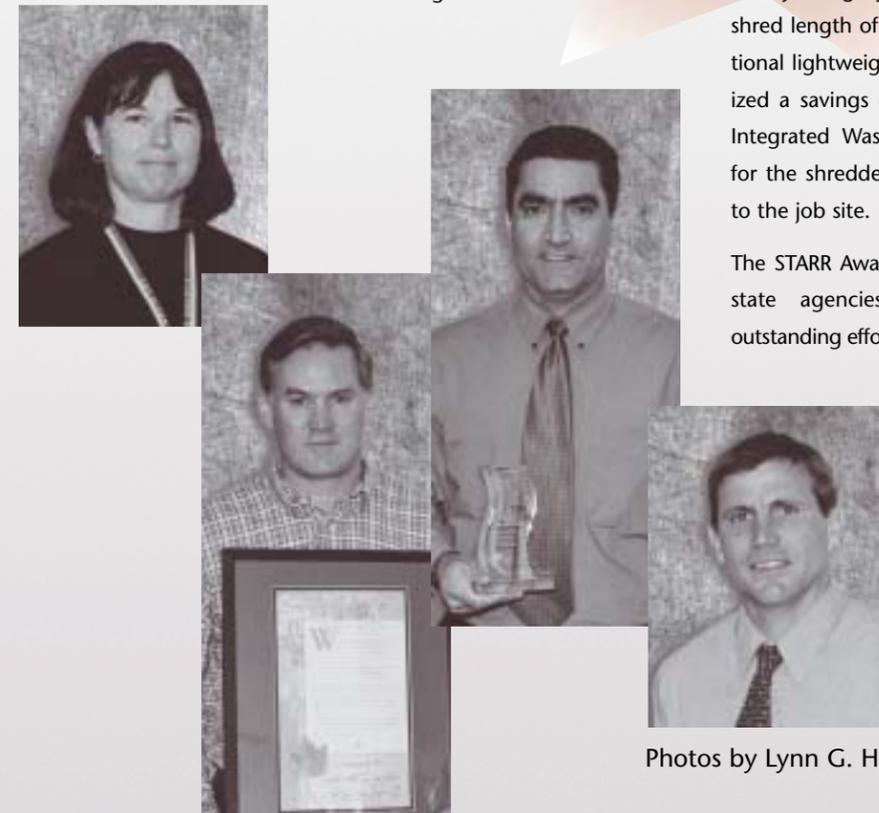
Caltrans, represented by Headquarters Division of Design, has won the 2001 State Agency Recycling Recognition (STARR) Award in the Innovation category for its lightweight fill project on Route 880 at Dixon Landing in Santa Clara County.

This project, a first for California, is likely to generate similar ones in the future. Using tire shreds as lightweight fill material not only reduces the cost of projects; it can also reduce the number of tires entering landfills.

The landfill project used 660,000 shredded tires (enough to fill a football field three meters deep) as lightweight fill for the construction of a new embankment. Because of bay mud in this location, lightweight fill material was proposed; the tire shreds were chosen as part of a Caltrans agreement with the California Integrated Waste Management Board.

The lightweight fill significantly reduced the amount of settlement that would have occurred had normal weight fill been used. By using Type B tire shreds (maximum shred length of 300 mm) instead of conventional lightweight fill material, the state realized a savings of \$450,000. The California Integrated Waste Management Board paid for the shredded tires and for hauling them to the job site.

The STARR Awards are designed to recognize state agencies and facilities for their outstanding efforts in implementing integrated waste management programs as required by Assembly Bill 75. This year, Caltrans received one of only five STARR Awards given out by the board.



Photos by Lynn G. Harrison

Pictured (left to right) are Stacy Patnaud of CIWMB; Dennis Jacobs, HQ, Division of Design - Resource Conservation Branch who initiated the project; Jack Ezekial, current Resource Conservation Senior; and Skip Sokow, District 4 Materials Engineer. Not pictured are Joe Hurley, Project Engineer, District 4 and Rich Peter, Materials Research Engineer at the Trans Lab.

