



CALIFORNIA DEPARTMENT OF TRANSPORTATION

Journal

March-April 2002 Volume 2 Issue 5

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Pedestrian Bridge

Caltrans Salutes
Transportation Excellence

On the Move in Lodi

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Bridging the Carquinez



EXCELLENCE
IN TRANSPORTATION

CALTRANS SALUTES TRANSPORTATION EXCELLENCE

Excellence has been a tradition at Caltrans and its predecessors for more than 100 years, and 17 years ago, the department decided to showcase outstanding work in transportation design, construction, operations and technology by establishing the Caltrans Excellence in Transportation Awards program. The program provides an annual opportunity to salute those in Caltrans, local agencies and in business who are dedicated to surmounting California's transportation challenges.

This is not a derby, nor is it the Oscars. It is an illustration of how public agencies think and work hard to provide a service to the citizens of this state. The Journal proudly publishes accounts of projects that our judges have found to be meritorious, in the hope that the creativity and industry demonstrated therein may be emulated elsewhere.

With all of us working toward excellence, we not only continue a grand tradition, but take larger steps in our pursuit of the most efficient and safest transportation system that can be designed, built and operated.

For these reasons, the Journal recognizes extraordinary performance by those who have contributed notable improvements to our state's infrastructure. The winners of the 2001 Excellence in Transportation Awards program:

By Janis DeVerter
*Caltrans Excellence in
Transportation Awards Coordinator*



 **Caltrans District 11**
City of San Diego

OTAY MESA ROAD WIDENING *Special Recognition for Excellence in Economic and Trade Enhancement*

In 1996, the City of San Diego and Caltrans agreed to widen Otay Mesa Road from four lanes to six to handle high volumes of travel to and from the nearby international port of entry. At the same time, the two agencies proposed redesignating the road as a traversable state highway in order to qualify it for state funding.

With Caltrans oversight, the city completed environmental studies, final design, right-of-way acquisition and construction administration and, in May 2000, the widening. As part of the project, a nearby Brown's Field Airport taxiway was relocated and a protected vernal pool preserve created. Otay Mesa road, the only truck route between San Diego and Tijuana, now serves 50 000 vehicles. It will remain a temporary part of the state highway system until the 905 Freeway is built, about one quarter mile south.

MAXWELL SAFETY ROADSIDE REST AREA

*Transportation Related
Facilities*

To provide increased safety and a reduction in vandalism, a landscape associate in District 3 proposed to make space at the Maxwell Safety Roadside Rest Area for California Highway Patrol officers to do paperwork or provide information to motorists, while establishing a casual law enforcement presence.

On Interstate 5 in Colusa County, the CHP officers' presence deters crime and mischievous activity and offers motorists a sense of increased security. Designs involve three standard components at each rest area: a secure office building, an office positioned for officers to view the area, designated parking and a highway sign informing motorists that the area is patrolled by the CHP.



 **Caltrans District 3 Landscape Architecture**
California Highway Patrol



SACRAMENTO RIVER TRAIL EXTENSION IN REDDING

Transportation Related Facilities - Bicycle and Pedestrian Pathways

The 1.1-km Sacramento River Trail Extension in Redding, between State Highway 273 and Interstate 5, ascends 65 meters through a canyon that once contained a burn dump.

The trail, climbing up the canyon from the river terrace, meanders through valley oak more than 100 years old. It was designed for minimal impact to the oak, manzanita, colanthus, pipevine and wild grape community, which has been reserved for wildlife that thrives along the river.

The trail accommodates all-weather hiking, biking and equestrian use, and its panoramic views of river, mountain ranges and city of Redding have proven popular with hikers and bicyclists. It provides access from residential developments to the Sacramento River and river trail, the Arboretum and a future pedestrian bridge at Turtle Bay.

City of Redding

Bryan A Stirrat & Associates

Lampe Engineering

Guinn Construction

Tullis & Heller, Inc.

TAHOE CITY URBAN IMPROVEMENT

Transportation Related Facilities

This project provided sidewalks in the small Lake Tahoe village of Tahoe City to encourage pedestrian access where no designated or continuous corridor had previously existed.

Where pavement formerly extended from the highway to storefronts, the area was used for parking, drainage, pedestrians and bicyclists in a haphazard manner. Parking has been improved by designating parallel spaces and constructing two off-street public parking lots. This project enhanced bicycle travel by providing additional paved shoulders. It also provided seat walls and large boulders for resting, lighting for nighttime safety and convenience, and bollards to designate space for vehicles and pedestrians.



Placer County Department of Public Works

Tahoe City Public Utility District

K.B. Foster Civil Engineering

Burdick Excavating Company



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SANTA YSABEL EAST RANCH ACQUISITION

The Environment

The Santa Ysabel East Ranch Transportation Enhancement Activity Acquisition provided for the purchase of a portion of approximately 1580 ha of a ranch in eastern San Diego County. The acquisition preserved important natural habitats and high scenic values in a developing area. Caltrans District 11 entered a financial agreement with seven other public and private organizations to conserve the property, a large portion of the original Ranch de Santa Ysabel Spanish land grant, situated near the intersections of State Routes 78 and 79.

The land affords views of rolling hills with oak woodlands, riparian habitat and grasslands. Its acquisition not only safeguards its scenic quality but also preserves habitat that will become a part of a Natural Community Conservation Plan for the region and its visitors, now and for generations to come.

Caltrans District 11 Local Assistance

The Nature Conservancy

CA Department of Fish and Game

San Diego County Department of Parks and Recreation



ALBANY MUDFLAT MITIGATION

The Environment

Required as mitigation for impacts from construction of High Occupancy Vehicle lanes along Interstate 80, this project restored and enhanced shoreline habitat within the Albany mudflat near Interstate 580 in Richmond and Albany. The project removed debris and exotic plants from environmentally sensitive areas, excavated and removed buried hazardous waste, created new wetlands and shore-bird habitat, constructed bio-engineered slope protection and a portion of a multi-use path and installed native plants.

The U. S. Fish and Wildlife Service recognizes the Albany mudflat as one of the most critical bird habitats in the San Francisco Bay. Through careful attention to detail and a commitment to protect and promote the environment, Caltrans has given the public a highly successful, aesthetically pleasing project.

Caltrans District 4 Office of Landscape Architecture

S.F. Bay Conservation and Development Commission

U. S. Fish and Wildlife Service

U. S. Army Corps of Engineers

HIGHWAY 168 SIERRA FREEWAY WILDFLOWER DESIGN

Special Recognition for Excellence in Highway Beautification

The State Route 168 Sierra Freeway, a cooperative effort between Caltrans and the Fresno County Transportation Authority, was completed in December 2000. This wildflower project, developed by the Caltrans District 6 Landscape Architecture Branch, featured a seed mix of grasses and legumes to control erosion and water pollution. With little additional cost, climate-suitable wildflowers, added for soil stabilization, created a low-growing carpet of color from late winter to late spring. Wildflowers in the median provide spectacular color and interest with little or no need for maintenance personnel to enter the area.

The wildflowers complement the views of the Sierra Nevada and provide a transition from an urban to a rural landscape that has become so popular, nearby residents have begun asking for the "mix."



Caltrans District 6 Landscape Architecture



Caltrans Central Region Survey Department

MOJAVE BYPASS REAL-TIME SURVEY

Systems Operations

In January 2000, Caltrans Central Region Surveys opted to use Real Time Surveying to set preliminary right-of-way monuments and construction staking on the Mojave Bypass project. Real-time surveying uses Global Positioning System satellites, a radio transmitter and a radio-linked rover to obtain accuracies in a range of 200 mm.

To monument the new right of way, preliminary stakes were set and surveyed by stringent GPS Fast Static methods and adjusted to the precise location of the monument, achieving time savings of 20-30 percent.

Before construction, crews used Real-Time Survey technology to stake 65 km of tortoise fence, reducing survey crew hours by 50 percent. Slope stakes were set in half the expected time, with desired accuracies. In addition to cost savings, the system improved safety for the survey crew by allowing the base station to be set up away from construction activity.



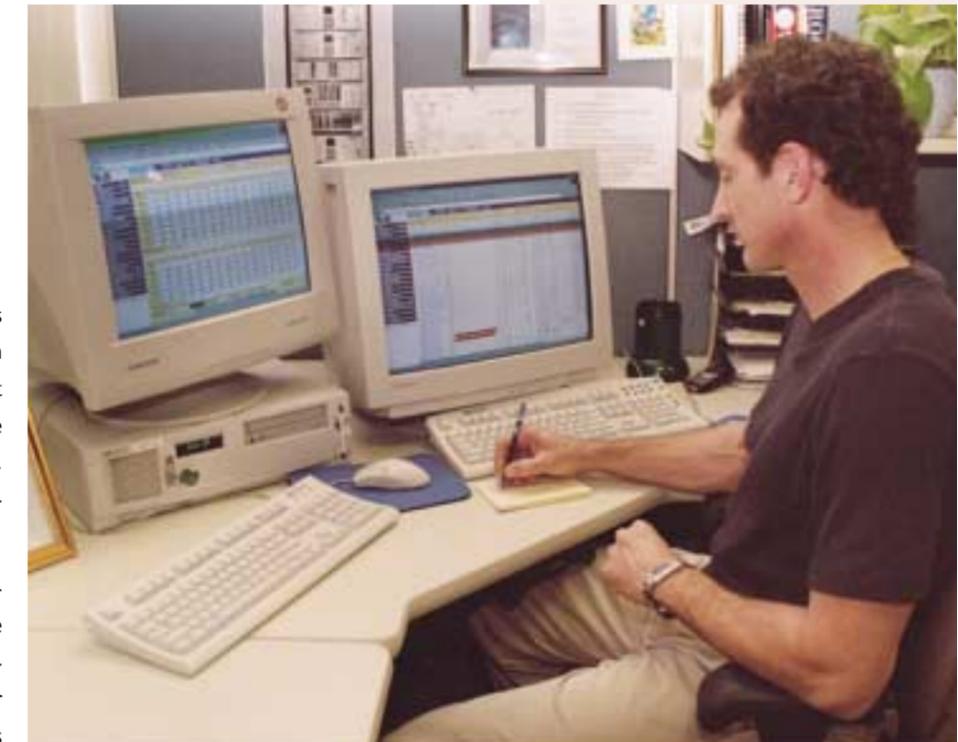
EXCELLENCE
IN TRANSPORTATION

SAN DIEGO RAMP METERING

Systems Operations

Caltrans operates a system of 267 ramp meters in San Diego County, which regulate travel on 420 km of freeways. Recently the district developed a more efficient and cost-effective system to further reduce highway congestion, increase public safety and improve and maintain system performance.

The system is composed of local microprocessors that measure freeway flow, receive commands and return system status to a central control system and operate single or multiple lane ramp signals. The system allows users to manage and monitor the ramp meter operation from a web browser, interfacing with the existing front-end processor and traffic controllers. It features a web server and associated web pages, common gateway interface scripts and a browser to view the various web pages.



Caltrans District 11

Traffic Operations Division

Traffic Systems Branch

IRVINE PEDESTRIAN BRIDGE *Safety*

To reduce the danger of passengers ignoring warning devices and trespassing on foot across the Union Pacific railroad tracks, the City of Irvine developed an innovative overcrossing to provide safe passage between north and southbound passenger loading platforms. Extending the center security fence 60 meters beyond loading platforms prevents passengers from cutting across tracks in pursuit of trains.

Amtrak and Metrolink installed loud speakers for announcements on light poles. Elevators allow easy access to the bridge and a new ramp facilitates handicap access. Benches and shelters allow passengers to relax while waiting for trains. The inclusion of benches along the bridge walkway offers a leisurely viewing area of the spectacular Saddleback Mountains and surrounding area.



-  **City of Irvine**
- Adams/Mallory Construction Co., Inc.**
- Cho Design Associates**
- Caltrans Rail Division**

INTERSTATE 680/STATE ROUTE 24 INTERCHANGE *Special Recognition for Excellence in Traffic Congestion Relief*

Dubbed “Dysfunction Junction” by frustrated motorists before its recent reconstruction by Caltrans District 4, the Interstate 680/State Route 24 interchange now provides motorists with smooth sailing as they navigate its reconfigured bridges and connections.

Originally opened to traffic in 1959 and built to handle 60 000 vehicles, the interchange today accommodates 295 000 daily users. Keeping traffic moving during construction was a continuing challenge. To accomplish this, temporary connectors were built to move traffic through the interchange. As the new connectors were finished, traffic was rerouted onto them and the original structures demolished. Caltrans engineers employed seven construction contracts, using this strategy, for six separate traffic movements. Today, with a highly functional interchange, commuters find their daily lives a great deal easier.



-  **Caltrans District 4**
- City of Walnut Creek**
- Contra Costa Transportation Authority**

SAFETY IN THE SACRAMENTO RIVER CANYON *Safety*

To enhance safety in a 75-km freeway stretch in mountainous terrain where an accident could tie up travelers bound for Canada or Mexico, Caltrans District 2 teamed with Advanced Planning, Environmental Planning, Maintenance, CHP and the Department of Fish and Game to create a master plan for operations, safety, emergency response and an environmentally sensitive design.

The final product included retractable barrier gates for incident detours, CHP/Maintenance turnarounds, animal crossings and flared offset openings with pre-installed, turnable arrow boards. These features improved efficiency, safety, maintenance and operations while maintaining the department’s commitment to the environment.

District 2 increased driver safety by adding the median barrier, and also included elements that allow quick emergency response time, timely crash removal and cleanup and increased worker safety.

-  **Caltrans District 2**
- J.F. Shea Co., Inc**
- Energy Absorption Systems, Inc**



STATE ROUTE 4 WIDENING *Urban Highway*

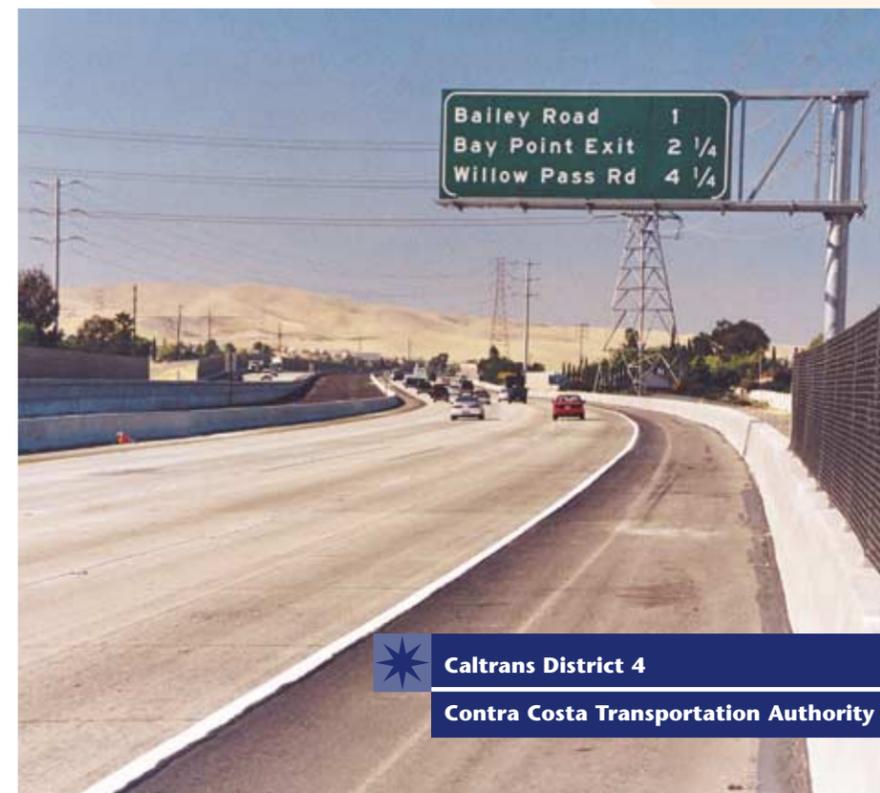
In cooperation with the County of Contra Costa, Caltrans District 4 widened State Route 4 from four to eight lanes to relieve congestion and provide for continued economic development of eastern Contra Costa County. The widening also involved incorporation of High Occupancy Vehicle lanes of 9.9 and 11.5 km. Freeway operational analyses indicate that total person delay experienced on the section and associated ramps has been reduced by 30 percent. Value Analysis concluded that the proposed project demonstrates the best possible engineering design at minimal cost.

Culvert improvements and other drainage features were added to the original project concept, through creative financing, to reduce or eliminate flooding problems. Offsite planting was provided in cooperation with the California Department of Fish and Game and the U. S. Army Corps of Engineers. A collaborative effort and partnership between Caltrans and the Contra Costa Transportation Authority expedited the project to bring congestion relief to this major corridor in Contra Costa County.

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-  **Caltrans District 4**
- Contra Costa Transportation Authority**



ATLANTIC BOULEVARD INTERSECTION *Urban Highway*

The intersection of Atlantic Boulevard with Telegraph Road/Goodrich Boulevard/ Ferguson Drive in the city of Commerce was known locally as the "Mixmaster" because of its complex alignment and confusing signage. The city designed a replacement of the intersection to improve safety and traffic flow, using a traffic simulation model to test the adequacy of turn storage bays and photo imaging to allow those interested to understand the proposed project.

The city redesigned the project area as a single unit with five closely spaced traffic signals operating in a coordinated fashion. New and more visible guide signs assist drivers through this complex intersection. The new bridge, roadways and appurtenances have made this area a positive landmark for the City of Commerce and improved traffic flow and safety for the 50 000 vehicles that use the Mixmaster every day.



City of Commerce

Los Angeles County Department of Public Works

Catalina Engineering, Inc.

Brutoco Engineering & Construction, Inc.



EXCELLENCE IN TRANSPORTATION

RURAL TRANSPORTATION MANAGEMENT CENTER *System Operations*

A low-cost, yet highly functional information and communication system for traveler safety and enjoyment in District 2's north region is the result of an in-house, design-build process that produced Caltrans' first rural Transportation Management Center. Caltrans electrical engineers, building maintenance workers and field maintenance personnel accomplished the majority of construction. The center was up and operating for the major snowstorms of February 2001, 10 months after funding approval.

While TMCs have mostly been deemed appropriate for urban areas, this rural one handles problems of a different nature. More than half the roadways in District 2, including 40 mountain passes, exist at elevations in excess of 1200 meters. Steep grades, inclement weather, wild fires and their effects on road conditions, sparse and patchy telecommunications structures, and a widely dispersed highway system are all conditions this rural traffic management center deals with daily.



Caltrans District 2

Maintenance and Operations

New Tech and Research

Traffic



SANTA CRUZ COUNTY CLEAN AIR VEHICLE FAIR *Public Awareness*

Santa Cruz County's first Clean Air Vehicle Fair in May 2000 was a success. Providing information to neighborhood and community residents on ride-matching, bicycling, carpooling, vanpooling and transit services, this fair promoted useable alternative choices to commuters to help them do their part for clean air. Displays and test rides of electric, hybrid and compressed natural gas cars, bicycles and scooters, electric car conversions and compressed natural gas buses provided the real thing for those who wished to consider alternatives.

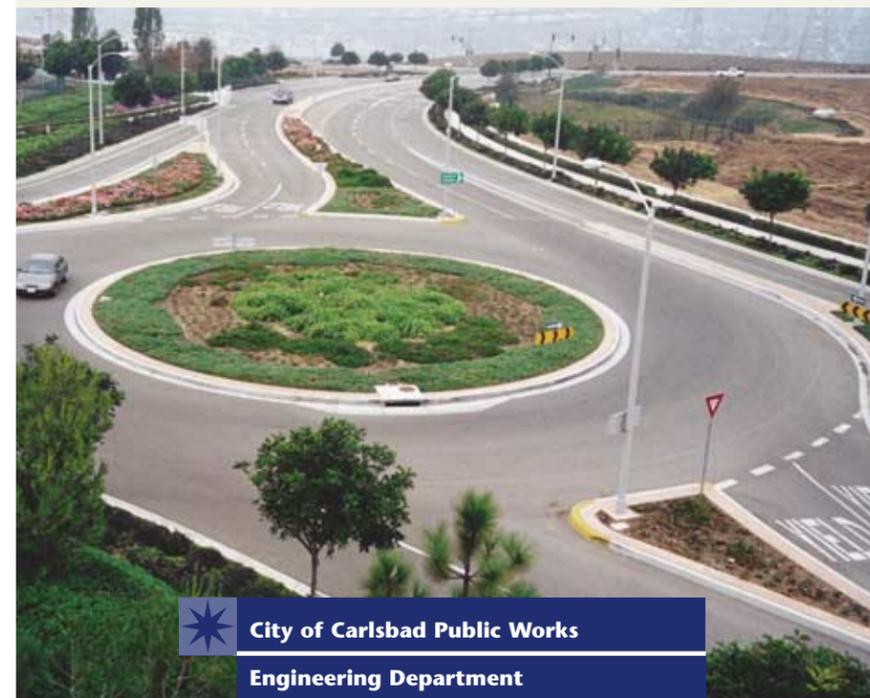


Santa Cruz County Regional Transportation Commission

City of Santa Cruz Public Works

Association of Monterey Bay Area Governments

Monterey Bay Unified Air Pollution Control District



City of Carlsbad Public Works

Engineering Department

LEGOLAND ROUNDABOUT *System Operations*

Located in San Diego County, this roundabout provides more than just an aesthetic entry to the LegoLand theme park. It also allows for free flow of traffic, provides low-cost lighting and maintenance when compared to a signalized intersection and visually enhances the surrounding area with its colorful median planting and landscape. It has operated without any reported accidents since opening in 1999 and is handling anticipated traffic flows as planned.