Purcell, Roberts, Moskowitz Awards

Wesley Lum, Richard Shepard and Brent Felker are recipients of the 2002 Purcell, Roberts and Moskowitz awards, the most prestigious awards handed out annually to transportation professionals by the California Transportation Foundation. The awards were announced at the Transportation Foundation's Tranny Banquet on May 8 at the Sacramento Community Center.

For more than a decade, the Foundation, along with Caltrans, has recognized the contributions of Caltrans registered engineers to transportation engineering and management with two awards, the Charles H. Purcell and Karl Moskowitz Awards.

A new award, named for recently-retired Chief Structures Engineer James E. Roberts, was inaugurated in 2002. Roberts is considered one of the world's most distinguished authorities on structural engineering.

Together, the three awards acknowledge those who have made a distinct impression not only on California's transportation landscape, but that of the world. This celebrated group of individuals has developed processes and innovations with far-reaching influence, nationally and internationally.

"With great pleasure I announce that Richard Shepard, Chief, Office of Structure Analysis and Management in Structure Maintenance and Investigation, will receive the first James E. Roberts Award," said Caltrans Chief Deputy Director Tony Harris.

The Roberts award is given to a registered Caltrans engineer at the supervising engineer level or below. Shepard is an internationally recognized advocate and leader in

bridge management procedures. His efforts have brought worldwide recognition to Caltrans and provided outstanding value to the California taxpayers in the management of the California Bridge Inventory.

Shepard lends his expertise and research on Bridge Management systems as a speaker at international seminars and conferences around the world.

The 2002 Karl Moskowitz Award was presented to Wesley Lum, Chief, Office of Infrastructure Research. Karl Moskowitz served for 27 years as a traffic engineer for the

State Department of Transportation; his work in freeway design and traffic flow is still used extensively by planners and engineers nationwide. The award recognizes outstanding contributions by an individual at the supervising engineer level or below.

"Wes Lum has worked tirelessly to promote California's perspective nationally," Harris said. "Wes' active role with the Transportation Research Board has

pushed the Caltrans vision of 'increasing mobility across California' into the national programs of the National Academy of Science."

"As a member of WASHTO and AASHTO's Research Advisory Committee, he has worked with the Transportation Research Board to advance the next strategic highway research program," Harris said.

The California Transportation Foundation awarded the 2002 Charles H. Purcell Award to Brent Felker, Caltrans Chief Engineer. Purcell served as the California State



Wesley Lum, Brent Felker and Richard Shepard, recipients of this year's major transportation awards.

Highway Engineer from 1928 to 1943, establishing California's extraordinary leadership in engineering and in the integrity of what is now Caltrans.

The Purcell award recognizes outstanding contributions by an individual at the supervising engineer level or above.

"As Caltrans Chief Engineer, Brent has moved the State Highway Account from the position of having \$2 billion of cash reserves to having \$7 billion of work under construction on California's highway system by the end of 2002," Harris said. "These accomplishments are made possible by his oversight of managers who are responsible for resources comprised of more than 12,000 staff, over \$270 million in consultant contracts, and an annual operating budget of \$1.4 billion."

– Janis Deverter, Office of External Affairs

2002 Innovations Award

The California Department of Transportation is the winner in the design/operations category of the National Association of State Facilities Administrators' 2002 Innovations Award for Energy Conservation. Caltrans will be recognized formally with a plaque during this year's annual conference in Salt Lake City, Utah.

The program is estimated to have reached more eight million individuals in its promotion of energy conservation at home and at work.

Last year, when California routinely faced the threat of energy shortages and extended rolling blackouts, Caltrans implemented aggressive and innovative energy

conservation measures that contributed to significant energy savings and the avoidance of blackouts. The department is currently implementing 24 energy conservation projects with savings expected to exceed 36,000 kilowatts daily.

Caltrans accelerated its Light Emitting Diode Traffic Signal program this past year. The signals are 92 percent more energy efficient with a life expectancy more than six times longer than the signals they replace. Caltrans is also installing LED signal intersection battery backup systems



Steve Alston, Chief of the Division of Business, Facilities, Asset Management and Security

that virtually eliminate signal down time due to power outages by providing backup power for more than 10 hours.

Departmental conservation efforts have also included an extensive outreach program to employees and their families,

customers, partners and active participation in local energy fairs. The program is estimated to have reached more eight million individuals in its promotion of energy conservation at home and at work.

Caltrans implemented a rolling blackout plan to deal with short- and long-term blackouts. The plan includes three warning levels to ensure employee safety, protect critical data and enable the department to provide essential services during blackout periods. Many other energy conservation measures currently being implemented by Caltrans are keeping power usage – and bills — at a minimum.

Steve Alston, Chief of the Division of Business, Facilities, Asset Management and Security, will accept the Innovations Award for the department.

– Greg Case, Staff Services Manager I, Facilities Energy Program

Nothing Fishy about This One

Designing a fish ladder is something that usually requires a wildlife biologist, a lot of time and tireless negotiation with a swarm of resource agencies. But Cheryl Lenhardt, Resident Engineer on a Route 101 rehab project in District 5, and Bruce Swanger, Hydraulics Engineer, pulled it off in a few weeks. For their efforts, they received special recognition in the form of Superior Accomplishment Awards for their efforts.



After a contract to widen the Route 101 bridge at San Luis Creek had been awarded, the creek was designated as critical habitat for steelhead trout, an endangered species, putting previously obtained permits from the National Marine Fisheries Service in jeopardy unless habitat improvements were made.

The problem was that the environmental clearance had been written about six years before the project went to construction and, since then, two new species had been listed.

The district received the National Marine Fisheries Service's Biological Opinion regarding steelhead trout, one of the newly listed threatened species, after the construction contract had been advertised.

The fisheries service requested the removal of the existing fish ladder and the construction of a series of rock weirs to simulate natural stream conditions and allow more opportunities for fish to pass through the area.

Lenhardt and Swanger decided that the improvements would best be negotiated with the National Marine Fisheries Service while the bridge widening work was under way. They drafted plans and estimates for the improvements, secured temporary right-of-way easements and got a contract change order for the extra

work so the contractor could construct the improvements quickly. Additional funds were needed because the fish ladder was beyond the scope of the original project.

Lenhardt worked long hours and many weekends, while Swanger provided support to identify the requirements for removing the existing concrete and steel fish ladder and replacing it with a more fish-friendly rock weir ladder. The California Department of Fish & Game and federal U.S. Army Corps of Engineers permits had to be extended and the work completed before winter rains and the creek began to flow.

Caltrans Construction Chief Pieplow said, "Constructing a section of stream to function like the real thing is a very specialized area and we were fortunate to have Bruce's experience to guide us. And Cheryl's determination to construct a project in a sensitive area while protecting the surrounding environment was exemplary. She was usually one step ahead in anticipating the proper solution to the environmental dilemmas that pop up during a project. I can't say enough about the work of those two people."

The finished fish ladder will be used in future fish passage training for the state and other agencies.

Lenhardt notes that several other project participants deserve recognition. They include:

- **Bruce Swanger, District 5 designer**, who worked with permitting agencies and designed the fish ladder in record time.
- **Chuck Cesena, District 5 Environmental**, who wrote and pursued the permit extensions.
- **The District 5 survey crew**, who braved snakes, spiders and dense vegetation to obtain design, right-of-way and permit data.
- **John Magorian, District 5 Right-of-Way agent**, who secured the construction access.
- **Burke Construction**, which was environmentally conscious in building the fish ladder.
- **Bob Hurd, District 5 Construction Senior**, whose support was essential to the project.