DEPLOYMENT OF LED TRAFFIC SIGNALS *Maintenance Operations*

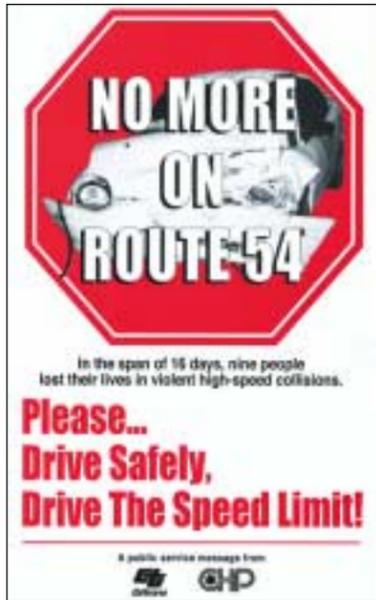
Completion of light-emitting diode lighting for 4500 traffic signals by June 2002 will save taxpayers millions of dollars in annual electrical costs. The signals operate on approximately 85 percent of the power that it takes to fuel incandescent lamps. Additionally, their battery back-up systems are smaller, higher capacity, and far less expensive to maintain than their cumbersome counterparts. Broad applicability of LED signals means a tremendous benefit to the state in terms of less non-operational time, less maintenance and huge cost savings.



Caltrans Division of Maintenance

Caltrans Traffic Operations





Caltrans District 11

NO MORE ON 54 *Public Awareness*

Nine fatalities in three weeks on Route 54 in San Diego County prompted Caltrans District 11's Public Affairs Office to launch an awareness campaign to address the situation. Based on crash information provided by local law enforcement, the district targeted its message to young adults, ages 16-24, the ages of the responsible drivers in each of the three fatal crashes.

The campaign included distribution of posters to high schools and shopping malls near the crash sites. Caltrans joined forces to air paid and free commercials on the local MTV cable station, which boasts a preponderant market share of young adults. Well-received by school officials, business owners and elected representatives, the campaign generated daily discussion in local media. From the start to finish of the public awareness campaign on January 5, 2001, when Caltrans announced the completion of a new median barrier, no crashes were reported along this stretch of highway.



Caltrans District 1 Maintenance and Operations

INTERSTATE 15 IN SAN DIEGO *Special Recognition for Excellence in Context Sensitive Solutions*

The Interstate 15 project in San Diego closed the last gap, known for years as the "missing link," in an interstate highway by constructing an eight-lane freeway through the San Diego neighborhoods of City Heights, Kensington and Normal Heights.

This project shows what can happen when constituents are welcomed and included in the project development process. By providing a forum for community and neighborhood participation, the project team met and even exceeded the needs of those people who were impacted. The 11 overcrossings were designed expressly to knit neighborhoods together by providing pedestrian and bicyclist circulation and open space for parks, plazas, bridges and retail buildings.



- Caltrans District 11 Landscape**
- City of San Diego**
- T.Y. Lin International**
- C.C. Meyers, Inc.**
- AMEC**

INTEGRATED PEST MANAGEMENT IN DISTRICT 1 *Maintenance Operations*

On the environmentally sensitive North Coast, District 1 employees at all levels are participating in an effort to implement effective integrated pest management. Managerial employees have formed a roadside vegetation management advisory committee to evaluate measures suggested by field staff. Local agencies participate in decisions on whether or not to use chemical vegetation control. The district meets in public with any requesting local agency to discuss decisions regarding use of herbicides.

The district recently installed vegetation control mats at several locations where repetitive control otherwise would be necessary and is testing polyurethane foam, sprayed beneath guardrail, for its ability to inhibit weed growth. It is conducting similar tests of super-heated weed steamers, the paving under guardrails and the

herbicidal effects of corn gluten, drawing high praise from local agencies.

FEATHER RIVER BRIDGE REPLACEMENT *Major Structures*

In replacing the 75-year-old bridge over the Feather River on Route 162 near Oroville, Caltrans District 3 had to meet current seismic criteria, provide a conduit for utilities, meet demand for future capacity and minimally disrupt travelers during construction. The right of way allowed scant room to avoid conflict with the existing structure.

These conditions led to the selection of a cast-in-place, pre-stressed concrete box girder design that allowed flexibility for the construction work adjacent to and under the existing bridge, decreasing the impact on travelers, concealing utilities within the bridge and facilitating future widening.



- Caltrans Engineering Services Division of Structure Design**
- Caltrans District 3 Project Management**
- Caltrans District 3 Construction**

DONNER PARK OVERCROSSING *Major Structures*

Located on the historic Lincoln Highway, this project replaced the existing Donner Park overcrossing near Truckee with a modern, two-span structure and specially-designed retaining walls to mitigate the impact on an environmentally sensitive area.



The purpose of the project was to increase the structure's vertical clearance; add to longevity with state-of-the-art epoxy coated rebar, higher strength concrete and polyester concrete overlay and snow plow deflectors, and upgrade safety features with wider lanes, modern safety shape barriers and longer spans.

Designers also strove to create a gateway into the mountainous Lake Tahoe region, using haunched girders and sloping abutments to reflect textures of the surrounding area.



- Caltrans Engineering Services Division Design Branch 6**
- Herb Benedict Benco Contracting and Engineering Inc.**
- Caltrans District 3**

FARADAY AVENUE

Rural Highway

Faraday Avenue, in San Diego County, winds through farmland and native coastal sage habitats. Designed to blend seamlessly into the hillside, the road provides relief to other congested thoroughfares to and from the industrial center of Carlsbad.

The need for Faraday Avenue became apparent when private development was delayed due to environmental constraints. In order to receive all permits, the roadway was redesigned to eliminate wetland impacts. Because the project was located in the coastal zone, summer construction was required. Vegetation was hand-cleared by a separate contract prior to the February start of the gnatcatcher breeding season.

Pedestrian undercrossings accommodate future park uses. Deep cleanouts were required to remove clay deposits from the canyons. Culverts were designed to maintain primary drainage patterns and riprap energy dissipaters were used to slow storm water.



City of Carlsbad Public Works Department



EXCELLENCE
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ROUTE 92 SLOW VEHICLE LANE

Route 92's restricted horizontal and vertical alignment and grades of up to seven percent, traversed by a high volume of trucks, recreational vehicles, commuters and recreational and public transit, required a facility for slow vehicles.

To minimize impacts in the mountainous terrain and an environmentally-sensitive watershed, retaining walls were used to eliminate extensive excavation. Storm water pollution prevention measures maintained water quality in creeks at the bottom of the steep slopes. Vegetated rock slope protection at two locations encourages willow growth. Special measures were taken to protect the California red-legged frog.

The nine hand-sculpted soil nail walls and 14 soldier pile walls represent engineering, design and construction successes. Of particular interest is incorporation of experimental hollow-injection anchors in one soil nail wall.



District 4 Office of Design

San Mateo County Transportation Authority

O.C. Jones & Sons and R.M. Harris Co., Inc.

LODI RAIL STATION

Intermodal Facilities

Because its location could not accommodate Amtrak trains, the rehabilitation of the Lodi Rail Station began with the relocation of the historic Southern Pacific Depot. The building was relocated, restored and now accommodates trains without disrupting downtown traffic. New structures, added to complete the station, include the Lodi Bicycle Patrol officers' office and a break room for bus drivers. For aesthetics and long life, the entire station was rebuilt using high quality materials.

The finished station is served by all area public transportation. Included are Amtrak and Greyhound; SMART and SCT/LINK, two intercity bus providers; Grapeline, Lodi's fixed-route service, and Lodi's Dial-a-Ride service. Express commuter trains, due to start service within five years, will connect Lodi with Sacramento and the Bay Area.



City of Lodi

San Joaquin Council of Governments

Richard Pombo, U.S. House of Representatives

Assemblyman Anthony Pescetti

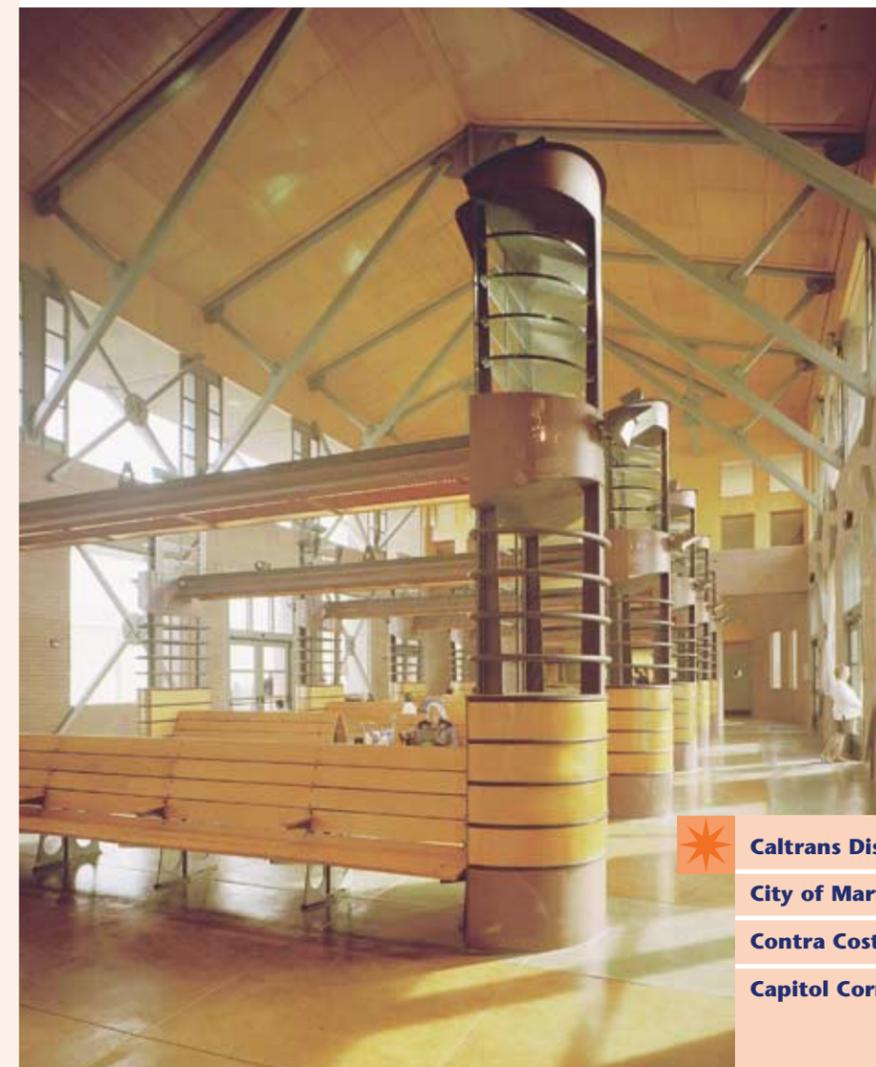
MARTINEZ RAIL STATION

Intermodal Facilities

Caltrans, the City of Martinez and Amtrak West celebrated the grand opening of the new Martinez Amtrak Station, the fifth busiest in California, in September 2001.

The new station, with 930 m² of operational space, meets all requirements of the Americans with Disabilities Act. It features new platforms, adequate passenger seating, accessible restrooms, 160 parking spaces, 10 bus bays, a carpool and vanpool lot, bicycle parking and off-street taxi zones. Ticketing and baggage facilities meet modern standards.

Because it is a junction for several passenger and freight lines, Martinez had been a choke point for rail operations. Four tracks now allow for separation of passenger and freight traffic, decreasing delays for both.



Caltrans District 4

City of Martinez

Contra Costa Transportation Authority

Capitol Corridor Joint Powers Authority



THE NORTH BROADWAY BRIDGE

Historic Restoration

When the North Broadway Bridge, constructed in 1912 by the City of Los Angeles, needed retrofitting to withstand a major earthquake, it presented an opportunity to reintroduce the character-defining, stylized elements that had been removed from the bridge in the 1930s.

The ornamental three-globe electroliers were replicated as indicated on the original design to their original height, with care taken to incorporate the column design specified on the historic plans. Sensitive cleaning materials were used to remove old paint that covered graffiti. The massive Beaux-Art pylons, set at an angle for best viewing by transcontinental passengers, were reconstructed from historic, as-built drawings. The North Broadway Bridge restoration represents an accurate preservation program and an important example of a sensitive public works project.



Caltrans District 07 - Environmental Planning

Caltrans District 07 - Office of Local Programs

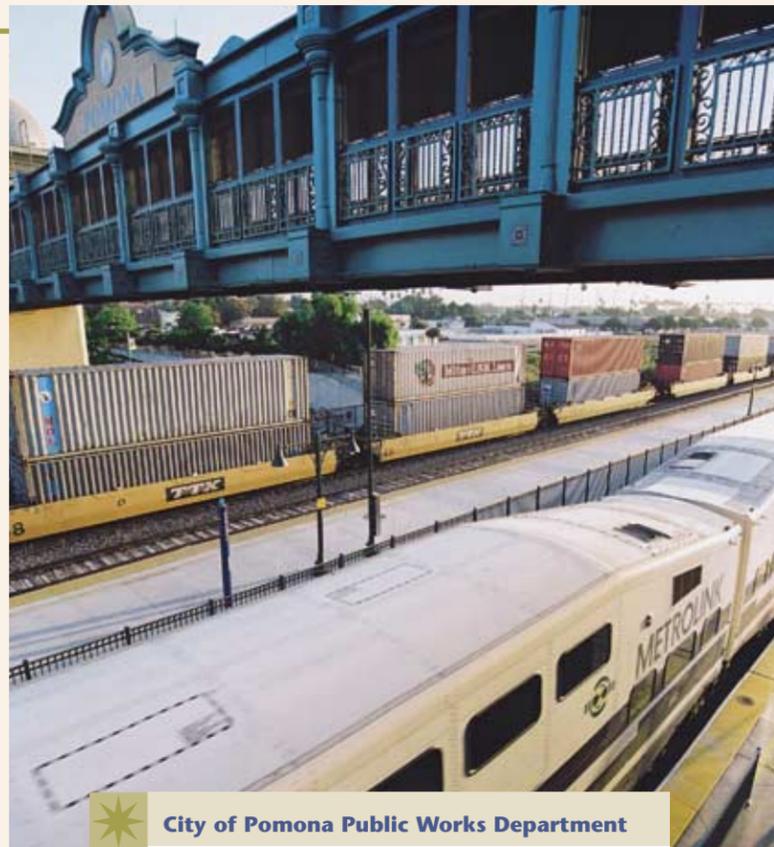
Los Angeles Bureau of Engineering

THE POMONA REGIONAL TRANSIT STATION

Historic Restoration

Pomona's downtown regional transit center, completed in the winter of 2001, restored the 1940 historic Southern Pacific Depot, improved tracks, provided a pedestrian overcrossing and a new Metrolink station. These improvements supplemented the nearby regional Pomona Valley Transportation and Foothill Transit center.

The rehabilitation of the depot maintained the historical Mission-style architecture while improving the interior waiting room and created offices for regional transit agencies. The pedestrian overcrossing maintains the Mission revival architecture of the depot while providing safe access to Metrolink, Amtrak and regional buses. The new Metrolink Station facing the depot provides commuter train service to multiple mass transportation connections. Passenger shelters, mosaic passenger platform, information kiosk and parking lot all were designed to complement the station's architectural style.



City of Pomona Public Works Department

**Norm Spielman & Associates
Construction Company**

M S Construction Company



**EXCELLENCE
IN TRANSPORTATION**

2002 JUDGES

Thomas Andreoli, AIA
Director of Design
Rossetti Architects

Amer Attar, P.E.
Senior Engineer
City of Temecula
Public Works Department

Greg Butler, P.E.
Senior Engineer
City of Temecula
Public Works Department

Dr. Jamie Cleland
Principal
EDAW, Inc.

Mike Cooper, P.E., S.E.
CH2Mhill

Ray Duryee
Manager
City of Redding
Public Works Department

Kirk E. Gierlich, P.E.
Deputy City Engineer
City of Eureka

Kevin Hamblin
Director
Community Development
City of Eureka

Marico Hoshida
Office of Special Projects
California Highway Patrol

Diane Ingersoll
Director
Dept. of Public Works
City of Seaside

Doug Isbell
Deputy Director, Engineering
Service Division
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County of San Diego

Jim Kemp
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Stanley Kukalow, P.E.
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City Engineer
City of Sand City

Joe Luchi
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University of California, Davis

John Wright, A.I.C.P.
Director
Planning &
Developmental Services
City of Clovis

BUILDING A BETTER CALIFORNIA

By Maria Contreras-Sweet

Secretary of Business, Transportation and Housing



California's abundance of natural resources, combined with a phenomenally skilled and diverse population, has now propelled its economy to the fifth largest in the world.

But this prosperity has come at a price. California's population is growing and now exceeds 33 million people. That in turn is challenging our natural resources, our highways and roads, and our ability to provide enough student classrooms.

Many people are wondering how California can overcome this problem, especially in the face of a budget deficit. How will we build a better California? Governor Gray Davis has a plan for that: he is investing in California's infrastructure.

At a time when the country is experiencing an economic downturn, the Governor has created 900 000 new jobs in California by investing in the state's infrastructure. For example, at least 67 000 new jobs – enough to fill every seat in the Oakland Coliseum – will be created with the construction of the new eastern span of the San Francisco-Oakland Bay Bridge.

Governor Davis has invested nearly \$7 billion to improve transportation across California, the single largest General Fund investment in state history. He is improving one in every five miles of California roadway and is adding hundreds of miles of new High Occupancy Vehicle (carpool) lanes.

Because of these efforts, for the first time in decades, new, more energy efficient power plants are under construction or have come on line, delivering much-needed megawatts of reliable electricity. He created the largest energy conservation program in the nation, which includes rebates for homeowners, consumers, businesses and farms.

And Governor Davis is investing \$9.2 billion to make schools in every region of the state modern, spacious and safe.

Building a better California means planning for the future. So when he took office three years ago, Governor Davis created the Commission on Building for the 21st Century. He asked me to co-chair this blue-chip council of Californians representing every aspect of life in the state, from entrepreneurs to experts to everyday residents. The Commission developed proposals for the Governor's consideration on building a better California without falling into the age-old trap of passing the buck to the taxpayers.

The Commission addressed the eight building blocks that comprise the foundation on which our state rests: education, energy, housing, land, public buildings, technology, transportation and water. From building neighborhood schools to maximizing renewable energy sources to encouraging affordable housing, the state now has proposals for streamlining government and taking full advantage of public-private partnerships to develop California's infrastructure without passing the expense on to taxpayers.

For example, the Commission calls for a unified California partnership for a larger share of federal transportation programs in the upcoming reauthorization in Washington. The long-term benefit is more roads and better public transportation for our children. The short-term benefit is money being spent and jobs being created today.

Building a better California. It's what every generation of Californian has done before. Combine a long-term plan with the leadership of Gray Davis, the talent of the people of California, and it's exactly what we will do again.

GOVERNOR'S TRAFFIC CONGESTION RELIEF PROGRAM

In July 2000, Governor Gray Davis signed Assembly Bill 2928, implementing the Governor's Traffic Congestion Relief Plan to relieve congestion, improve goods movement and connect state and local modes of transportation. By January 2002, more than \$2.4 billion had been approved for 132 projects (94 percent). Of these, 116 had received allocations for a total of \$1.1 billion.