— Gene Berthelsen

Maintenance Wins a Big One

The Computerworld Honors Program has recognized the Caltrans Integrated Maintenance Management System for outstanding achievement in the world of information technology, naming it a "Computerworld Honors Program Laureate" of 2002. This selection was made as a result of IMMS' successful implementation, innovative approach and the benefits it will provide to Caltrans end-users.

The IMMS Team was officially acknowledged at an April ceremony in San Francisco with other 2002 laureates, an occasion so prestigious that Larry Orcutt, Chief of the Division of Maintenance, donned soup-and-fish for the occasion. The IMMS Project case study will become part of the Computerworld Honors Archive on Information Technology.

The IMMS Team, which has involved as many as 100 staff members in system development, training and implementation, has been working on the project since 1996; the system began its rollout on July 23, 2001.

Management support for the IMMS Project has come from Larry Orcutt, Gil Tafoya, Randy Iwasaki, Thom Niesen, Tony Harris, Jeff Morales, and many key project staff, including Steve Takigawa, Ed Schmidt, Bart Desai, Kris Kuhl and Kari Gutierrez.

"This is a great tool for work and asset management," says Agustin Rosales, who currently manages the project. "It was implemented with the cooperation of Deloitte Consulting and Hansen Information Technologies to help

the Division of Maintenance improve the way it plans, performs and manages maintenance work. Its major component, the Hansen V7.5 asset management system, was designed specifically for use by transportation agencies like Caltrans, worldwide."

"The team is close-knit and hard-working," Rosales says. "They come in and get the job done with lots of dedication, extra effort and often many long hours. That goes for everyone on the team; they are clearly focused on providing a system that meets the end-users' needs, including the best possible training and support throughout implementation. That is why post implementation surveys of end-users rate IMMS a 4.75 on a scale of 1 to 5, with 5 being a high level of satisfaction."

—Gene Berthelsen



Photos by Jon Hirtz



As many as 100 Maintenance Staff members were involved in the development of the Integrated Maintenance Management System. Maintenance Chief Larry Orcutt accepted the Computerworld Honors Laureate Award on their behalf.

Mother Earth Award for Cindi Hebard

Cindi Hebard, who has operated the cafeteria in the Caltrans district office in Eureka for the past 11 years, has received a Humboldt County Waste Awareness award for her recycling program.



Cindi Hebard's recycling program—and her meat loaf—earn equal merit in District 1's cafeteria.

"I realized at one point how many essential greens, vitamins, and minerals I was discarding, so I started taking them home," Hebard says. "I've got lots of red worms busy composting my trash."

On her own and with no funding, she takes the organic waste home, about 25 kg every week, and composts it. She spends about two hours a day in her organic garden. Hebard was singled out for her efforts from among a number of competing private businesses. She received her

award during Waste Awareness Week from Humboldt County, whose goal is the regular diversion of products from the waste stream. Her cafeteria also recycles aluminum and plastics and re-uses plates and flatware to further reduce the operation's waste stream.

"Ms. Hebard has demonstrated the ability of individual operators of small businesses to recycle without significant increases in cost, and provides an example of how one person can contribute to achieving the goals of waste reduction," the county said.

When Hebard learned from Eudene Fults, District 1's legendary, now-retired executive secretary, that the cafeteria business was available, she and a friend put together a bid and a menu plan and submitted it to Caltrans. She won the contract and made a life change that has boosted her of confidence.

"I first realized I had a talent for cooking in a Home Economics class in the 7th grade," she says. "I'd read a recipe, tear it up, then go home and make the dish." These days, she visits restaurants and, if she likes a dish, orders it until she can pick out the individual flavors, then learns to cook it.

Hebard's approach must be a good one. Mike Stapleton, who has worked in District 1 for 19 years, says he and his co-workers have seen a lot of cafeteria cooks come and go, but all agree that Cindi is, by far, the best.

"Oh, yeah," he says. "Have the meatloaf."

"Ms. Hebard has demonstrated the feasibility of individual operators of small businesses to recycle without significant increases in cost, and provides an example of how one person can contribute to achieving the goals of waste reduction."

—Humboldt County Waste Awareness award

A Telly for the Caltrans Team

Caltrans Television Specialist Gary Pund has been named winner of the 2002 Telly Award in a national competition that recognizes outstanding non-network film, video, television productions and commercials. "A Safe Place to Work," produced as a Construction and Maintenance training film, won in the Safety category. Pund wrote, produced and directed the award-winning video. Videographers were Pund, David Gerberding and Steve DeVorkin.

So exactly what are the Tellys? The list of firms that compete in the competition and set the Tellys' standard of excellence provides the best answer. Past recipients include Time Warner, FedEx, MTV, Sony Pictures, Georgia Pacific,

Smithsonian Institute and many others. In 2002, more than 11,000 applications were submitted in 143 categories.

"Caltrans employs an extremely professional and proficient production team whose members have won major awards for their work," Pund says. "It is this team that brought us this award."

Using the same equipment found in major movie and television studios, the team produces award-winning productions for use in many Caltrans divisions.

HQ's Gary Pund, in 17 years of motion picture and television production experience with Caltrans, has received seven Telly Awards and two Communicator Awards. Previously he worked as a member of the staff and faculty at the U. S. Military Academy at West Point in Motion Picture and Television Production. His double major in Theater and Motion Picture Production from Indiana State University and his years of experience have served Caltrans well.

Larry Moore, of the Caltrans Trans Lab, has 22 years of Caltrans film and video production. Moore, who received his master's degree in Radio, Television and Film production from the University of Kansas, currently films all Caltrans crash tests and is working on a documentary of the retrofitting of the Carquinez and Oakland Bay Bridges.

HQ's David Gerberding graduated in telecommunications from San Diego State University; prior to coming to Caltrans, he worked at the NBC affiliate in Seattle. He spent 14 years at KCRA-TV and traveled extensively for a nationally syndicated television news program, "The West."

Steve DeVorkin, of District 7, covers the gamut when it comes to television and production work. A graphic design major from San Jose State in the 1970s, he moved from teaching to owning a photo lab, to appearing in such TV sitcoms as "Cheers" and "Night Court". He now enjoys a career filming documentary works for Caltrans.

Richard Schatzman, of District 4, graduated with a Masters in Art in Media Production and Design from San Francisco State University. His contributions as a director/cameraman

Caltrans photography



Gary Pund, Caltrans television specialist, directs a professional actor in the making of an award-winning Caltrans safety film.

have helped win documentary film First Prize Awards at the Ann Arbor Film Festival and the Oakland Arts Festival. Currently, Richard is proud of his part in documenting an epic public engineering feat—the building of the new east span of the San Francisco-Oakland Bay Bridge.

David Richardson of District 12 comes to Caltrans from the Los Angeles area where he has over twenty years of production experience shooting advertising and commercials. A electronics major from Fresno, he is currently producing a 18-hour interactive "internet-deliverable" training program for the office of Structures Construction. "Internet Streaming media products require broadcast production quality at the start." He is looking forward to his two-week vacation in July when he will shoot documentary footage in Kenya for the Discovery Channel.

"Cooperation and teamwork are key to filming projects statewide," Pund says. "California's far-flung geography dictates that the closest person does the shoot for a production that may be assembled in an entirely different region. Unique talents and ability keep this team on top of what's going on and setting benchmarks of excellence for the documentary film industry."