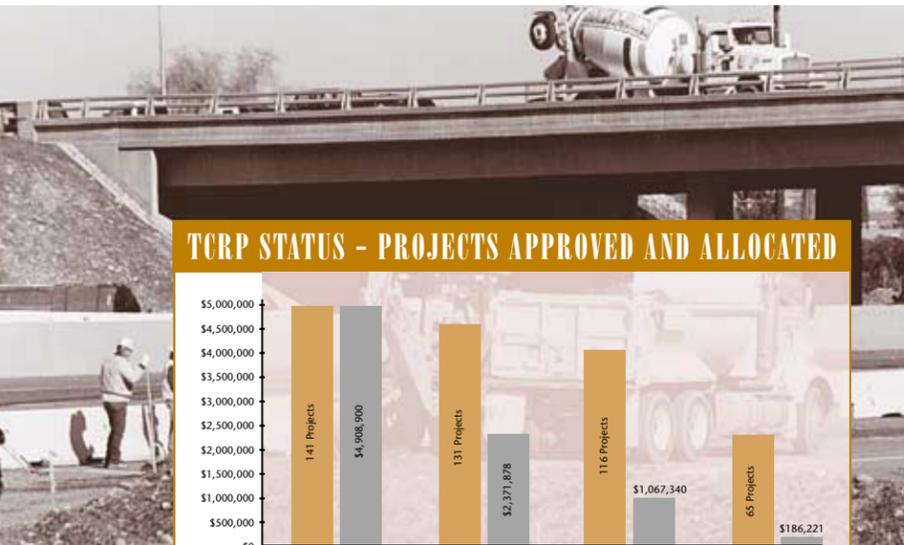
MAJOR PROJECTS MILESTONES AND ACCOMPLISHMENTS INCLUDE:

Ribbon-cutting

- Santa Monica Boulevard Reconstruction

Groundbreaking - initiation of construction

- Harder Road Overcrossing of Capitol Corridor intercity rail line in Hayward
- San Francisco Muni Ocean Avenue Light Rail line to Route 1 near San Francisco State University
- Pasadena Blue Line in Los Angeles County
- State Route 22 High Occupancy Vehicle Lanes in Orange County and advance construction of soundwalls
- New connectors, State Route 94/Route 125 interchange
- Sacramento Regional Transit Folsom Light Rail Extension in Sacramento County
- Balboa Park BART Station Phase 1 in San Francisco
- State Route 50/Sunrise Blvd Interchange Modifications in Sacramento County
- Golden Gate Bridge seismic retrofit
- Traffic signals at the Olympic/Mateo/Porter Streets intersection in Los Angeles



TCRP STATUS - PROJECTS APPROVED AND ALLOCATED



Rolling stock delivery (in final acceptance testing)

- Locomotive for the Coaster Commuter Rail service in San Diego County

Clean Air Initiatives -

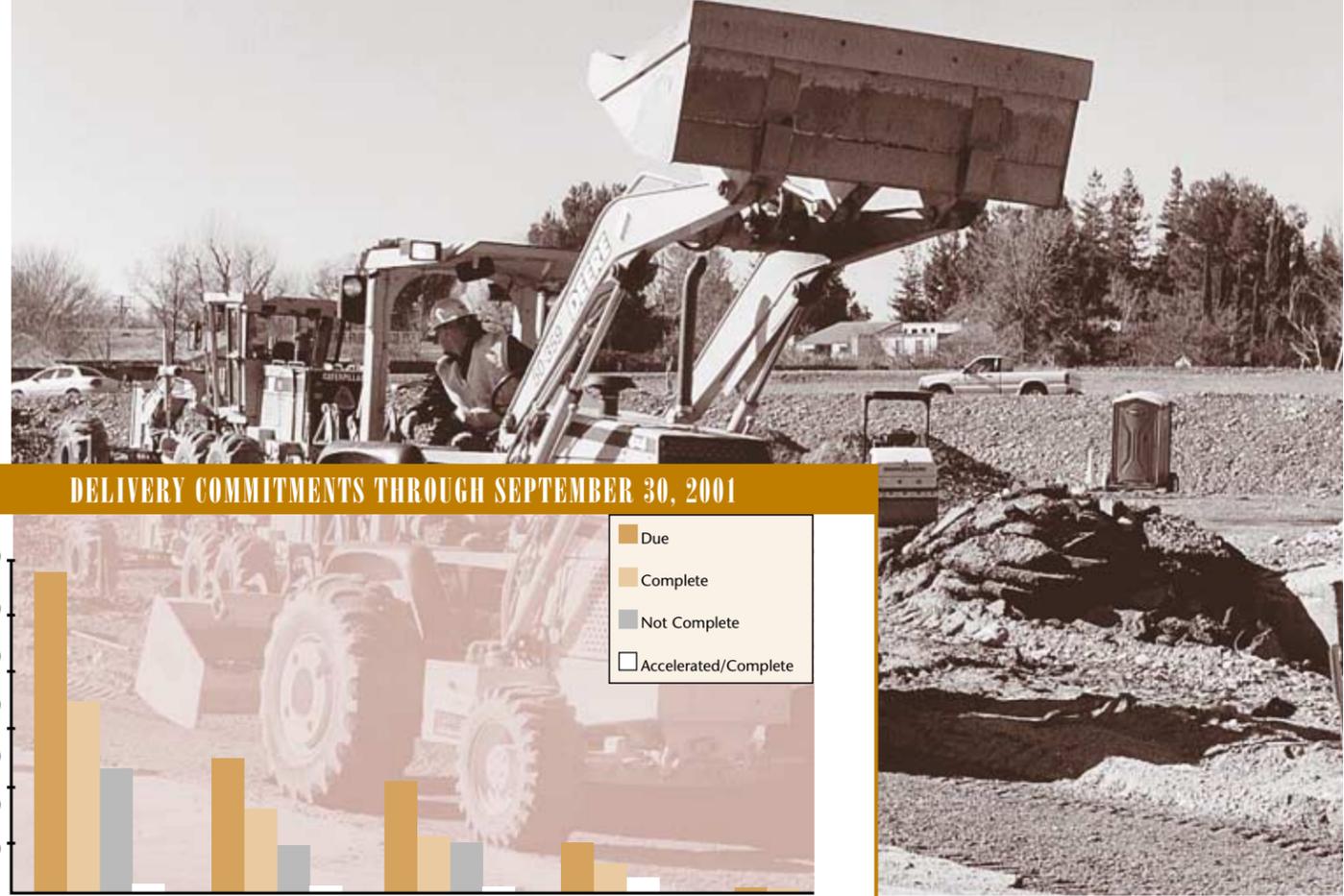
- Establish and accept applications for the Heavy-Duty Engine Incentive Program for the San Joaquin Valley Clean Air Attainment Program.
- Award funds for public and private fleet air pollution mitigation for the Sacramento Emergency Clear Air/Transportation Program.

Construction Projects - Advertised or Ready to Advertise

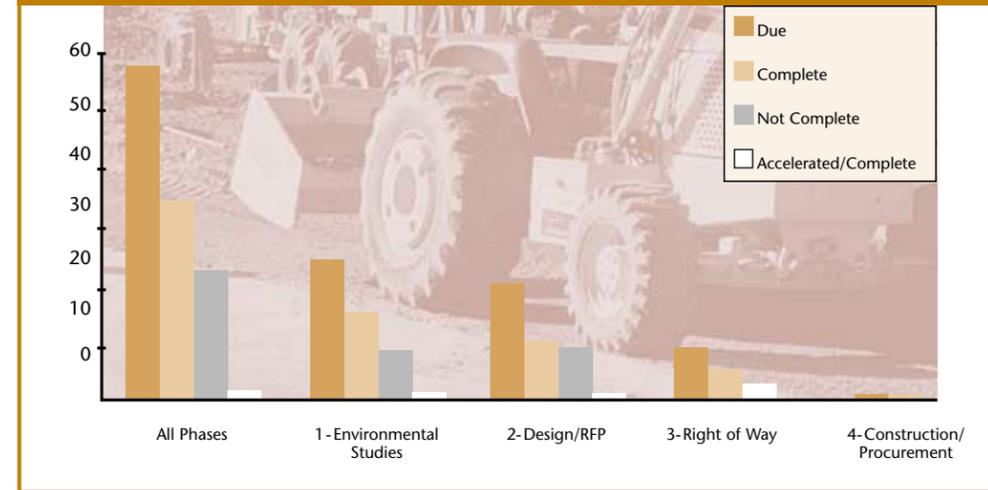
- Widen U.S. 101, improve 101/Route 85 interchange south of San Jose
- Reconstruct I-5/I 805 interchange, widen I-5 and I-805 in San Diego County
- State Street smart corridor in downtown Santa Barbara
- State Route 85/Route 87 interchange direct connectors in San Jose

Request for Proposal or Contract award for Procurement -

- AC Transit, fuel cell demonstration project
- Santa Cruz Metropolitan Transit District, acquire low-emission buses (local service)
- Convert Sacramento Regional Transit bus fleet to low-emission buses
- Acquire low-emission buses for the Santa Cruz Metropolitan Transit District State Route 17 express service.



DELIVERY COMMITMENTS THROUGH SEPTEMBER 30, 2001



CALTRANS HAS MADE THE FOLLOWING IMPROVEMENTS TO STREAMLINE PROJECT DELIVERY:

Jump Start Project Initiation -

- Extend BART from Fremont to San Jose

Innovative Procurement/Delivery -

- Caltrain "Baby Bullet" Express Service

Innovative Project Delivery -

- Marin County 101 Reversible High Occupancy Vehicle (HOV) Lanes

Public/Private Partnership -

- Transit Village at Richmond BART Station

Streamlining -

- San Fernando Valley East/West Bus Rapid Transit

Interagency Partnerships -

- Kern and Tulare counties have agreed to share costs to improve Route 65.
- Caltrans and the City of Los Angeles are cooperating to synchronize signals in the San Fernando Valley.
- Caltrans and the County of Tulare have formed a joint powers authority to deliver the Cross Valley Rail project.
- City of Santa Barbara and the Santa Barbara Metropolitan Transit District are sharing funding to synchronize signals and install vehicle tracking equipment for buses running along the State Street corridor.
- Caltrans District 11 and the County of Imperial are cooperating to widen State Route 111 in Imperial County.

Bridging the Strait at Carquinez

By Jim Drago
Photos by Bill Hall



If the San Francisco Bay Area's toll bridges were a family, the span over the hard working and dependable but more often than not overshadowed by its

Carquinez Strait would be a middle child — more glamorous and flashy siblings.

The towers of a dramatic new structure to connect Crockett and Vallejo are rising out of the Carquinez Strait.

Yet, from an engineering standpoint, the Carquinez Strait occupies a front row seat in the laboratory of innovation.

Since the original Carquinez Bridge opened in 1927, engineers have used this location, where fresh water from the Sacramento River meets its salty cousin from San Francisco and San Pablo bays, to pioneer new advances in design and construction.

Before the first bridge was built, travelers to the Bay area faced the daunting task of navigating the Strait by ferry between Vallejo and Martinez and then tackling the Tunnel Road to Oakland.

Aven Hanford, a grocer from Vallejo and Oscar Klatt, a wholesale grocery salesman from Oakland, started the ferry service in 1917 and saw it grow steadily in popularity. The entrepreneurs decided to build a bridge in 1925. Faced with very strong tidal currents, the builders employed new and untried construction techniques, and on May 21, 1927, just hours after Charles Lindbergh completed his maiden flight across the Atlantic, the bridge opened.

It is here at Carquinez, the largest strait with the fastest flowing current in the world, that engineers are once again meeting

construction challenges with technological advances and off-the-shelf common sense.

"Carquinez is great. For an engineer, there is no better place. It offers everything you could want," says Steve Whipple, without a hint of jealousy for his colleagues, 50 km down Interstate 80, who are laboring under worldwide media glare at the Bay Bridge. Whipple is District 4's Construction Manager for a new bridge spanning the Carquinez Strait.

The \$500 million Carquinez project includes construction of the new one km-long suspension bridge, seismic strengthening of the 1958 cantilever bridge carrying eastbound Interstate 80 traffic toward Sacramento, demolition of the 1927 structure and reconstruction of the freeway interchange serving the community of Crockett nestled at the southern shore of the Strait.

The new Carquinez, with a main span 728 m long, will be the sixth longest bridge span in the United States and 28th longest suspension bridge span in the world.

The saga of a new Carquinez bridge began in 1988 when Bay Area voters approved a region-wide increase on all toll bridges to \$1 to finance a variety of transportation improve-

ments. Later, the 1989 Loma Prieta earthquake exposed the need for seismic strengthening on the Bay Area's large toll bridges, including the younger of the two Carquinez spans.

Caltrans engineers developed a strategy for strengthening the 1958-vintage bridge that included replacing more than a quarter million bolts at a cost of \$73 million. Concurrently, Caltrans began designing a replacement span for the original Carquinez Bridge and a new interchange to serve Crockett.

Working with the communities of Crockett and the city of Vallejo on the northern side of the Strait, the decision was made to build a suspension bridge instead of a cantilever design to match the existing structures.

The new Carquinez is the first suspension bridge built in the United States in more than 30 years.

The engineering joint venture of Parsons Transportation Group/OPAC was enlisted by Caltrans to design the new bridge. As part of the department's oversight responsibility, four Caltrans engineers, including Senior Bridge Engineer Brian Boal and Whipple, were sent to observe construction of two suspension bridges near Bergen in Norway.

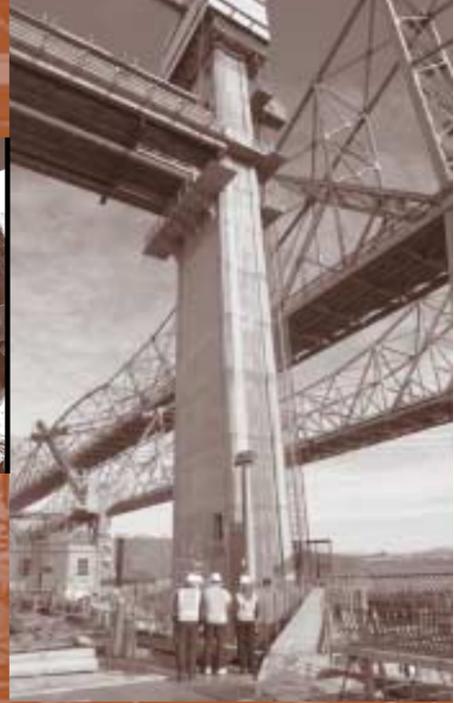
"While there hasn't been a new suspension bridge built in the U.S. in many years, the rest of the world has been busy in that area," Boal says. "We were able to see two very critical stages under construction on two different bridges. We observed the aerial spinning and strand adjustments of the main cable on one bridge and erection of the steel orthotropic box girder on the other."

Both of those procedures will be repeated at Carquinez. The experience from watching that work will be invaluable as construction proceeds at Carquinez," Boal says. "It brings the paper documents (plans and specifications) to life."

The \$188 million contract for the new bridge, awarded two years ago to the joint venture of FCI Constructors/Cleveland Bridge California, was the largest construction contract ever signed by Caltrans at the time. Subsequent contracts for the Richmond-San Rafael earthquake retrofit and the new eastern span of the Bay Bridge have eclipsed Carquinez.

Even so, Carquinez still claims a number of firsts.

Located one kilometer away from the Franklin fault, the new bridge is being designed to withstand a magnitude 6.5 earthquake. "The Carquinez will be the first suspension bridge in



Cable spinning will begin on Carquinez' new suspension bridge later this year and will take about three months to complete.

Novel Rock Socket drilling was necessary to provide tower foundations for the new suspension span, and will be a new weapon in bridge builders' arsenals in the future.

North America designed to meet modern seismic codes in a major seismic area," says Mike Marquez, Caltrans Design Oversight Engineer.

"It will be the first orthotropic steel box girder suspension bridge ever built in the United States," adds Ken Loncharich, Caltrans District 4 Senior Resident Construction Engineer for the project.

A total of 24 prefabricated segments are being fabricated in Nagoya, Japan. The segments will be assembled to establish fit-up tolerances before being placed on a ship for the voyage to Carquinez later this year.

"The segments will be hoisted from the ship into place and connected. A thin riding surface will be added, barrier rail and striping completed and the bridge opened to traffic," Loncharich says.

Concurrent with work on the bridge segments in Japan, construction has been moving ahead at Carquinez on the two concrete towers, rising to a height of 120 meters, that will support the westbound Interstate 80 roadway over the strait. In addition, components for the cable system are being fabricated in Great Britain with fabrication of other elements being scheduled in China.

The north tower is in deep water and driving the piles was uneventful for construction crews, according to Loncharich.

The south tower was a different story.

The south tower is located in shallow water with the piles driven into a highly fractured rock base that literally fell apart as the rock socket was being drilled for the 3-meter diameter piles.

The challenge was to create a foundation suitable to accommodate the 3-meter diameter cast-in-drilled-hole piles.

Working with the contractor, engineers came up with a novel solution. Crews used a drill head that was custom designed and fabricated capable of drilling two size holes without removing the drill from the hole. This "undereemer" drill head drilled a 7.5 to 10.0 m-deep, 3.3 m-diameter hole and filled it with fiber reinforced concrete. A 2.7 m-diameter hole was then drilled through the concrete at which point the "undereemer" at the end of the drill expanded to a larger width and the process was repeated up to four times.

The drill and fill technique provided the necessary strength and stability missing from the fractured rock. The bottom segment of the rock socket did not require a concrete shell as the caving hole was directly proportional to the time the hole was left open.

The rock socket solution is now a permanent part of Caltrans' construction specifications.

Andy Fremier, District 4 District Director for Construction and Jon Tapping, supervising engineer in the Headquarters Division of Construction, spearheaded the writing of the new specification that will be used to guide contractors working on the new Benicia-Martinez Bridge and possibly the new eastern span of the Bay Bridge.

"By having that new specification in place, we will be able to avoid delays and additional cost for a change order in the event we encounter the same conditions as we found at Carquinez," Fremier says.

With the towers nearing completion, construction of the bridge is about 60 percent complete. A footbridge, which is being built, will provide access for the workers who will guide the cable into place.

Cable spinning will begin later this year and continue day and night, rain or shine for approximately three months. An additional three months will be needed to complete the cable system so it can receive the superstructure.

Each cable will consist of 37 strands. Each strand contains 232 steel wires. In all, the cable will contain 8584 wires. The cables will be secured by 148 anchor rods each measuring about 20 meters long and 83 mm in diameter.

Once the cable is in place, the bridge deck will be ready for assembly.

"The ship will move into place, then, using strand jacks supported by the main cable, the bridge segments will be lifted into place," Loncharich says.

Work also is moving forward on the new interchange at Crockett. Opening of the new bridge is scheduled for late 2003.

With the new bridge in operation, eastbound I-80 traffic will be routed from the 1958 span to the 1927 structure. That will allow construction crews to replace the approach structure to the 1958 bridge near the landmark C&H sugar plant. Once that is completed, traffic will be put back on the 1958 bridge and the original structure dismantled.

Because of the bridge's historic nature, some of its original sections will be preserved by the local historical society.

Although the two existing bridges are a stark gray, the community opted to have the cable system of the new bridge painted "redwood".

The color is the only area where Whipple, Loncharich Boal, Field Engineer Kerry Morgan and Parsons/OPAC's Project Engineer Greg Orsolini disagree. They say redwood is a fine second choice. But they would have preferred the green and white of their alma mater— Michigan State University.

When Caltrans determined in 1999 that it needed to know the exact height of more than 6500 structures for oversized load permit purposes, Tom Harrington, Chief of the Office of Structures Maintenance–Investigations North, decided that the old method of measurement was not going to be up to the task.

LASER

MEASUREMENT OF STRUCTURE DIMENSIONS

That method involved eyeballing the least operational dimension of the structure, placing a telescoping fiberglass rod between the road surface and the bottom of the overcrossing structure, reading the measurement and noting it on a dimensional diagram.

“There were lots of drawbacks,” Harrington says. “First and foremost, it put the people measuring the structure in a potentially hazardous situation for a considerable amount of time. And horizontal measurements involved stretching a tape measure, sometimes, across several lanes of traffic. The poles, manually held and sometimes stretching to eight meters high, were susceptible to the influence of winds and blow-bys if trucks were passing closely.”

To deal with the task of measuring all of Caltrans’ overhead structures quickly and accurately, Harrington turned to laser technology. “Laser measurement is making the tape measure obsolete,” Harrington says. “It’s something that is being used extensively for all kinds of manufacturing and construction uses. We found a device that was

manufactured by the Hilti Corporation in Europe. Their PD25 was available off-the-shelf and we were able to obtain and put it to work very quickly.”

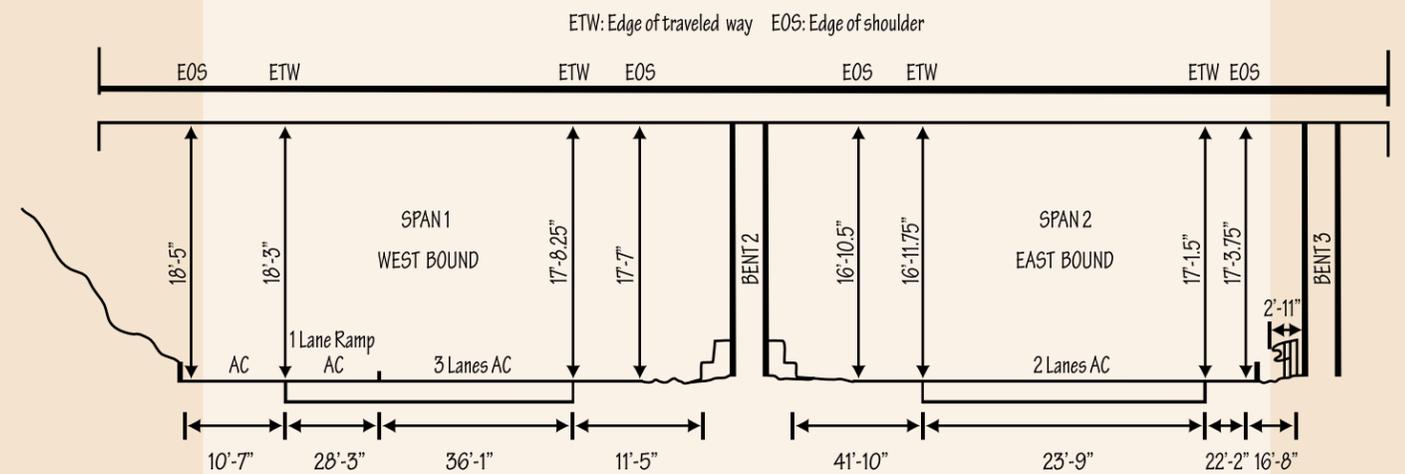
A laser distance measuring instrument works by sending out a short flash of laser light to a surface ahead and picking up the light that is reflected back. A super-fast stopwatch, built into the device, times how long it takes for the light to complete the round trip. Then a built-in computer calculates the distance that the light pulse has traveled, divides this by two and obtains the distance to the overhead structure.