—Janis Deverter, Caltrans Office of External Affairs

A Ginkgo for the City of Trees

On a coolish, springy day in April, Kim Christmann, Maria Ketcham and Margaret Buss of the Caltrans Division of Environmental Analysis in Sacramento Headquarters, stood together to propel a shovel into the soggy soil of Southside Park, near 8th and W Streets in Sacramento. They were under the watchful eye of Miss Piggy, the division's mascot.



Photo by Jon Hirtz

Margaret Buss, Kim Christmann, Maria Ketcham and city workers get the ginkgo into the ground.

The occasion was the presentation of a gift in the form of a ginkgo tree to the city of Sacramento. The environmentally conscious division donated the money to the city's Gifts to Share Program to purchase a tree for Southside Park, which is in the

neighborhood of the Caltrans Headquarters building. The division selected a ginkgo tree because of its brilliant fall color and, "Well," says Margaret Buss, "because we like them."

As part of the December 2001 holiday festivities, the division raised several hundred dollars for charitable purposes. Most of the money went for stuffing Christmas stockings for homeless children at Mustard Seed School, sponsored by Sacramento's Loaves and Fishes, a charitable organization that provides services for those in need. But, in addition, \$100 was set aside for an "environmental good work."

The mascot, Miss Piggy, a gift from State Historic Preservation Officer Hans Kreutzberg, is a plastic cookie jar that oinks when the lid is raised so you can't sneak a cookie on the sly.

"The planting went smoothly, the tree is thriving and will someday provide summertime shade and fall color for park users," says Ms. Buss.

Art, Engineering or Both?

At the toot of the noon whistle last May 25th in Arcata, one of the strangest collections of vehicles this side of the Baja 250 milled around the city plaza before heading out towards the cow pastures, beaches, bays, rivers, canyons, mud holes and streets of Humboldt County. The creations looked "like a Chernobyl sea food platter," one contestant said.

Aboard one of them, a vehicle that, over the past six years, had metamorphosed from a bulldozer to a hummingbird and finally into a crow, were Brett Johnson, Kelley Schultz and Michael Chang (son of Caltrans' Dave Chang), all of Caltrans District 1. Also from Caltrans came the support crew: Steve Hughes, Lester Kruse, Chuck Dory, Sheila Enright and Kristine Pepper. Steve Hughes' son David and a gaggle of other husbands, wives, children and friends also lent support.

It was the 34th running of the Kinetic Sculpture Race, Humboldt County's wacky cross between human-powered, all-terrain vehicles and, uh, . . . art, a happening that, according to Hughes, starts in Arcata then runs through city streets, pastures, along the surf of the Pacific Ocean, over a precipitous sand dune called Dead Man's Drop, across Humboldt Bay, through the streets of Eureka, through the Eel River, across a mud hole trail, up a watered-down riverbank called the Slimy Slope, and ends finally in the picturesque town of Ferndale, three days later.

"It's pretty much guaranteed that you're going to get muddy," says Hughes, who is proud of the team's motto: "We're not last!" There's an award for next-to-last, but the team hasn't won it yet.



The Crow in sand

The Caltrans entry, under development over the past six years, is made of tubular steel and inflatable catamaran pontoons and is covered with fabric. Its wheels or propeller, depending on whether it is on land or sea, are powered by the three furiously pedaling crewmembers called pilots. "One pilot steers the front tires, another operates the propeller steering system, and the third just pedals, sits up front, and hopes the other two are steering and braking when necessary. It's kind of hairy to be the pilot in the front seat as he has the best or worst view of impending disaster but no control; that's part of the adventure of 'the Crow,'" Hughes says.

"At first, we thought a bulldozer was a good entry for Caltrans," Hughes says. "We were 'Team Bad Dog,' then we called it 'Cat-netic' and then 'Heavy Metal' over the different years as we made revisions to the mechanical operation and body art."

"A couple years ago, we tried to make it look like a rocket ship, but it looked more like a bird, so we called it 'The Big Honkin' Hummingbird', which got shortened to 'The Bird' by the end of the race. Then, this year they had more black fabric at the store than green, so it became 'The Crow.' We seem to eat a lot of that when the smaller, faster kinetic sculptures pass us; but we're reliable, sturdy (another way to say heavy), and have always finished the race," Hughes says.