Laser light travels a long way in a perfectly straight line, so it’s just as easy to measure to something that is far away as it is something close. If you can see it, the laser can measure it. For horizontal measuring, the devices contain an electronic level so that it is possible to measure for considerable distances with a high degree of accuracy.

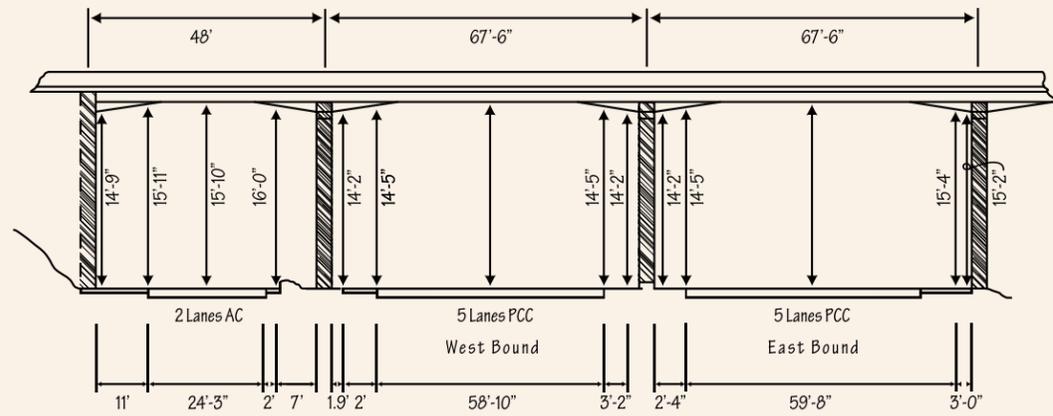
Typical laser applications include highly accurate measuring of distances, quantity surveying, measuring areas and



Photos by Lynn G. Harrison



CLEARANCE DIAGRAM - LOOKING AHEAD ON ROUTE 980



CLEARANCE DIAGRAM - LOOKING AHEAD ON ROUTE 80

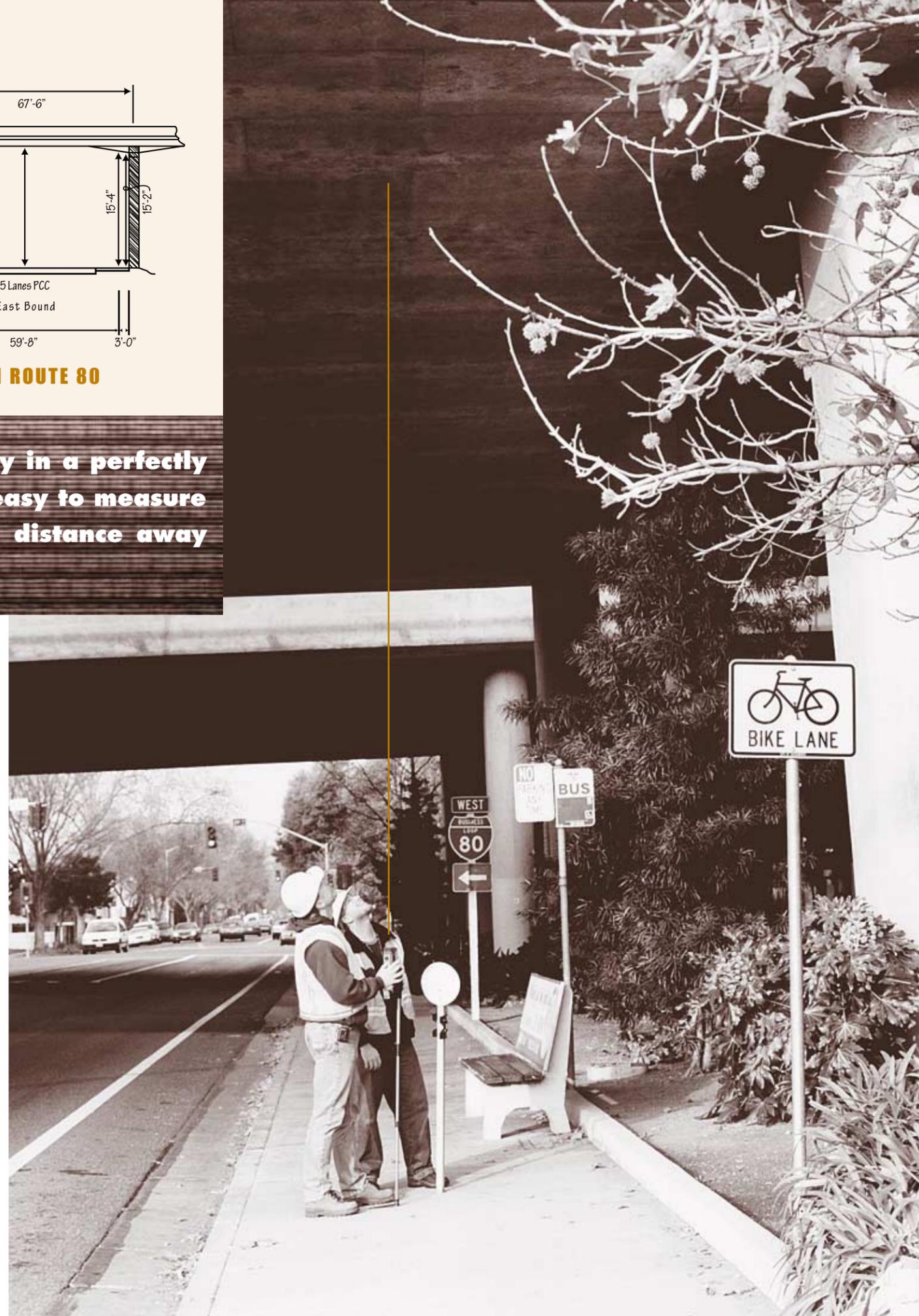
LASER light travels a long way in a perfectly straight line, so it's just as easy to measure to something that is a long distance away as it is something close.

volumes, measuring inaccessible objects and distances between inaccessible points as well as measuring under hazardous conditions, a feature that was particularly important. Because light travels so fast, it's even possible to measure distances to moving objects.

To measure the structures, teams were dispatched to Caltrans' overcrossings. They set the laser on a monopod, took the vertical measurements at the lane lines and at the fog stripe and recorded the data by hand on dimensional charts. The data was double-checked and, when found to be accurate, transmitted to Traffic Operations staff who entered the information into the Permit System.

"It's quick," Harrington says. "Our people were able to set up the laser, take the reading and get off the highway in a matter of minutes. We were able to survey the entire highway system in a very short time."

"There was an added benefit to the speed of the operation," Harrington says. "One was that we had a much lesser effect on traffic because we were able to get on and off the highway so quickly. The other was safety. Where we were working under intensive traffic conditions, we had help from the California Highway Patrol. A patrolman



would drive out into traffic upstream from where we were going to do the measurement, turn on the caution light on his vehicle and begin weaving across the lanes of traffic, slowing it down and creating a window of a couple of minutes for us."

"With the break in the traffic stream, our people would get out in the lane, identify the point of minimum height of the structure, set the laser on a monopod, activate the laser, get the reading and get off the highway in a matter of minutes."

Why is it necessary to measure the height of the overcrossings?

"A lot of things happen to a highway over the years, and sometimes the changes did not get documented," Harrington says. "For instance, shoulders have been converted to traveled lanes. Especially where an overcrossing over those lanes is on an incline, the outer lane now has a different clearance from what we had recorded in the permit system." Caltrans has now instituted tighter practices to make certain all changes are documented.

In addition to the needs of the oversize load permitting system, accurate data on roadway dimensions is also required by law and by the Federal Highway Administration's National Bridge Information System.

"The laser amounts to another tool in our tool box," Harrington says. "It fit the urgency of getting the project done quickly and the need for accuracy. It minimized motorist delays and it was a heck of a lot safer for our people."

"It's quick,"
Harrington says.
"Our people were able to set up the laser, take the reading and get off the highway in a matter of minutes. We were able to survey the entire highway system in a very short time."

ON THE MOVE IN LODI



Photos by Don Tateishi

The presidential candidate, speaking on the 2000 election hustings from a platform cobbled up in front of the Lodi Rail Station, gazes upon the city's street scene, claps his hands together, and opines heartily, "Now, this is middle America."



The candidate is right. As you drive down the narrow, clubby streets of this agricultural center about 50 km south of Sacramento, you can't help the feeling that you have been somehow transported out of California's hustle to a kinder and gentler place somewhere in Iowa or Indiana.

A recent \$4.4 million transportation project, financed in part by a \$700 000 Transit Capital Improvement Project grant from the state, continues a pattern of investment that is going a long way to lend a quotidian ambience to this downtown.

In 1990, the Lodi Passenger Rail Station was a rotting hulk, unused for almost 20 years and unloved and unattended by its owner, the Southern Pacific Railroad, which was happy to concentrate its efforts on the moneymaking freight business. "But this was an important building to the people of Lodi," says Carlos Tobar, Lodi's

Extensive cultural studies were done to ensure that the rehabilitated Lodi Rail Station remained compatible with the city's arch and downtown architecture.

Transportation Manager. "It was their Ellis Island. They didn't want to see it disappear."

Tobar explains that large numbers of the people who migrated to what eventually became one of California's most impor-

tant grape-growing centers arrived in the town by rail. "The building had great nostalgic value to them," Tobar says. "Councilmember Phil Pennino was a major force behind Measure K, a local transportation sales tax, that made the station's rehabilitation possible, as were many of the city officials and citizens of Lodi."

Today, after opening to considerable fanfare in October 1999, the newly refurbished building is a thriving hub of activity that is breathing life into the older part of the city. And any walk around it tells you that the old Creedence Clearwater lament, "Stuck in Lodi," is a thing of the past, especially after Amtrak initiated new rail service to the city in March 2002.



The rehabilitation of the rail station was part of an overall redevelopment plan for Lodi's downtown. The city wanted the station to become a transportation hub for Amtrak, Greyhound, local and regional bus and dial-a-ride service. It also wanted to build a parking structure to accommodate up to 200 vehicles.

To do that, it would have to move the station a block south so that trains would not block cross streets while loading and unloading passengers. Therein lay the rub. The Colonnade-style station, built in 1907 by Southern Pacific, was by itself eligible for the National Register of

Today, after opening to considerable fanfare in October 1999, the newly refurbished building is a thriving hub of activity that is breathing life into the older part of the city."

Historic Places. But in addition, it was a part of the setting of the Lodi Arch, which had been built to face the passenger depot as a gateway to the city.

Moving the station affected both the station and the setting of the arch. Mitigation involved documenting the station's original location with regard to the arch, in accordance with the guidelines of the Historic American Buildings Survey and Historic American Engineering Survey.

In its new location, the station was rehabilitated to have an appearance compatible with the original plans, with minimal changes, including removal of the asbestos insulation. But the original siding, doors and windows and color scheme were all either kept or duplicated. Inside, the building remains partially true to its original appearance, but a modern dispatching area for all the new transit uses has been added, along with facilities for sales of transit passes.

"Our craftsmen did such a good job, people tell their children not to mess up the waiting area," Tobar says. "We have had no vandalism."



Lodi moved its rail station a block to the south so trains would not block the major street into downtown.



Craftsmen found the saw blades that produced the original wainscoting in Lodi's rail station and milled new features to match the old.



To enhance the rail station's role as a transportation hub, the city's contractors added an intercity bus station that closely matched the existing facility.



In a notable nod to the past, the city was able to find the milling equipment that produced the wainscoting in the original building and duplicated it. Displays of historic materials, tended by the Lodi Historical Society, are changed periodically.

The city, to accommodate the station's new uses, added new buildings to house a waiting area for Greyhound buses and a distinctive clock tower building that serves as a staging area for municipal bus drivers and city police bicycle patrolmen. From the clock tower, every hour, you can hear music that bathes the downtown in patriotic ambience.

Carlos Tobar, Lodi's Transportation Manager.



Mobility is my job," Tobar says. And his attention to his job is paying off. "Ridership on the Grapeline has tripled in the past two years. And people are using the transit services to access local businesses and for recreational trips."



The Lodi Rail Station was a debarkation point for many of the city's families. It was important that it be restored in a historically accurate fashion.



Both buildings are compatible with the depot in color and architectural features. The city placed the buildings in an attractive setting that accommodates a transfer point for transit riders, loading areas for Amtrak trains and parking for dozens of vehicles. And between the station and the downtown area, it has added benches, bike racks and a fountain that attracts tourists and lovers alike.

The city purchased the .75 hectare site on which the station and the new parking structure now sit from Union Pacific, the successor to Southern Pacific, for \$400,000. That entailed something of a struggle when it was thought that the property had been the site of one or more old filling stations, but any potential problems disappeared when it was found that there was no subsurface contamination. Improvements to the site included relocating a petroleum pipeline as well as water and sewer lines.

Carlos Tobar is not content just to put some up buildings and hope that people will show up to ride transit. "We're working with all of the services at the station to coordinate their schedules. These include Greyhound, Amtrak,

"Grapeline" (the local bus service), Lodi Dial-a-Ride and SMART, San Joaquin County's regional bus service," Tobar says. "We assist them with marketing 'on our nickel' and have even hosted 'training' sessions to teach people how to take Amtrak to the San Francisco Bay Area."

"Mobility is my job," Tobar says. And his attention to his job is paying off. "Ridership on the Grapeline has tripled in the past two years. And people are using the transit services to access local businesses and for recreational trips."

A walk around Lodi's downtown attests to the health of an area that is beset, like so many downtowns, by competition from the big boxes on the city's outskirts. This is a nice place to walk. People saunter along, poking about in the restaurants, specialty shops and new businesses that are making a strong comeback and making this downtown a pleasant place to be.

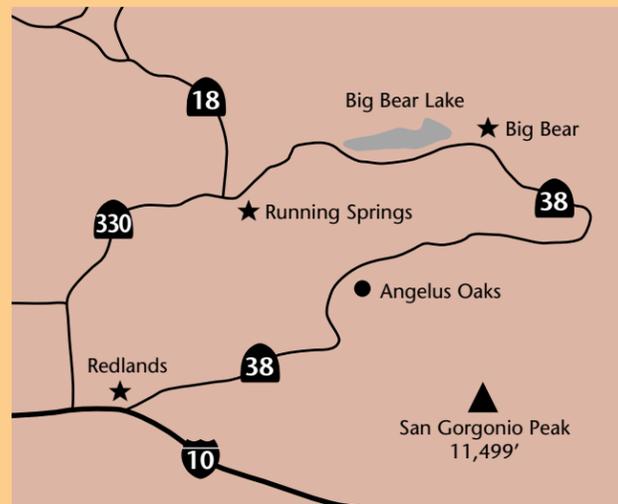
There's nothing "stuck" about this town.
- Gene Berthelsen



A BEAR OF A HIGHWAY



State Route 38 rises out of Redlands like an on-ramp to the stars, hard off the mighty Interstate 10. And in doing so, it provides a bird's-eye view of the past, present and future of Southern California.



Photos by Don Tateishi and Ed Andersen



State Route 38 gives travelers a bird's eye view of Southern California's past as it rises out of Redlands toward Mentone and the Onyx Summit.

By moving a few hundred meters in either direction from the Onyx Summit, at 2573 meters altitude and 63.3 kilometers out of Redlands, you can survey the smoggy Los Angeles Basin with its teeming 17 million work-hard, play-hard inhabitants to the west. Cross over the summit and, to the east, is the barren, empty vastness of the Mojave Desert.

At your feet is Big Bear, an alpine playground whose snowy mountainsides provide rest and rehabilitation to the worker bees below and water to keep them clean and thriving. And on the way up here, State Route 38 cuts across the growth rings of this swarming megalopolis.

Down below it was once all desert and every once in awhile, in the bottom dish of the basin, you can glimpse an ocatillo or a creosote or an agave. The view from the top feeds the notion that if somebody could just get water out there into the Mojave, strip malls, houses and warehouses would surge over the mountains like seawater over the gunwales of a sinking ship.

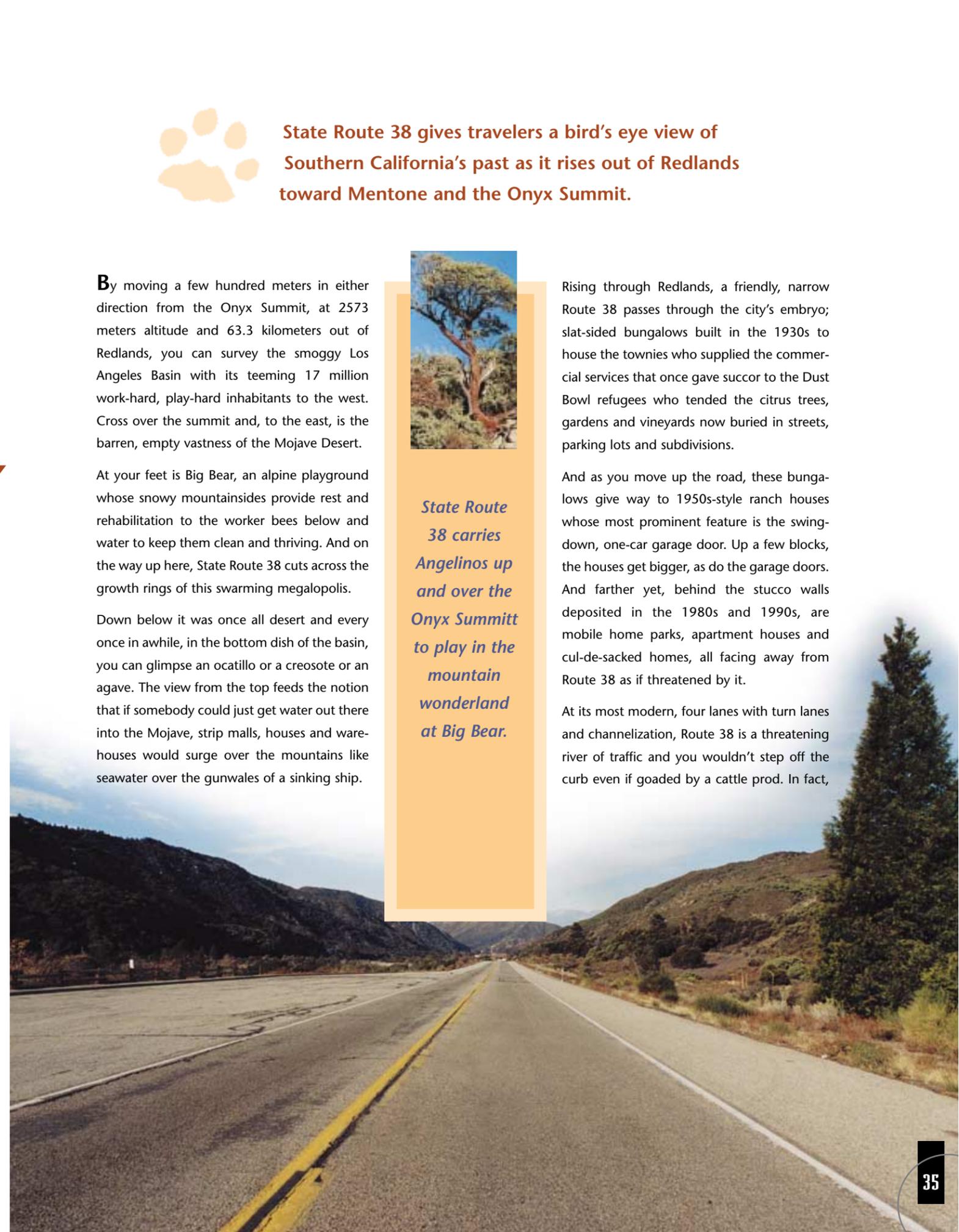


State Route 38 carries Angelinos up and over the Onyx Summit to play in the mountain wonderland at Big Bear.