During the race, which appears to have the fewest rules possible, the teams are allowed to get out and push at certain intervals, "But we pretty much defined the push zones for ourselves," says Kelley Schultz. When you push outside a push zone, there are Kinetic Police to give you a citation, but bribing them is part of the race and perfectly all right (and expected).

Team members estimate that they have eight to nine months of welding, fabrication and sweat in the current



The Crow in water

vehicle and, over the six years, have spent about \$12,000. "We're always looking for lightweight, simple, cheap, easy, 'why-didn't-I-think-of-that?' ideas. We have one of the best rigs in the water. We use a steerable propeller shaft and trailer jacks to raise the sculpture out of the water and make it water-dynamic. This is becoming commonplace now; the teams keep an eye on what works and what doesn't and steal from each other," says Hughes.

"In the first couple years, we learned our engineering wasn't very good. ('We're civils, not mechanical,' he says.) One day as we were pushing the bulldozer, someone told us we needed to get our engineer back to the drawing board. We didn't own up to being the engineers."

The creations looked "like a Chernobyl sea food platter," one contestant said.

But these days, they're much better at it and feel they have a good shot at the coveted mediocre award for finishing exactly in the middle of the pack, which would net them a mediocre car, "something like a 1967 Pacer signed by all the racers with a black magic marker."

And so they vie, not just in Humboldt County, but now in similar races as far afield as Sacramento and Ventura. "It really is an engineering feat to get across all the differing terrain and not kill yourself," Hughes says. "It gets in your blood. We're most definitely looking forward to the next one."

Of Landsknechts and Kampfraus

"Imagine a lush green park with towering trees and freshly cut grass," says Michelle Tucker. "You're at a Renaissance Faire on a fragrant spring day. Laughing people walk by, local merchants hawk their wares and the smells of Cornish pasties and roast turkey legs perfume the air. Merry jesters pass and, across the path, corpulent King Henry the VIII rests with his court."

"There's a drum beat in the distance, quiet at first, but louder as it approaches. You're jostled to the side by a company of soldiers in garish colors and crowned with feathered hats as large as pizzas, with garments slashed decoratively. Some bear

But on spring and summer weekends, they can be found performing at California renaissance faires from South Lake Tahoe to Visalia, from Willits to Sacramento.

Tucker and Davison portray members of a company of German mercenary soldiers, called "landsknechts," and their entourage, circa 1536. The women are "kampfraus," or camp followers. At each faire, they rope off a large rectangular space and set up period pavilions for an encampment. They carry spears, or "pikes," some as long as five

meters. Other weapons include a two-meter textured sword known as a "zweihander," and a shorter one called a "katzbalger."

They set up a kitchen area with handmade tables and chairs. When they're not marching, they gamble or talk. The men practice with their weapons, and the women sit and sew or cook a period meal for all to enjoy. "Folks often stop at our encampment to ask what we are doing or what something is called," Tucker says. "Many bring their children; our landsknechts are always happy to let the little ones hold a pike or try on their armor."

"It's hard work performing at Renaissance faires," Tucker says. "Fridays after work, we stuff our car full of tents, costumes and those long swords. We drive for several hours to the faire and set up our encampment, often in the dark." They pitch their tents and get to bed early so they can be ready to entertain in their Renaissance finery the next morning. Then, after two days, the encampment comes down, the gear is packed away, and away they go to show up at Caltrans on Monday morning.

"Hard work?" Tucker asks. "Yes, but I wouldn't trade it for the world!"



"Landscknecht" Davison and "Kampfrau" Tucker.

spears as tall as trees and others carry swords as tall as a person."