Rising through Redlands, a friendly, narrow Route 38 passes through the city's embryo; slat-sided bungalows built in the 1930s to house the townies who supplied the commercial services that once gave succor to the Dust Bowl refugees who tended the citrus trees, gardens and vineyards now buried in streets, parking lots and subdivisions.

And as you move up the road, these bungalows give way to 1950s-style ranch houses whose most prominent feature is the swing-down, one-car garage door. Up a few blocks, the houses get bigger, as do the garage doors. And farther yet, behind the stucco walls deposited in the 1980s and 1990s, are mobile home parks, apartment houses and cul-de-sacked homes, all facing away from Route 38 as if threatened by it.

At its most modern, four lanes with turn lanes and channelization, Route 38 is a threatening river of traffic and you wouldn't step off the curb even if goaded by a cattle prod. In fact,





Ah, but up the road is Mentone, wonderful Mentone, population 5700, but soon, we fear, to be 30 000. Graced spectacularly by the “Mill Creek Cattle Company, Smokehouse and Saloon,” this is real American kitsch, unfettered by zoning, regulation, or even, we suspect, local government.

last fall, three people were struck by motorists along this stretch and folks are naturally upset. Caltrans and the CHP are looking for ways to make things safer.

Ah, but up the road is Mentone, wonderful Mentone, population 5700, but soon, we fear, to be 30 000. Graced spectacularly by the “Mill Creek Cattle Company, Smokehouse and Saloon,” this is real American kitsch, unfettered by zoning, regulation, or even, we suspect, local government. The branch library is somebody’s old house. There’s a full-sized billboard that proclaims, “Jesus loves you, Mentone.” And an establishment whose purpose we can only guess at: “Analytic Rehabilitation.” Streets, bordered by sandy paths instead of sidewalks, peter out into unkempt ditches. We have exited the land of Burger King, Denny’s and Taco Bell.

Mentone gives you the impression that somewhere up here is a building contractor who specializes in landscaping with tires.

Next gas, 75 kilometers.

Just out of Mentone, after passing something called “Paradise Ranch, on the banks of the Zanja,” Route 38 realizes its true function. This mountain road, carved out of sandstone and granite and hung precariously on the cliffsides above rocky Mill Creek, proceeds toward the Onyx Summit at a steady climb of six percent or more. Lower down, the hills, with their woolly-looking ceonothus, sugarbush, buckwheat and chamise, look suspiciously as if they might have served as a backdrop for the old M*A*S*H TV show. But after you’ve made it past the Yucaipa turnoff, the San Gorgonio Mountains take on a serious look, with Coulter, Jeffrey, ponderosa and sugar pines dotting the hills.



Between Mentone and Angelus Oaks, Route 38 stands as an open invitation to a two-seater sports car.

The air that, down in the basin even on a coolish December day, had a languid Southern California feel to it, has a bite up here. At 1000 meters altitude, patches of snow cling in the shadows to the hillsides. There’s a chain control sign, turned sideways today, at 25 kilometers up the road. Caltrans has thoughtfully provided turnouts at many of the coils in this twisty road so you can pull off to gaze at the sycamores, pinion and alders in the rocky wash below - and at the LA Basin, now shrouded in a bluish mist.

Angelus Oaks, where Route 38 used to end, is where Dave Hennings supervises the Camp Angelus Maintenance Station, which is responsible for the highway from Redlands to the Onyx Summit. At altitude of 1700 meters, Angelus Oaks has a population of 162 and, incongruously stuck into a 150 mm-deep patch of snow, a Smoky the Bear sign that warns that the fire danger is moderate.

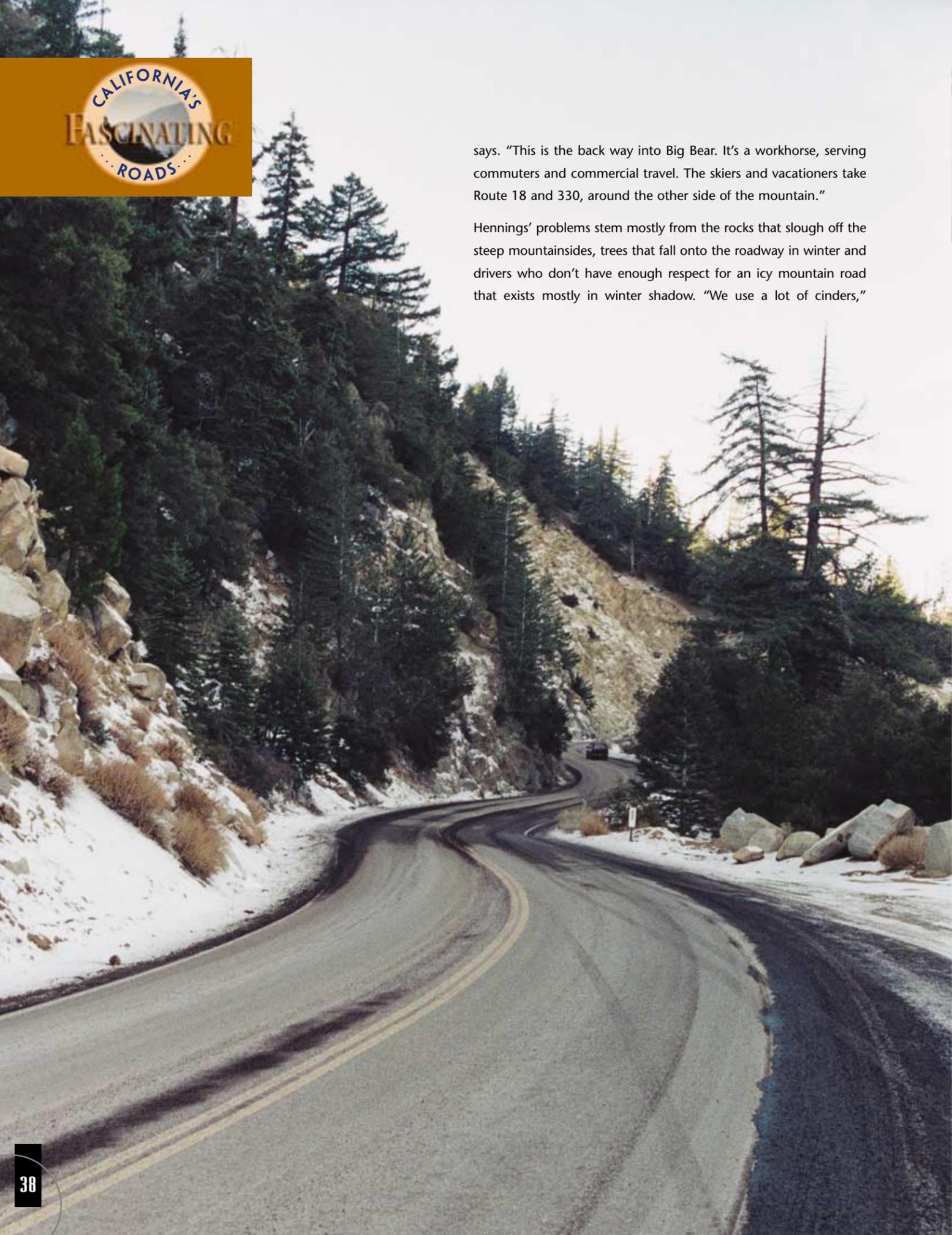
“Route 38 is the highest-altitude road that Caltrans maintains year-round,” Hennings



Campy, kitschy Mentone — an antidote to the burgeoning development of Southern California.



Caltrans has thoughtfully provided turnouts at many of the coils in this twisty road so you can pull off to gaze at the sycamores, pinion and alders in the rocky wash below - and at the LA Basin, now shrouded in a bluish mist.



says. "This is the back way into Big Bear. It's a workhorse, serving commuters and commercial travel. The skiers and vacationers take Route 18 and 330, around the other side of the mountain."

Hennings' problems stem mostly from the rocks that slough off the steep mountainsides, trees that fall onto the roadway in winter and drivers who don't have enough respect for an icy mountain road that exists mostly in winter shadow. "We use a lot of cinders,"



"Route 38 is the highest-altitude road that Caltrans maintains year-round," Hennings says. "This is the back way into Big Bear. It's a workhorse, serving commuters and commercial travel. The skiers and vacationers take Route 18 and 330, around the other side of the mountain."

Hennings says. A 14-year Caltrans veteran, Hennings loves working at Camp Angelus, "where you can take your morning coffee outside and be in the middle of this spectacular scenery."

Out of Angelus Oaks, Route 38 clings to this dizzying hillside among alders, pines, live oak and cedar, and ferns red in the winter. Up the road, things even out a bit to make room for about a zillion church and scout campgrounds: Laurel Pines, Morning Star, Mile High and Lobo Oso. Hmmmm: Wolf Bear? To the left and right, as you cross the nascent Santa Ana River at 1800 meters altitude, the mountains remind you of Montana or Wyoming.

Onyx Summit is at the top, guarded by a gnarled cedar that testifies to the harshness of the winters at 2500 meters. Even so, there's a temperature inversion today and it actually feels warmer than in the canyons below.

It doesn't take long to sail from here down to Big Bear, elevation 2057 meters, population 3800. It's obvious there are no CC&Rs in Big Bear. Log homes sit next to ersatz Tudors, which sit next to humble cottages, which sit next to Teutonic-looking alpine chalets, which sit next to A-frames. And up the hill here, there is a grand, New England-style manor. From the glut of "For Sale" signs, it looks as if there's money to be made in real estate here.

Form follows function in Big Bear, and clearly the function is to provide aid and comfort to the refugees from the LA Basin. Here are the Saddle Trap Saloon, Thelma's Brewed Awakening, the Barn Storm Café, Pottery Plus, Stoves and Stuff and several dozen other businesses jumbled together behind a forest of garish signs. The vehicles that travel these



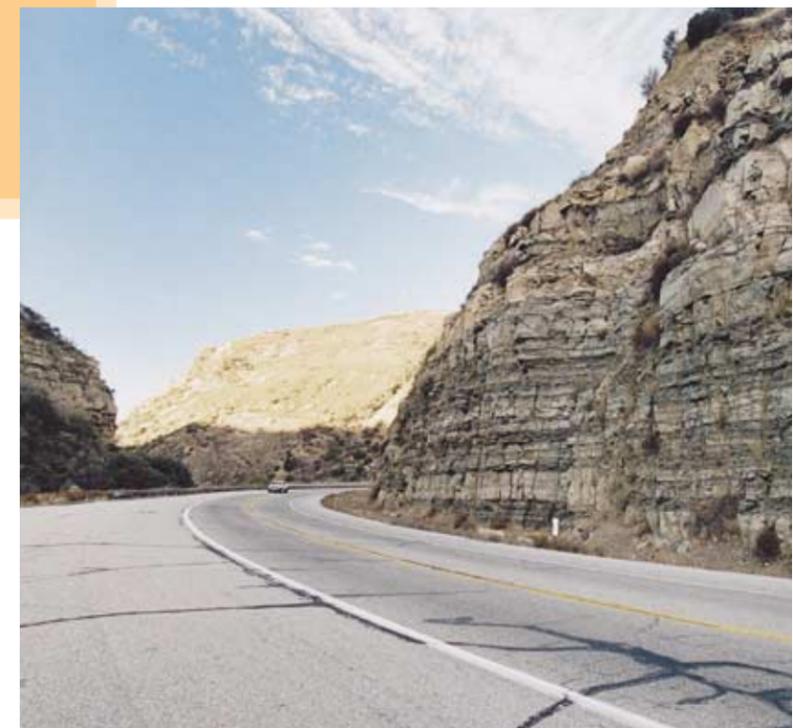
The Onyx Summit is the highest road maintained year-round in California

winter streets look like muddy workhorses: mountainous SUVs, pickups, and clunkers of a kind that understands snow and isn't afraid of it.

We wonder what kind of business the Hitching Post Wedding Chapel does. Ah well, that mountain air . . .

Out behind the town is Big Bear Lake, attesting to the notion that it's just about impossible to ruin the looks of a mountain lake. Today, a thin sheeting of ice films the surface and glistens like silver in the sun. Out in the middle, a seagull rests on the ice. We hope it's not frozen in.

At the lake's edge, two bundled-up fishermen huddle together. Across the lake, the Snow Summit ski area kicks up a blizzard of artificial snow, but lofting over the ridge is a haze of cirrus, a harbinger of the real thing that's supposed to come in tomorrow.





...And Route 38 will bring them up here to gaze upon Big Bear Lake's azure surface and be comforted in its alpine peacefulness.



Out of Big Bear and along the lake for its last 10 km or so, Route 38 makes a serious statement, twisting and turning and bucking up and down. We've been beguiled by the name "Fawnskin" on the map ever since we left Redlands, but after a few short-radius curves, we're at first disappointed to find, after the city limit sign ("pop. 380") more of the same mish-mash of buildings we saw in Big Bear.



Then, around this corner, is the real Fawnskin. There's the aging Fawn Lodge, the original post office in a run-down cabin built in 1890, "3 Bird Productions," boasting a phantasmagoria of knickknacks, and a mysterious business called the Gold Pan. That's it; that's downtown Fawnskin, all closed for business at noon on a Thursday in ski season except for the café, operated by a coltish blonde cutie who hugs every customer who comes in and serves the biggest hamburger we've ever laid a molar to. Open or closed, this place drips with character, which is why a number of movie stars have homes up here.

3 Bird Productions, in Fawnskin, boasts a phantasmagoria of knickknacks.

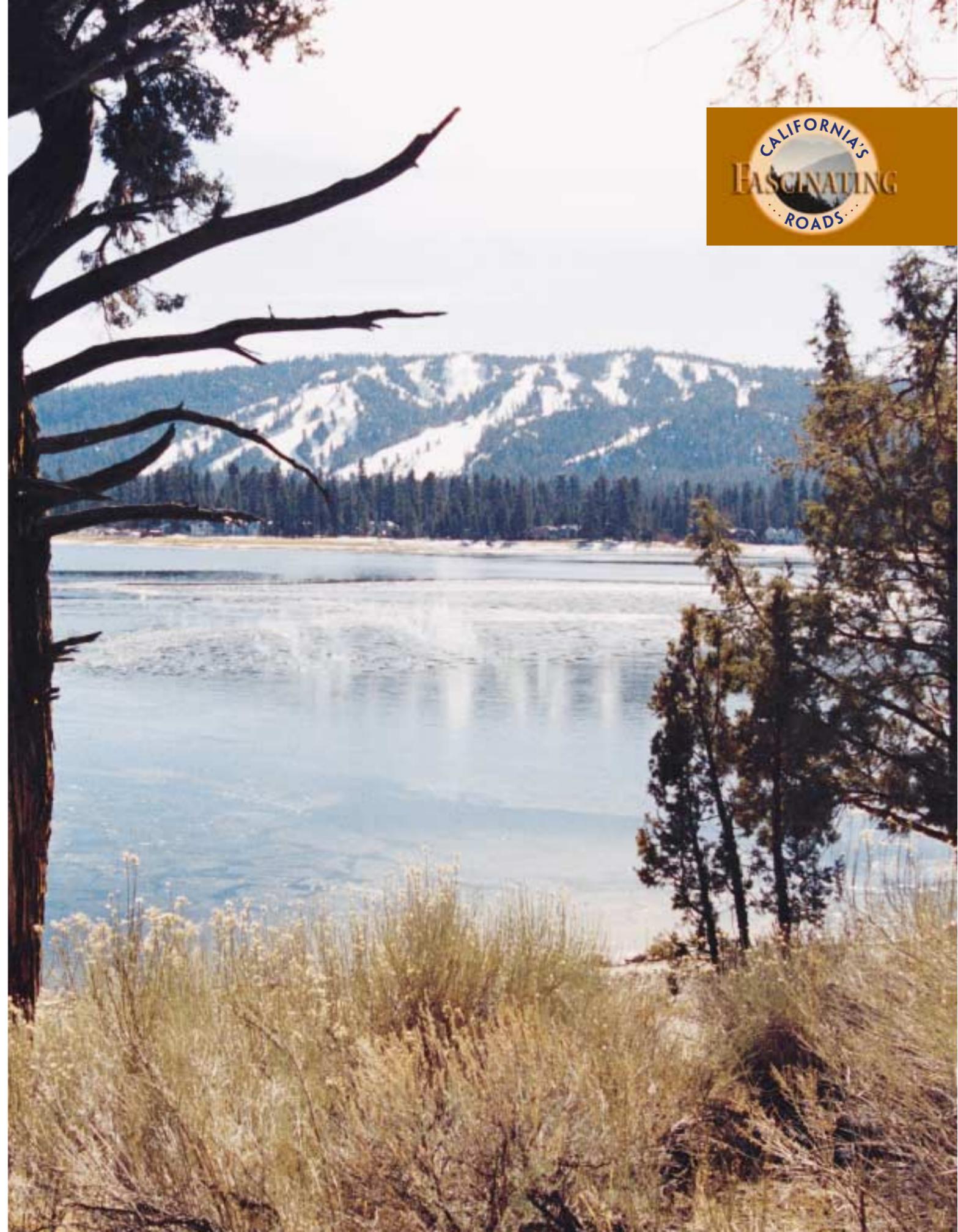
No one we talked to was able to give us the origin of the name "Fawnskin," but we did learn that it used to be called "Grout."

"Fawnskin," we decide, is better. We wouldn't have been beguiled by "Grout."

Route 38 stubs into Route 18 at the toe of Big Bear Lake. This is a real lake, but various Southern California water districts haven't been content to leave it that way. There are two dams, one of them built in 1884 to provide water for development down in San Bernardino but submerged and superannuated by another higher one, built in 1911. That one, the nearby informative plaque says, tripled the storage capacity of the lake.

Here, in the icy waters of Big Bear Lake, is stored the future of those vast lands out to the east. If it and others like it can just store enough water, there will be an endless supply of people coming to Southern California to sip it, cook in it and bathe in it. And Route 38 will bring them up here to gaze upon its azure surface and be comforted in its alpine peacefulness.

- Gene Berthelsen



ROADSIDE RESTS

More than 100 million visitors pull off of California's highways each year to stretch, take a short nap, use restrooms, get a drink of water, picnic, check maps and information, make a phone call, give Fido a run and maybe have a smoke at one of Caltrans' 88 rest areas.

Photos by Ed Andersen

But the rest areas, first developed in 1962 and built over the next decade or so, are stretched to the limit.

"There aren't enough rest areas and, in addition, at the existing areas, there's not enough parking for truckers, restrooms for tour buses, or public accommodations during peak-use periods," says Ralph Carhart, manager of the state's rest area program. "Ninety-five percent of the units have gone beyond their 20-year design life and are difficult to maintain."

These needs are now being addressed as a result of a planning effort that Caltrans began in 1999 and completed in June 2000. Based on analysis of traffic data and local observations, teams from Caltrans districts and headquarters, working with representatives of user groups and private industry, have developed a new Rest Area System Master Plan. The teams were assisted by representatives from the Federal Highway Administration, the California Highway Patrol, the California Trucking Association, the Automobile Club of Southern California, the California State Automobile Association, Parents Against Tired Truckers, truck stop operators and others.

An updated plan, providing an overview for planning and prioritizing the improvement of the 88 existing rest areas and for adding new or auxiliary facilities, was needed. Among the issues to be addressed:

- Rest areas are important to traffic safety. Driver fatigue and drowsiness and roadside parking can be significant problems that may be reduced when rest areas or other safe stopping opportunities are available.
- Parking needs of commercial drivers deserved special attention. Rest areas were designed to provide only 20-minute stops for truckers, but drivers now use them for much longer

periods, often because of a lack of available private truck stops or other safe parking and lack of access to up-to-date information about parking opportunities.

- The department needed to base the update of the master plan upon analysis of traffic data and field observations and



Parking needs of commercial drivers get special consideration in the new plan.

include comments of stakeholders, partners, potential partners and local agencies.

- Rest area planning and design standards needed updating. Rest areas not only must be clean and safe 24 hours a day, but be perceived as such by the public. Persons with disabilities need access to

durable and easy-to-maintain facilities. New designs needed to incorporate security features and manager facilities to improve operations and increase public safety.

- Partnerships with private businesses and other agencies were important to supplement capital resources and to provide improved management and security. The department needed to expand partnership opportunities and create a supportive atmosphere for them by responding to market, political and regulatory realities.
- Caltrans needed a new, more flexible approach to attract partners to help plan, build, maintain and operate facilities that could meet the public's needs.
- A consistent underlying architectural design for California, while allowing regional variation, was needed.

"The plan recommends 80 new rest areas," Carhart says, "to be built either through partnerships with private interests or other public agencies or, in the absence of partners, with public funds. It also recommends improvements of various kinds to the rest areas already in operation. Safety priorities, partnership opportunities and project deliverability will govern recommendations for specific projects."

Since completion of the master plan, Caltrans districts have initiated projects for adding new rest areas and improving existing ones. "We are now rehabilitating rest areas at Gaviota Pass, Willows and Desert Oasis," Carhart says. "And one rehab project, completed at the Maxwell rest area, includes a drop-in office for the California Highway Patrol. We will soon advertise rehabilitation of the Christoffersen, Westley and Erecca rest areas, and we are designing the rehabilitation of 17 others."

Current program funding allows for improving accessibility, replacing deteriorated rest rooms, improving water, wastewater disposal and lighting systems, increasing rest room capacity where needed, adding crew rooms and lockers for disabled maintenance contractors and drop-in offices for California Highway Patrol officers.



Many rest areas will now accommodate California Highway Patrol workspaces in order to provide additional security for motorists.

- Master site plan, geometrics, wastewater disposal and right of way.
- Safety, security, and facilities for rest area management and law enforcement.
- Maintainability and facilities for maintenance crews.
- Facilities for activities such as the Business Enterprise Program, newspaper stands, etc.
- Accessibility for persons with disabilities.
- Signs, public information, telephone and language needs.

"We think California Highway Patrol drop-in offices will be a notable addition to our rest areas," Carhart says. "They'll have a telephone, computer, desk, and restroom to encourage in-and-out presence of officers to boost security at our rest areas."

New building priorities give preference along interstate and major commerce routes, areas with large gaps in service and where the nearest rest areas are overcrowded or where there is chronic unauthorized roadside parking. Districts are encouraged to initiate the highest priority projects, as well as any project where there is significant interest in a private sector partnership.

Caltrans is asking for partnership proposals for developing new rest areas on Route 99 at Chowchilla, three locations on Interstate 5 between Buttonwillow and Westley, Route 50 near Kyburz and on Interstate 8 near the Sand Hills.

The 2000 SHOPP 10-year plan identifies rehabilitation needs of \$77 million. The 2002 SHOPP contains programming for \$58 million in rehabilitation projects and \$50 million for new rest areas. However, the need is substantially higher, with \$121 million needed for rehabilitation and \$283 million for new rest areas.

Other issues addressed by the master plan include:

THE VISION



The California Safety Roadside Rest Area System is a well-planned and maintained system of attractive and safe places where drivers can restore their energy and alertness while gathering information and learning about California's natural and cultural resources.

ESSENTIAL TO HIGHWAY SAFETY

Rest areas are central to traffic safety. They are clean, safe, and comfortable places for drivers to combat fatigue and plan their trips. Attractive and useful rest areas are effective in meeting their basic goal: encouraging motorists to use a safe location, off the roadway, while taking a break.

SAFE, CLEAN, ACCESSIBLE AND ATTRACTIVE

Rest areas welcome families with children and are easy to use for everyone, regardless of age, disability or language. They are safe, secure, convenient and pleasant, with lighting, picnic tables, benches, inviting lawns and other features that make them truly 24-hour facilities. Their amenities and attractiveness entice motorists off the road.

COORDINATED AND BALANCED SYSTEM

Truck stops, visitor centers, vista points and other public facilities are part of a system of stopping opportunities placed where they are needed most, taking advantage of locations where the goals of several partners can be achieved simultaneously.

MAINTAINABLE AND SUSTAINABLE

Rest areas are designed for long-term use. They are easy to maintain, so they are always inviting. Innovative equipment and materials make them vandal-free.

INFORMATION CENTERS

Travelers use rest areas to learn about local history, businesses, parks and recreation areas, as well as traffic and roadway conditions. Public information reflects the rest area's location, whether at California's border, near a natural treasure, or on the outskirts of a large, complex urban area.

REFLECTIVE OF STATE AND REGIONAL THEMES

With a consistent, high-quality design concept, the rest areas match their historical, cultural and environmental surroundings. Desert motifs, innovative energy technologies and Native American history are some individual design themes.

ENVIRONMENTALLY SOUND

Rest areas are showcases of resource conservation and environmentally appropriate management. Landscape architecture and energy technologies reflect the State of California's commitment to environmental quality.

SUPPORTIVE OF ECONOMIC HEALTH

By orienting travelers to local businesses, the rest areas support the state's economic health. They also play a pivotal role in reducing the economic losses associated with traffic accidents.

FOCUS ON PARTNERSHIPS AND MULTIPLE USES

Rest areas are focal points of partnerships between Caltrans and other public agencies and private interests that can help prevent or respond to problems, increasing the number of eyes on the street and adding a sense of security.

The Posey Tube Retrofit

Tube

by Greg Bayol
Chief of Public Information
Caltrans District 4
Photos by Bill Hall

Two 1000 meter-long tubes, snugly buried beneath the Oakland Estuary, carry an average of 60 000 vehicles between the cities of Oakland and Alameda each day. It is fair to say that these tubes, known as the Posey Tubes after the engineer who designed the first of them, are the lifeline of the 70 000 people who live in the bayside city of Alameda.

Alameda started life as a peninsula issuing from Oakland into the Oakland Estuary, but was transformed into an island when the U. S. Army Corps of Engineers completed a tidal canal in 1902 that severed it from Oakland. The island was served primarily by ferries and other waterborne transportation but, in 1927, George A. Posey, a state engineer, connected it with Oakland by means of the tube, on what is now State Route 260. A second one, the Webster Tube, was completed in 1963.

This lifeline was profoundly shaken in 1989 by the Bay Area's Loma Prieta Earthquake, which resulted in liquefaction above the south end of the Webster Street Tube, damaging the bulkhead where the tube landed on Alameda Island. After similar damage was found to the Posey tube, it became clear that a retrofit was in order to prepare for the next quake, which could cause even more damage.

Posey developed one of the most innovative means to tunnel underwater that had been devised to that time. His assignment in 1925, when development of the tubes was started, was to come up with a way to provide vehicular access from Oakland to Alameda, a kilometer away. Due to heavy ship traffic, recreational sailing and the need to avoid a lift span that would limit traffic flow too often, his roadway had to go beneath the water.

Posey's method called for an underwater trench to be dug connecting the two cities. Twelve 60 m-long sections of tube weighing 5 million kg each were dropped into place from barges floating on the Oakland Estuary, connected and covered with dredged backfill consisting of sand and bay mud. The tube sections were waterproofed using a bituminous coating. The unique feature of this method was that all components, including the roadway,

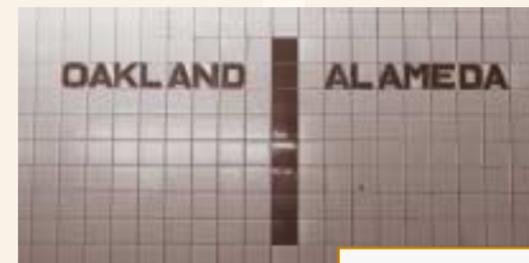
air ducts and sidewalks, were contained in each section. When completed, the tube was the largest of its type until later that same year when the famous Holland Tunnel in New York opened.

The Posey Tube was renowned not only as an engineering feat but also for the aesthetic leap taken with the design of the portal building in Alameda. This was one of the first examples of Art Deco design in the Bay Area. Both Posey and the building's architect, Henry H. Meyers, went on to design the portals of the Caldecott (Broadway low-level) Tunnel between Alameda and Contra Costa counties.

In the 1950s the demands of the shipping channel increased and the Port of Oakland needed to dredge the estuary. This meant having to remove material that helped hold the tunnel in place and kept it from floating. The solution was to add iron ore (magnetite) to replace the removed fill. This had to be done in a carefully-designed, step-by-step process to prevent the tube from either sinking or floating. This process worked and the estuary was able to handle larger ships, though, on occasion, an anchor has

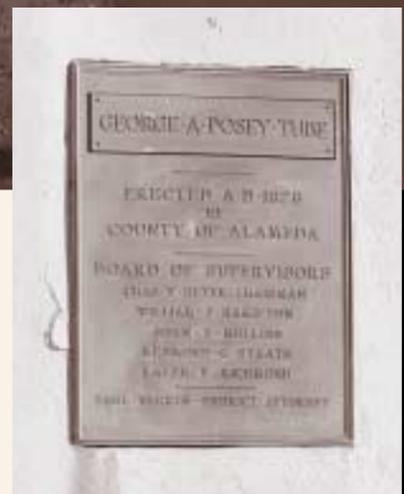
been known to crack the outer shell of the tube, calling for repairs to prevent flooding.

In 1947, with travel from the Alameda Naval Air Station beginning to stress the single tube, the state proposed a huge project for a new San Francisco-Oakland Bay Bridge adjacent to the existing structure. A more southerly bay crossing would have connected directly to the Posey



Detail at an entrance to the Posey Tube shows early Art Deco influence.

The Posey Tube was renowned not only as an engineering feat but also for the aesthetic leap taken with the design of the portal building in Alameda.



Tube and an additional parallel tube. In 1963, the only surviving portion of the entire project opened to traffic - the Webster Street tube. This new tube was built in the identical fashion as the earlier Posey model and helped to handle the increasing traffic volumes accessing Alameda.

"The problem with tubes is that they are full of air and want to float," says John Ziakoff, who oversaw the first phase of two Posey/Webster retrofits. "The challenge is to have the tubes resist floating or sinking while being shaken by a 7.25 magnitude quake coming from the nearby Hayward fault."

Detailed studies, begun by Parsons Brinckerhoff and Ben C. Gerwick, looked into several options to keeping the tubes in place. The first was to densify the sand backfill that supported the tubes, replacing soils while vibrating the material into place. This was seen as too risky since

failure of the supporting material could occur during the operation and the tubes could sink.

A proposal to inject grouting from inside the tubes to the surrounding support material was also rejected due to the risk of losing the integrity of the tube itself and causing flooding. This would have been done from inside the cramped, narrow plenums, raising questions of constructability and traffic delay since tunnel closures would have been frequent.

"We considered anchoring the tubes with straps," Ziakoff says. "But that was also rejected because it would have required removal of the backfill above the tubes, resulting in floating."

After a closer look at the floatation issue, designers determined that walls to contain the material under the tubes during liquefaction would limit movement of the structures. "The older tube has different qualities of backfill; jet-grouting columns on each side of the tube will strengthen the surrounding soils," Ziakoff says. "The columns will be installed at various locations along the tube and eventually fill in to form a wall that will prevent the supporting soils from moving in an earthquake."

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Ziakoff describes the grouting procedure as a "rotating turret

spinning at 200 rpm, spewing cement at 5 million K/m²." The result is the densification of the soils supporting the tubes and holding them down. The type of support required will be determined by the type of soil at each location. The tubes were constructed with backfill consisting of imported sand in some places and bay mud in others. The soils, which currently can withstand 0.05 K/m² force, will gain strength from densification to withstand 500 000 K/m².

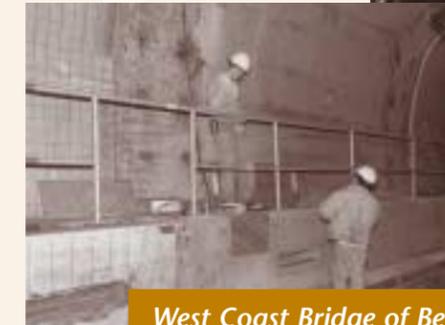
The contractor will install stone columns built of 100 mm angular rock on the Webster tube. These will be constructed beside the tubes and also act as drains to relieve water pressure when ground movement occurs.

In addition to dealing with the liquefaction and overall movement of the tubes, designers had to look at structural components. At the point where the tubes attach to the vent buildings, more flexible joints have been placed.

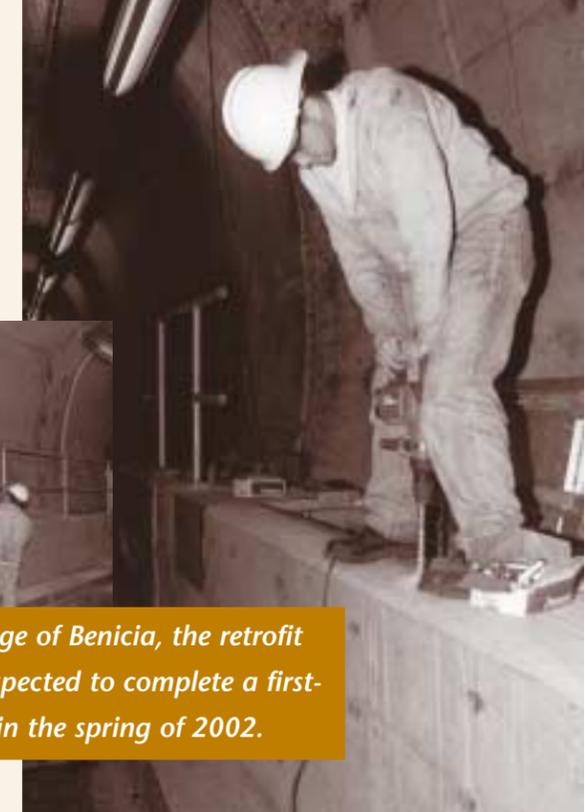
These joints permit movement of the tube toward and away from the more rigid buildings. In addition, tube-to-tube section connections have been improved so that movement along the tube can occur but sideways movement would be limited when the ground is shaking.

This retrofit will result in the tubes being able to withstand a 7.5 magnitude quake emanating from the Hayward fault, 6 km away, and not cause catastrophic damage. In addition to the structural work, a warning system will be installed to alert motorists to vacate the tunnel and notify approaching traffic not to enter. The retrofit is intended to prevent flooding of the tubes for at least 30 minutes after a major seismic event.

The engineering of the Posey Tube retrofit has been a challenge, but right-of-way and environmental considerations



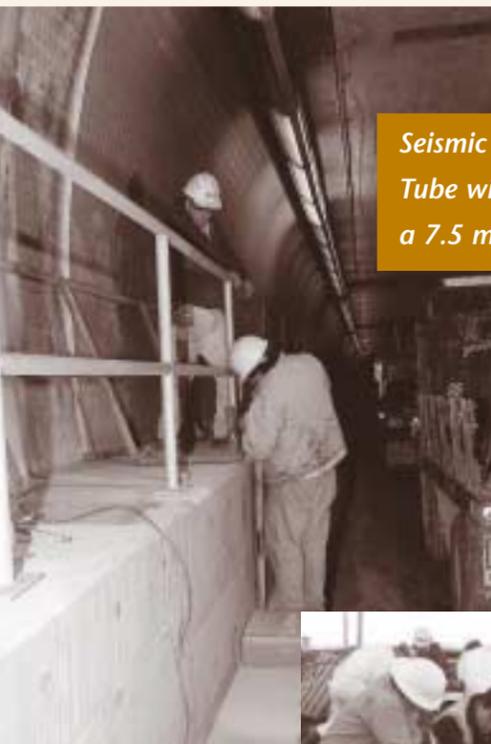
West Coast Bridge of Benicia, the retrofit contractor, is expected to complete a first-phase contract in the spring of 2002.



were no less daunting. The exterior tunnel work requires taking over a parking lot next to one of the biggest tourist destinations in the East Bay - Jack London Square. The disturbance of the bay mud must be kept to a minimum and work must allow for tidal currents that could carry cement away from the project.

Traffic control for the first project was critical. Work had to be done entirely at night, with full closures of each of the tubes while traffic was diverted to the other or to bridges. Also, during the work, Warner Brothers Pictures made use of the Posey Tube to film scenes for "The Matrix II".

The first contract, for about \$25 million, dealt with the tube joints and is nearing completion in the spring of 2002. West Coast Bridge of Benicia is the contractor. Bids for the second contract, for the exterior work to hold the tubes in place, were opened on January 9, 2002. This work will cost about \$27 million and require 600 working days - about two and half years - to complete.



Seismic work on the Posey Tube will ensure its safety in a 7.5 magnitude quake.



Working with INDIAN Communities

Photos by Ed Andersen



Caltrans worked intensively with Native Americans and local agencies to provide access to the Susanville Indian rancheria.

California's first highways were, in fact, trade routes, trails taken by our state's first inhabitants. A map of those trade routes, worn into the land over the course of several thousand years, is remarkably similar to a map of today's California State Highway System.

So it is not at all unlikely that when Caltrans engineers, planners and maintenance workers do something to a state highway, they may affect something of interest to California's Indian communities. These communities, over the past several decades, have become increasingly vocal about the importance for state and federal agencies to understand and preserve their cultural resources. Federal and state laws and regulations have gone through a cycle of change over the past several years in an effort to recognize the need to preserve their heritage.

"Director Jeff Morales recently issued a policy that is designed to inform the actions of Caltrans staff when they encounter a sphere of Native American interest," says Cynthia Gomez, head of the Caltrans Native American Liaison Branch. "That policy directs Caltrans staff, when working on issues that affect Native American communities, to act consistently, respectfully and sensitively toward them."

"As the laws and regulations have changed, I think there has been considerable confusion within the department as to what the requirements are," says Gomez. "The director's policy aims to clear up that confusion."

The United States Constitution recognizes Indian tribes as separate and independent political communities, with their own laws, within the territorial boundaries of the United States. In an executive order, President Bill Clinton, in November 2000, required all federal agencies to establish "regular and meaningful consultation and collaboration" with Indian tribes. Transportation Enhancement Act-21 further requires that planning of transportation activities within the state be carried out on a government-to-government basis with federally recognized tribes.

California has the largest number of federally recognized tribes in America, 109 in total, with more currently seeking federal recognition. "A tribe is a governmental entity," Gomez says. "We have a duty to seek their advice and consent to our actions, where we affect them, just as we would if we were affecting a city or a county, or indeed, anyone. This means communication and negotiation."



Cynthia Gomez heads Caltrans' Native American Liaison Branch.

Thus, the Caltrans policy directs departmental staff to:

- Acknowledge tribes as unique and separate governments.
- Avoid or minimize adverse impacts to Indians' cultural and other resources.
- Respect California Native American rights, sites, traditions and practices.
- Consult with tribal governments before taking actions that may impact them.

Caltrans' definition of Native American communities goes beyond tribal lands, to include lands held in trust by tribes, tribes not recognized by the federal government, members of California tribes living outside a reservation or rancheria, and Indians who are not part of a California tribe, but live in California. Although most laws reference federally recognized tribes, laws such as those involving environmental justice require public participation of all the tribal communities.

"If you think there is a possibility that a state project may affect a tribal interest, the first thing you should do is check the location of the project in relationship to the tribal community," Gomez says. "Then, if the project does affect Indian lands, you must meet and consult with the tribe." The rules of tribal involvement are exactly the same as those involving any other interest affected by a project: honest communication, as early in the project as possible.

Coordination with Indian communities touches virtually every functional area within Caltrans. And because of this, the department has established an 18-member Native American Advisory committee that advises on its policies and activities. Because of the number of environmental issues involved in project development, there is a subcommittee that advises on these matters.

In Southern California, 25 tribes have developed a consortium to focus on transportation-related issues. This organization, called the Reservation Transportation Authority, is overseen by Chief Executive Officer Bo Mazzetti. Several of its members also serve on the Native American Advisory committee.

“A tribe is a governmental entity,” Gomez says. “We have a duty to seek their advice and consent to our actions, where we affect them, just as we would if we were affecting a city or a county, or indeed, anyone. This means communication and negotiation.”

Staff from Planning and Modal Programs have the lead in working on policies that affect Native American communities. They serve as the director’s representative to the Native American Advisory Committee and advise districts, divisions, and state and local agencies on how to take Indian concerns into account.

The Civil Rights office is responsible for issues regarding civil rights, disadvantaged business enterprises and tribal employment rights ordinances, and advises tribal governments and the department on Title VI.

Maintenance activities are often performed on or near Indian lands, and the Operations Program has responsibility for encroachment permits, which may be sought by Indian

communities or affect them when sought by private interests. One point of conflict was recently resolved when the department began approving destination signs pointing the way to Indian reservations.

Project Delivery, probably more than any other functional area, has the greatest day-to-day involvement with Native Americans, because road-building often affects so many people, properties and facilities directly. As projects enter the Environmental Analysis phase, the most serious conflicts often arise. “We do have communication problems here,” says Cynthia Gomez. “Indians are understandably protective of their cultural resources and require consultation to protect those resources.” The National Historic Preservation Act of 1966, the Native American Graves and Repatriation Act of 1990 and a number of other laws and regulations govern the disposition of cultural materials.

Gomez’s liaison branch is the department’s ombudsman and the point of contact for legal issues involving Indians. The branch has written a book to guide Native Americans through the complex maze of transportation development. It helps other Caltrans units, tribal governments and local and regional agencies talk to one another and provides information, training and facilitation related to Native American communities.

“This is important, because so much of what we do is now heavily influenced by the actions of local and regional agencies,” Gomez says. “Often these agencies do not have a clear understanding of their responsibilities to Native American communities. We have been able to help a great deal by facilitating communication between them.”

Gomez’s branch, along with other Caltrans offices and District 2, recently worked with the Susanville Rancheria in Lassen County to develop a \$2 million project to provide an



Caltrans Director Jeff Morales with Ben Scenato, Chair of the Santa Ysabel band of Diegueto Indians and Bo Mazzeti, of the Rincon band of Mission Indians.

was completed November 21, 2001, on time and under budget, and local officials and others from the agencies involved in the project were on hand to cut the ribbon marking the opening.