"Fierce and festive, they hustle by, and behind them come their women, as brightly dressed and just as fierce. They carry quarterstaves and water pitchers and sing a proud song in an antique tongue."

Who are these warriors?

Would it surprise you to learn that some are Caltrans workers?

Ms. Tucker and her friend, Tom Davison, are members of a Renaissance faire group called the St. Maximilian Landsknecht Re-enactment Guild. During the week they're happy, hardworking Caltrans employees — he, a Transportation Surveyor in Engineering Technology and she a Human Resources Analyst.

They pitch their tents and get to bed, so they can be ready to entertain in their Renaissance finery the next morning... "Hard work?" Tucker asks. "Yes, but I wouldn't trade it for the world!"

Editor's Notebook

Conrad Kopenhafer is too young and healthy to be an old codger, but he's on his way.

Kopenhafer is the proprietor of the Butte Valley Saddle Company, a rambling store on the main street of Dorris, California.

In Conrad's shop, you can buy a silver belt buckle, postcards with toothless old-timers making corny jokes, or just about anything you can make out of a piece of cowhide: purses, belts, wallets, lampshades or saddles.

Walk into Conrad's store and your nose is treated to the smell of leather glue, which, for a chemical substance, is an astonishingly agreeable aroma and gives you the heady feeling that you might be on Rodeo Drive, rather than on the main street of this gritty farming town.

There's Conrad, looking up and wiping his hands on an old rag and, with a smile, wondering if he can help you.

Conrad makes a lot of these goods. His specialty is saddles, which he tools by hand with a mallet and an awl and a variety of punches, working out intricately distressed shapes and designs that he then stretches over a wooden form to create something you can put on a horse and get a-straddle of. A run-of-the-mill saddle takes him about 40 hours to build and will set you back a couple thousand dollars. One with the all the filigree takes about 60 hours and costs more.

Conrad is the head of the Dorris Chamber of Commerce and is successful enough to have repainted his shop last year and put in new carpet. As a result, Conrad's shop, with his prolixity and especially with the smell of that glue, is a pleasant place to while away an afternoon.

There's a cloud hovering over this small-town ambience, though. The street outside Conrad's shop is U. S. 97, which contains two right-angle turns that slow down the couple thousand trucks that rumble by each day. Once in a while, one of those doesn't quite negotiate one of the turns, resulting in property damage, highway closures, evacuations and sometimes injury. Ten or 20 trains pass through Dorris each day, causing backups at the railroad crossing. Trucks and trains

carrying volatile chemicals can make a catastrophic mixture if somebody makes a mistake.

Caltrans District 2 and the Siskiyou County Transportation Commission have suggested some solutions to that problem, one of which is a realignment of the highway to the east of Dorris. An interchange would bring people off U.S. 97 into town.

The bypass would separate highway and rail traffic, for which the truckers would be thankful. Many folks who live quietly in Dorris's neighborhoods would like to get trucks and traffic off of Main Street, but business owners worry about the loss of traffic.

Bypasses, generally, have a salutary effect on a town, even though you might not think so at first. Usually, there's an immediate impact. Some businesses that are highly dependent on the through traffic may be hurt badly. Some go out of business. Some, serving the local folks, will continue with business as usual. Others actually become healthier as the main street becomes a nicer place to walk, visit and shop. Still, the guy who owns the Standard Station across the street from Conrad just upgraded his tanks; that's a big investment, and he's worried.

Any business is an investment in time, money, integrity and hope. What we do at Caltrans can have a major impact on an investment like that and it's a good thing to stop and consider every once in awhile. We have good reasons for what we do, reasons that involve public safety as well as mobility, but sometimes, we must balance the greater good against the needs of individuals — can't help it.

In each of those businesses, there's a Conrad. At best, we may be able to come up with a project that provides a benefit both to the individual and the community. At the least, it's important to extend a hand of humanity to those we affect.

It's the difference between a benign government and one that isn't.



Conrad Kopenhafer