Elsewhere, Caltrans has helped tribes develop projects in Tulare, Riverside, San Diego, Humboldt, and Mendocino counties. To meet the tribes’ needs, Caltrans attended meetings, got the parties to the table and helped the parties understand each other’s needs and positions.

“The key is communication,” Cynthia Gomez says. “There is a very extensive body of law governing relations between the tribes and federal and state governments. And there are potent cultural issues that have to be understood by both Caltrans and the tribes. Our job is to keep the communication flowing, for the good of both.”

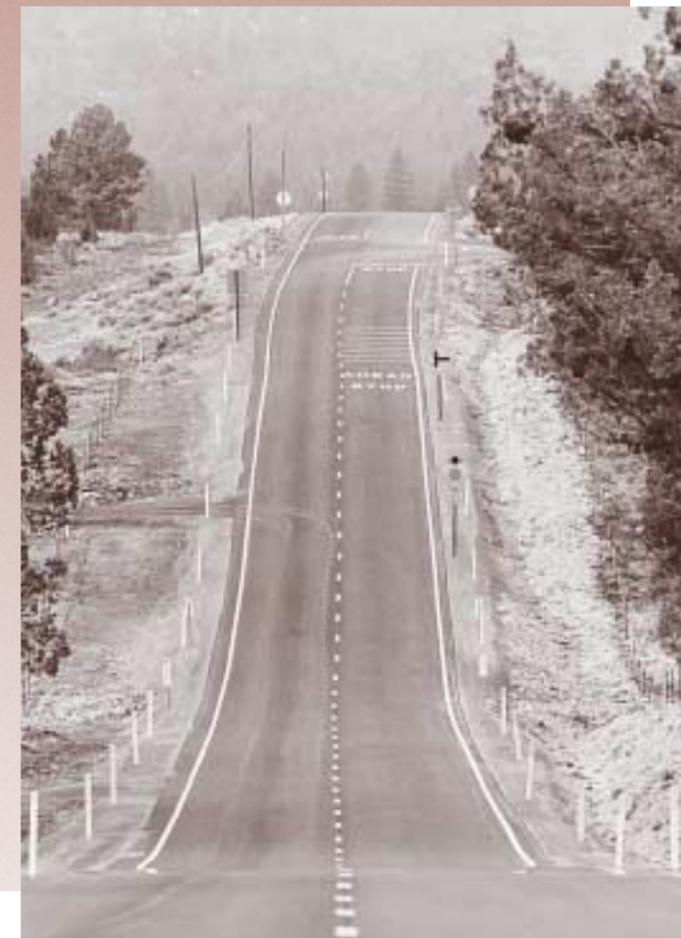
-Gene Berthelsen

access road to its rancheria. On November 26, 2001, District 2 participated in a ceremony to celebrate the completion of Spring Ridge Road, near Susanville.

The junction of Spring Ridge Road and State Route 139, about 3.2 km north of Susanville, serves the Upper Susanville Indian Rancheria and Lassen County residents. The California Transportation Commission sponsored a demonstration project in February 2000 after the tribe had identified the need to reconstruct the road to improve access to schools and public transportation and improve emergency response time to the rancheria. The project also improved circulation for Susanville at its northern city limit. Caltrans District 2, the Bureau of Indian Affairs, Lassen County Transportation Commission and its Board of Supervisors provided funding for the project.

Ten months and a number of interagency meetings were required to resolve the differing requirements of the Caltrans Minor Program, the Bureau of Indian Affairs Indian Reservations Roads Program and Lassen’s Regional Transportation Improvement Program. An agreement to provide funds for the project, executed on May 8, 2001, led the way for the project to be constructed last summer. It

Spring Ridge Road, near Susanville, a success of state, local and tribal coordination.



The Caltrans Native American Liaison Branch meets regularly with Indian interests to discuss policy and project issues.

A NEW SPAN FOR

8 INTERSTATE

Photos by Don Tateishi

The San Francisco Bay Area is replete with signature bridges, the most famous of them being the glamorous Golden Gate Bridge and the workhorse San Francisco-Oakland Bay Bridge. Now comes a new addition, a recently-opened pedestrian-bicycle bridge that is the only one of its kind in California. The innovative span, which crosses Interstate 80 at Berkeley, started construction in the fall of 2000 and was completed early in 2002.

The “basket handle” steel arch bridge, totaling \$6.4 million in cost, was designed by OPAC Consulting Engineers of San Francisco, with consulting assistance from UC Berkeley Professor emeritus T. Y. Lin. Funding of \$3.9 million was provided by the Federal Highway Administration. The State Transportation Fund for Clean Air provided \$350 000 and the Alameda County Congestion Management Agency provided \$200 000. The City of Berkeley provided the remainder.

Hamid Kondazi, a former Caltrans structures engineer who is now with the City of Berkeley, was the project manager.

“The bridge was under development for five years,” Kondazi says. “The choice of the free-span steel arch was dictated mostly by the need to span completely across the busy Interstate 80 as well as a frontage road on the west side of the freeway, a distance of 90 meters. We could not place a support at the center of the bridge because Caltrans required that the space be available, should it ever need to widen Interstate 80 into the median.”

“But we also wanted a signature bridge, something that, aesthetically, would serve as a gateway for travelers through Berkeley,” Kondazi says. Six different designs were considered, including:

- Concrete box girder with median column on a curved alignment over the freeway.
- Concrete box girder without median column on a straight alignment over the freeway.
- Concrete strut frame with median column on a curved alignment over the freeway.
- Single tower cable-stay without median column on a straight alignment over the freeway.
- Steel arch without median column on a curved alignment over the freeway.
- Steel arch without median column on a straight alignment over the freeway.

The bridge’s style was chosen by the Berkeley City Council, after many public meetings and consultations with local interest groups and, in particular, representatives of the bicycling community.



Former Caltrans Structures Engineer, Hamid Kondazi, managed the project to build the Berkeley Pedestrian/Bicycle structure.



Kondazi relates that the choice of the free-span steel arch bridge has been so popular with the Berkeley Friendly Bicycle Coalition – the most active bicycling advocacy group in the area – that it has placed photos of the bridge at various construction stages on its website.

The steel “basket handle” arch is the most prominent feature of the bridge, but is not its only design innovation. Another unusual feature is the curved east approach ramp. The unprecedented curvature of this post-tensioned box girder span provides a rideable path over the nearby aquatic park lagoon without the need for permanent foundations in the water.

The bridge provides a direct connection between Berkeley’s city-wide system of bicycle facilities and the much larger San Francisco Bay Trail, which extends from the Berkeley waterfront to Point Isabel in Richmond. The Bay Trail, in turn, will be an integral feature of Eastshore State Park, the land for which was purchased in late 1998. The next step is the planning and actual creation of the park.



The steel “Basket Handle” arch is the bridge’s most prominent architectural feature.

The bridge, which has separate lanes for bicyclists and pedestrians, was built under the terms of a cooperative agreement between the city and Caltrans. Because the bridge spans Interstate 80, it was designed to meet all Caltrans specifications; and indeed, on Kondazi’s bookshelf you can spy a 1997 copy of the familiar green Caltrans Standard Specifications book. The bridge is designed to handle the seismic forces generated by the San Andreas Fault, which runs within 14 km, and the Hayward Fault, which runs within 3 km.

Caltrans also supplied a Structures Representative and a Resident Engineer to do contract oversight on the project. “Caltrans has the engineering and technical expertise for a project of this size,” Kondazi says. “We were glad to be able to make use of that.”



The Berkeley bike/Pedestrian bridge will handle seismic forces from the nearby Hayward Fault.

The bridge was erected in two major phases, the first being the steel-reinforced, post-tensioned lightweight concrete bridge deck, on falsework. The arches, fabricated in five separate segments at the contractor’s shops and a local work area, were then raised and welded together. After wire rope suspenders were placed to attach the deck to the arch, the falsework was removed — first over the westbound Interstate 80, and finally, on January 3, 2002, over the eastbound highway.

“Our cooperative agreement specified closure of Interstate 80 between midnight and 5 am on five separate occasions, but the operation went so smoothly, we were able to do it in just two,” Kondazi says.

The finished bridge, while intended to accommodate bicycle and pedestrian traffic, is strong enough to handle vehicular traffic and could be used in case of an emergency. “This design could easily be adapted to handle regular vehicle traffic,” Kondazi says. “In fact, OPAC Consulting Engineers is currently designing a much larger, similar structure for vehicular use in China.”

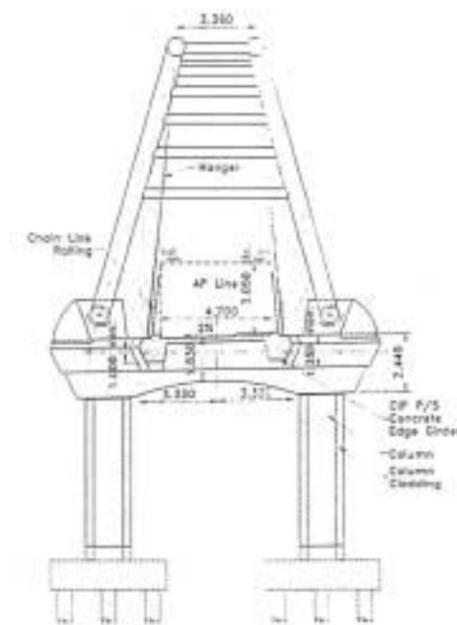
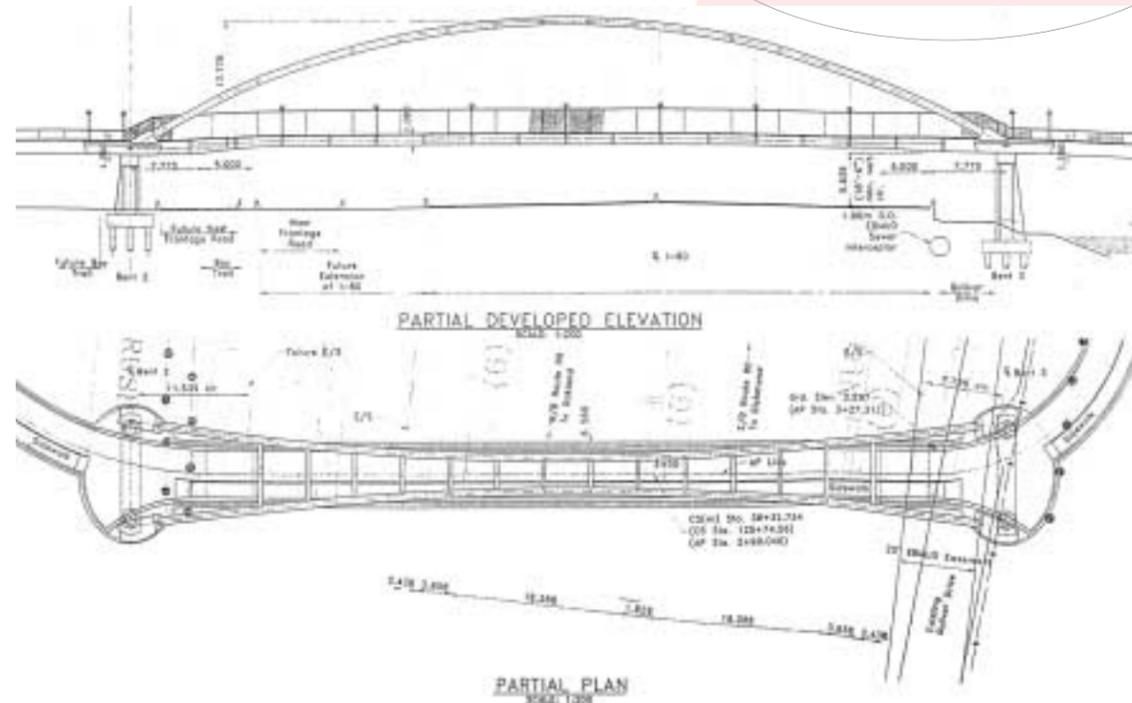
– Gene Berthelsen



The curved eastern approach ramp provides a rideable grade for cyclists.



The Berkeley bike/pedestrian bridge was designed to meet all Caltrans specifications.



THE ROUTE 1 CORRIDOR PROTECTION PLAN



Photos by Jon Hirtz

There is a story, possibly apocryphal, that during the heyday of highway development in the 1960s, a Caltrans project engineer trying to secure approval of a State Route 1 bypass of Carmel became so enraged at one of the project's opponents during a public meeting, he hit her over the head with a rolled-up map.

Whether the incident actually happened probably is not as important as the fact that it is believable. Opposition to the project eventually became so virulent that one of the project's opponents, terminally ill, specified in his will that his ashes be strewn across the alignment favored by Caltrans, giving a new meaning to the phrase "Over my dead body."

The department found itself in a virtual state of war with the very constituency that had the power to accept or reject the project; the war ended in 2000 when the County of Monterey voted to move funds allocated for the project to another.

Today, District 5, headquartered in San Luis Obispo, is using the concepts of Context Sensitive Solutions, as well as a number of other community involvement approaches, to build a collaborative relationship with the agencies and individuals who inhabit the pristine coastal area that it serves.

"This is a very sophisticated constituency," says Greg Albright, District 5's new director. "They have a strong view of how the central coast, particularly the environment along State Route 1, should look and function. We have a

responsibility to take that into account, both in the development and the operation of our system."

The district is planning more than a dozen projects for State Route 1 between San Luis Obispo and the Monterey county line over the next 20 years. These projects, vital to the safety and continued operation of the route, must be developed within some kind of collegial framework if they are to be built. And today, in a gathering of staff from a phalanx of agencies representing those constituencies, District 5 is taking an approach that is light years away from the we-them fight of the 1960s.

To a project engineer from the 1960s, the meetings, with representatives of the San Luis County Council of Governments and the cities and counties along the route, would look awfully unfamiliar, and for good reason.

"That project engineer would have seen the problem as one simply of getting the project built," Greg Albright says. "But there are differing definitions of the problem, and each stakeholder has a differing idea of what it is. Those of us at Caltrans might see a safety or operational problem. But

representatives of a city want the character of their downtown preserved. They are concerned about gateways and walkable cities. The agricultural interests along the way need access to the transportation system. There is a very large and potent constituency for keeping the coastal area pristine."

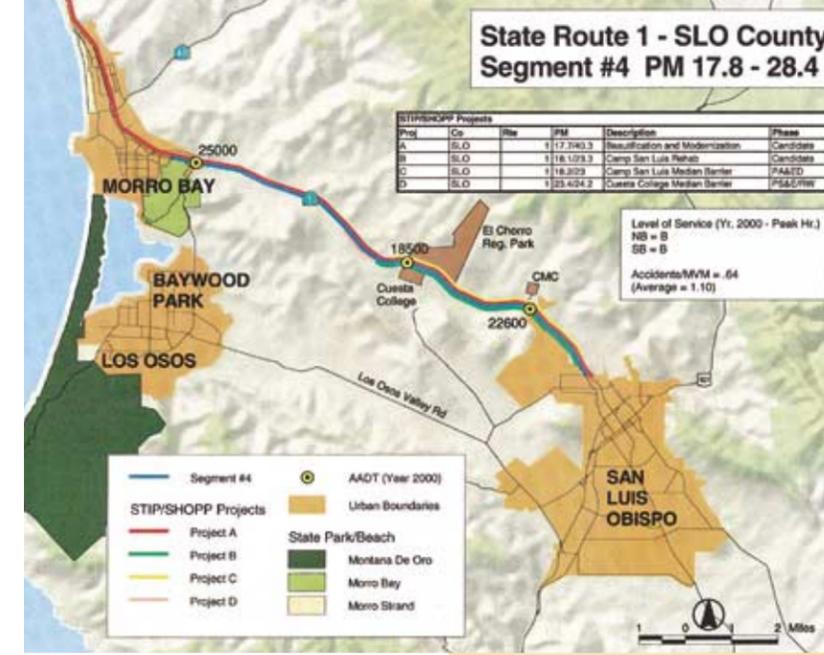
And so the first meetings of the Highway 1 Context-Sensitive Solutions Task Force are not about the project at all, but rather about the purpose of the task force, how decisions will be made, the roles of the individual agencies and how their needs will be considered.

It's a messy process that lurches ahead a step, then drops back one or two. Albright has seen similar processes at work and has faith that it'll work this time. "The district has made estimable use of the Value Analysis process in these situations, even though at times we have confounded the independent facilitators who are supplied to us for VA exercises."

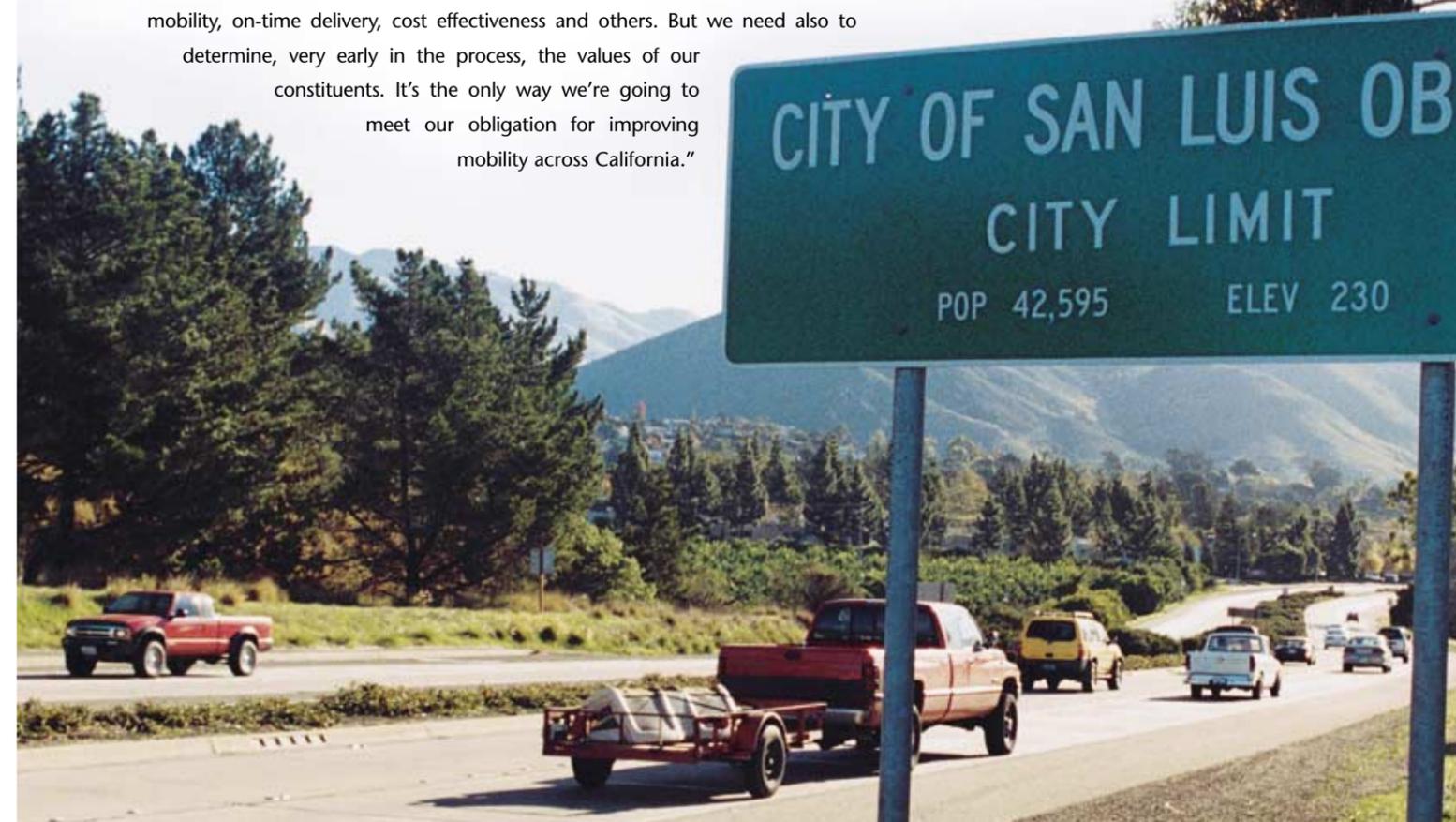
Albright points to a highly successful mediation between the County of Santa Barbara, the city of Goleta, the University of California and several resource agencies to provide access to the university while preserving local values. "At the end of each of several days of discussions, the VA facilitator told me we were not going to get a solution but, in the end, we got one that really basically satisfied everyone."

The key, Albright says, was in identifying shared and competing values. And in the early meetings of the task force, there is a surprising amount of discussion about values. "Caltrans has its own values, and it is very important that we express them," Albright says. "Safety, mobility, on-time delivery, cost effectiveness and others. But we need also to

determine, very early in the process, the values of our constituents. It's the only way we're going to meet our obligation for improving mobility across California."



Caltrans District 5 is applying the principles of Context Sensitive Solutions to preserve the scenic qualities of State Route 1.





State Route 1, hugging the Pacific Coastline, skirts one of California's most precious viewsheds.

The Highway 1 corridor stretches 120 km through San Luis Obispo County, from the tiny agricultural hamlet of Guadalupe to the edge of Big Sur. It traces the lazy streets of the beach towns of Pismo and Grover Beach and the urbanized city streets of San Luis Obispo and Morro Bay. It serves as a major commute/commercial route through Cuesta College and the Camp San Luis Obispo men's colony, snakes alongside the Pacific Ocean through Harmony and Cambria and, at its northern end, provides a misty entrée to Big Sur.

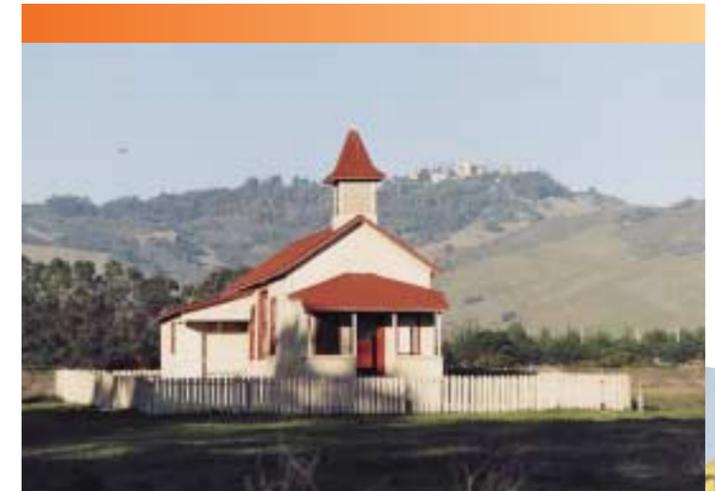
Within this reach, Caltrans is considering a total of 17 projects that include roadway realignments, median barrier, pavement rehab and interchange improvements. Not big stuff by the lights of District 4 or 7's multimillion dollar projects but, as Ron DeCarli of the San Luis Obispo Council of Governments will tell you, it is the stuff that contains both the details and the devil. "Those projects will define the character of our communities for a long time," he says.

"Our objective is to assure that Caltrans projects along Route 1 consider the needs and desires of the local jurisdictions and are sensitive to the viewshed," DeCarli says. "The road has been identified as a Scenic Highway and nominated as a National Scenic Byway. This applies both to future planning and to projects 'in the queue.'"

At today's meeting, even though the assembled government representatives are committed to chewing over the purpose and need of the committee and ways in which

input gets elicited and treated, the subject of a median barrier project soon to be in the pipeline shows the importance of acting collaboratively.

Neither the County of San Luis Obispo nor the regional planning agency is satisfied with the notion of the 9.6 km, unadorned concrete Jersey barrier that Caltrans proposes. The area surrounding the project is in the verdant Chorro valley, bordered by farms and residences, Cal Poly San Luis Obispo, Cuesta College and the California Men's Colony, which provides housing for minimum and medium security inmates. It has "self improvement" written all over it. "A concrete barrier would make this rural scenic highway feel like an urban streetscape," says DeCarli.



"Caltrans has its own values, and it is very important that we express them," Albright says. "Safety, mobility, on-time delivery, cost effectiveness and others. But we need also to determine, very early in the process, the values of our constituents. It's the only way we're going to meet our obligation for improving mobility across California."



San Simeon, Morro Bay and coastal residents all have an interest in Route 1's future.

College town, business center, county seat: San Luis Obispo is a major city along the path of State Route 1.

The local agencies would like to see either a textured or a colored barrier, which could cost as much as seven times what an unadorned one would. Caltrans is concerned about bringing the project in on schedule and within the scope and cost estimate.

Everyone, though, shares one value, and that is providing safety on a highway that now accommodates 25 000 vehicles daily and gets busier every day. It is this value that provides a basis for discussion and negotiation, and the participants in the meeting agree to take the discussion off-line to a working group that will consider a range of solutions even as far afield as mitigating the "urban" look of the barrier by removing billboards along the route.

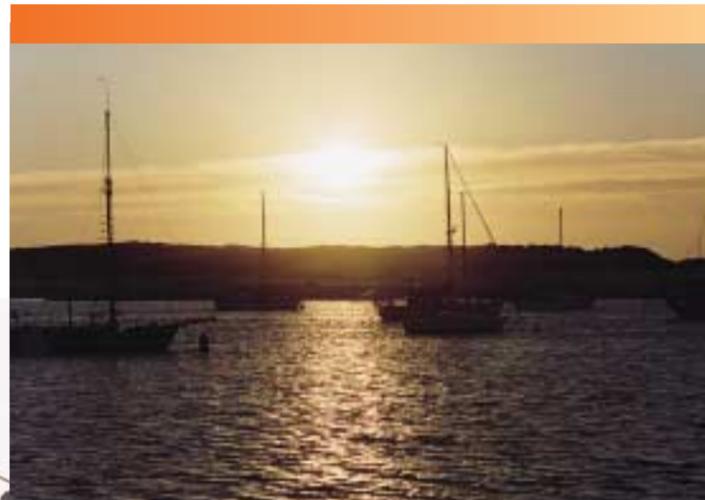
"We strongly support the new director's (Jeff Morales') policy on context sensitivity, something our local jurisdic-

tion has advocated for a long time," DeCarli says. "We are interested in how it will be implemented and applied throughout the region."

"Everyone along Route 1 has a stake in its continued operation" Greg Albright says. "District 5 is doing its best to bring nearby interests in before any decisions are made. We need to be both responsive and responsible. That is, we need to hear and understand the voices of our neighbors and to take them into account wherever we can."

"We also need to articulate our own responsibility for interregional mobility. I believe we have plenty of common ground here. This should be low-hanging fruit."

- Gene Berthelsen



State Route 1 passes the sleepy coastal village of Morro Bay, whose breakwater provides safe mooring for boats.



Oh, You Beautiful Doll

Catherine Crandall, a graphic artist in District 6, never did get over playing with dolls. But today, her dolls are pieces of art, created by her, representing Native American people in authentic dress.

"The dolls are one-of-a-kind, original fine art sculptures that I model in high-fire clay," says Crandall, a 12-year Caltrans employee. "For my modeling, I rely on turn-of-the-century photos of E. Curtis, Kate Corey, R.C. Vorman and the Library of Congress, so each doll is really a three-dimensional portrait of individual Native Americans who lived in the 1800s."

Over the past 15 years, Crandall has perfected her technique.

"I started making the dolls in 1986, doing shows and artist exhibitions in galleries. I've probably made close to a thousand dolls, with the majority being sold to art collectors, gift shops and as museum pieces," she says. "Some were created as special gifts to people I have known, and some were presented to tribal representatives."

"My first doll came about unintentionally after I had sculptured a head and decided it needed a body. From there, the doll materialized. I found the whole process to be magical and have been hooked from then on," she says. "My 30 years of representational drawing, painting and sculpture of the figure made the creation of the doll a natural byproduct of my art. After I sculpt and fire the head, hands and feet of my subject, I make a cloth body, something I learned by trial and error. I research the trib-



District 6 Graphic Artist Catherine Crandall combines her vocation and avocation to produce replicas of Native American dolls.

al clothing and do the sewing, beadwork and decoration to complete the costume as the next step."

The artist herself has gained much through the experience.

"With the creation of each doll, there is a sense of growing and learning," Crandall says. "It's a joy to study the history and lives of the people who lived here first, and an honor to create art representing these dignified people

who have kept their culture and spirit whole, in spite of years of hardship and decimation," she says. "When a doll is finished, I find that my original inspiration to create this art form is contained in the artwork itself."

Crandall has used this special knowledge and expertise in her work for Caltrans.

"One of my jobs as a graphic designer is to illustrate, using pen and ink, ancient Native

American artifacts found in California," she said. "It is very detailed work involving a close visual study and appreciation for the craftsmanship in making that tool or decorative piece."

Whether creating graphic designs of Native American artifacts or putting together the intricate elements of her dolls, Crandall's goal is the same: "I know I am successful when the work has remained pure in its essence and can be shared emotionally by others."

— Jane Sellers, Research Writer, District 6

Engineer's Photo Inspires Highway Mural

After more than 100 showings of his black-and-white and color photography, Scott Shaver, a Senior Transportation Engineer in District 6, has grown accustomed to having his landscapes, portraits and abstracts seen by numerous gallery visitors and exhibition-goers. Soon, his artistic work will be seen daily by thousands of California motorists traveling along State Route 99 through the Fresno area.

"One of my photographs has been selected to become one of the murals to be constructed this fall on Route 99 as part of the Route 99 Beautification Project," Shaver says. The mural, of colorful mosaic tile, will depict a lone oak tree silhouetted by the setting sun. "My photograph was one of five selected from dozens of entries by a committee of well-known artists from the Central Valley. Jeanne Adams, Ansel Adams' daughter-in-law, was the chair of the committee."

That connection to Ansel Adams is particularly meaningful to Shaver, who acknowledges a strong influence by the famous American master photographer, who died in 1984. Shaver has studied under John Sexton, a widely respected photographer and printmaker who was Adams' long-time assistant.

For the past 10 years, Shaver has perfected his skills and focused on fine art photography that, besides landscapes and portraits, has included the subjects of architectural detail and nudes.



District 6 Senior Transportation Engineer Scott Shaver, with the Route 99 mural based on his photograph.

For most of his work, Shaver uses a 4" x 5" large-format camera. "These negatives are large and sharp and yield fine prints," says Shaver, a registered civil engineer who has worked for Caltrans for 18 years.

Though there is no photography involved in Shaver's Caltrans work, he applies his artistic and technical skills to his duties as a Senior Transportation Engineer. "I supervise 12 engineers, doing the design on 18 different projects in the Central Valley and the Mojave Desert. The artistic side of me shows up in a lot of my engineering work, mostly through flexibility and an

urge to be a good steward of the environment," Shaver says. "I am not sure if you can see it in the final plans, but I feel that I look at projects from a less narrow or rigid viewpoint than is sometimes associated with engineers."

Besides the highway mural, another work Shaver is looking forward to seeing soon in wide release is his first fine art photography book, which will contain images of the San Joaquin River. The book, to be published by the San Joaquin River Parkway and Conservation Trust, will be ready for publication in two or three years.

- Jane Sellers, District 6 Research Writer

Doggin' It

Sled dog racing is an unusual hobby. While many have heard about the Iditarod, the 1688 km sled dog race from Anchorage to Nome, Alaska, few individuals are aware of the many sled dog racing events during the winter in the United States. Bill Wilkinson, a 44-year veteran Caltrans employee, participates in 22 to 32 km races in California, Oregon and Washington.

"But I have no desire to attempt or to qualify for the Iditarod," he says.

Races are scheduled during January, February and March. The same course is run each day, with the same team, and the total time for both days determines winner placement. There are sprint races, mid-distance (Bill's event), skijoring and juniors. The sprint races have classes for three eight-dog teams. They run 1.6 km per dog or 4.8 to 12.8 km and can average 32 km/h. The mid-distance event involves a six-dog team over a distance of 20 to 30 km with an average speed of about 16 km/h. Skijoring involves being pulled on cross-country skis by one to three dogs for a distance of 4.8 km and is the event that Bill started with in 2000. Juniors use two-dog teams over a 4.8 km course. Bill expects 40 to 60 teams to enter each of the California events.

The International Sled Dog Racing Association has rules that local clubs use, along with a rating system based on points, to determine state-by-state, United States, and International rankings. The Sierra Nevada Dog Drivers club sponsors the California events.

While Bill owns only two Siberian Huskies, his close friend Barbara Schaefer is a Siberian Husky breeder and loans him four dogs. Bill and Barbara have been training 18 dogs since September. They plan to have three six-dog teams ready for the 2002 races. Most of the training occurs three or four times each week on dirt roads, with the dogs pulling wheeled carts or an all-terrain vehicle.

"The most popular breed used in sled dog racing is the Alaskan Husky," Wilkinson says. "They originate from Siberian Huskies or Malamutes being cross-bred with hounds. They usually run faster than the pure bred teams.

I use registered Siberian Huskies, the second most popular breed. My team includes two champion show dogs and a 13-year-old lead dog named Spot. Spot came from Minnesota where she retired from an open class sprint team."

(Bill and Spot are both retired annuitants, still at work!) Despite Spot's age, she still wants to run and expertly leads Bill's team.

"Sled dogs are bred for sled racing," Wilkinson

says. "They get very excited until the race begins but, once underway, they are quiet and hard at work. There are rules for safety and to protect the dogs."

Bill offers Spot as an example of a healthy, happy and well cared-for dog that has been a sled dog since she was a year old. "I believe her life as an athlete will result in a longer-than-normal life span," he says.



Annuitant Bill Wilkinson, his dog Spot and friends head cross country on a mini-Iditarod.

Honoring Lisa

Tom Frost was working on his graveyard shift in Orange County at 5:00 am on September 11 when the phone rang. His daughter Lisa was on the line.

"Dad, I'm about to board the plane," Lisa said. "I'll see you in five hours. I love you."

"I love you too," Frost said. "I'll be at the airport to pick you up."

Seems like an ordinary conversation between father and daughter, doesn't it? But those were the final words ever exchanged between Tom and Lisa Frost.

Tom and his wife Melanie related this to me when I took them to the Sacramento Sikh Society temple on December 9th, where Tom addressed the congregation.

I didn't know the Frost family until October 9th. How our families have become good friends is a fascinating story.

The terrorist attack on September 11 shocked and angered everybody. Like other Americans, Sikhs in Sacramento united in this hour of crisis to help their fellow citizens on the East Coast. Sikhs collected and donated \$51,000 to the victim's families, organized two blood donation campaigns and a candlelight vigil at the Sikh temple. Sikhs also held a 48 hour continuous prayer for the victims and their families.

Osama Bin Laden is not from our religion nor country nor culture. In spite of this, some people thought that Sikh Americans, who wore turbans for modesty and out of respect for tradition, might have some relation to the terrorists. A 49-year-old Sikh gentleman, a father of three, was shot dead in Phoenix. A Sikh grandmother was stabbed in San Diego. The Sikh temple in West Sacramento was attacked, in Cleveland firebombed, in New York shot at and in upstate New York burned.

Sikhs scrambled to explain that theirs was a separate religion, neither Muslim nor Hindu, that originated in India

500 years ago. Sacramento-area Sikhs went to various community and patriotic events to help people understand that even though we looked different, we were fellow citizens and supported the American government.

Sikhs were part of a Remembrance Day parade on October 9 when Governor Gray Davis honored the families of passengers of the hijacked planes. A friend and I were escorting those families when a gentleman gave me a button with a picture on it. It was a picture of his daughter, Lisa, a passenger on United Airlines Flight 175, the second plane to hit World Trade Center.

After the ceremony the Frosts thanked me. We exchanged phone numbers and have talked regularly since then.

Lisa had completed two degrees in four years at Boston University by the summer of 2001 and planned graduate study at the University of California at Berkeley. A client asked her why, since she had a wonderful job in Boston, she wanted to leave. "I can't stop," she replied. "I am excited. I want to go home."

I had watched the coverage on television and knew many details, but now I was hearing from real people who were affected by the tragedy. I couldn't bring Lisa back but I wanted to share their grief and help them realize that there were people out there who cared for victim's families — that's what Sikh religion has taught me.

Every day, Sikhs pray for world peace. The last sentence of Sikh daily prayer is, "Oh God, shower your blessings on everybody — irrespective of their religion, color, caste or creed." With that in mind, I asked the Sikh Temple management committee to honor the Frost family with the highest honor of Sikh religion, the Siropa. The committee was receptive and sponsored their trip to Sacramento over the weekend of December 9th and honored them.

I remember Tom Frost's words at the temple, "Gurpreet, I am saddened by what the Sikhs have gone through. I have come to your temple for Lisa. I know she is still around and is happy that I am doing this. I am on a mission to unite America. Please pray that I will be successful."

How courageous this gentleman is. If I have to find an American hero, I don't have to go far. He stood in front of me!

- Gurpreet Singh



Gurpreet Singh tells a story of compassion and heroism of a 9/11 victim's family.

Zoo Docent Educates Others about Wildlife, Environment

In her cozy office cubicle in San Luis Obispo, Caltrans District 6 Environmental Planner Anne Metcalf coordinates and writes lengthy environmental documents that explain the effects of potential highway projects on human, plant and wild inhabitants of the area surrounding each proposed project.

But on weekends, Metcalf takes her interest in wild animals and their habitats one step further by volunteering as a docent at the Charles Paddock Zoo in nearby Atascadero and speaking to the public about wildlife and habitat preservation.

"I try to go to the zoo once or twice a month on the weekend to help with events, birthday parties, and animal handling. I mostly do animal handling because there aren't many handlers, and it is the most rewarding activity for me. I like it because I get to work with the animals and the public. I also help with special events, school presentations and tours. I didn't volunteer as many hours as I would have liked last year, but managed to do a bit over 70. I guess that's about 6 hours a month," says Metcalf, who has worked for Caltrans since January 2001. She began her association with the zoo about the same time she started work at Caltrans.

"I started the docent training program at the end of January 2001. The class ran for a couple months, and I graduated as an official docent in March," she says. "I had previously worked at the Sacramento Zoo in its education department, and I really wanted to get back into

environmental education. I had gone through the docent program at the Sac Zoo as part of my job, so I knew I would be well suited for being a docent at the Charles Paddock Zoo."



Environmental Planner Anne Metcalf and herpetological pal.

At the Sacramento Zoo, Metcalf cared for the animals — feeding, cleaning, exercising — and did public outreach on the zoo grounds and presentations at schools, environmental fairs, etc. "I missed the interaction I had with the animals," she says. "And this is one thing that prompted me to volunteer at the Charles Paddock Zoo. I work mostly with snakes now, but am going to get trained on more animals in the future."

For Metcalf, her volunteer work fits nicely with her interests in the environment and public education.

"I like public interaction," Metcalf says. "Nothing satisfies me more when I bring an animal out than to see a child's face light up or a parent's interest at some random fact I

have. I like to reach out to such a diverse group, hopefully to influence them to conserve wildlife and the environment. By

inspiring people to appreciate animals, I feel there is a greater chance they might choose actions that help the environment, such as recycling, buying organic food, being responsible with chemicals and pesticides, and supporting environmental protection legislation. If everyone does even a little bit, we have a better chance of saving some of the wonders on this earth before they are gone."

- Jane Sellers, District 6 Research Writer

Spreading Optimism at Christmas

Thanks to Fred Cummings and other staff members from the Headquarters Division of Procurement and Contracts who are members of the Evening Optimist Club of Sacramento, many of the capital's homeless and disadvantaged children each year receive some of the holiday cheer that the rest of us take for granted.

"These children didn't create the environment they live in, but they most certainly are victims of it," Cummings says. "Our strong belief that every child deserves to enjoy a Christmas filled with love, joy and caring is the driving force behind all we do."

Cummings and his friends work closely these days with the Mustard Seed School for Homeless Children to provide a "Christmas in June," as well as a more traditional Christmas party in December for up to 40 children who range in age from three to 15 years old.

"At the December Christmas party we provide the children with an all-you-can-eat homemade meal, including beverages and various desserts," Cummings says. "We also provide clothing, including warm jackets, sweat outfits, undergarments, and other items to get them through Sacramento's cold, wet winters."

The Optimists give each child a backpack, walkman-type radio, toys and Christmas stockings filled with goodies. After the gifts are handed out, kids and adults alike get together to sing Christmas carols and talk with Santa Claus.

"The Optimists also provide Christmas gifts for other children who need a little love and Christmas cheer,"

Cummings says. "During the past two years we've added one new group each year to our Christmas Wish List. For the year 2001, under the leadership of American Legion Post 61, we added a Christmas party for the children of the Sacramento Food Bank."

"We search continuously for organizations and individuals that share our concern for children in need. We'd love to hear from anyone who would like to join us in this effort to provide holiday cheer for these children," Cummings says.



Fred Cummings and other Caltrans staffers bring happiness to needy kids at Christmas.



The Optimists receive help from American Legion Post 61, District 6 American Legion Baseball, the Sacramento Metropolitan Officials Association, Western Dental Association, Mother's Cake & Cookie Company and various private donors.

Most supporters provide monetary donations, which are used to purchase the gifts for the children. Anyone wishing to donate should contact Fred Cummings at (916) 227-6053 during the day or (916) 362-9979 in the evening.

-Gene Berthelsen

Dancing to Preserve a Culture

Trudy Robles, an Associate Administrator who has worked for Caltrans for three years, uses her flair for dance to preserve native Azteca culture both in California and Mexico.

approximately 6000 people who come to the town during the three days. This is Ms. Robles' fifth trip to participate in the festival.

Xihuacoatl has been in existence, performing traditional Aztec dances, for 10 years. It consists of children and adult dancers who range in age from three to 50 years old.

Six members of Xihuacoatl (Women Serpent), which can be seen at the annual Sacramento Festival de La Familia and at several City of Roseville festivities, are Caltrans employees. In addition to Trudy, they include Olivia Fonseca, Karen Governor, Rene Aguilera, Martha Chavez, all of the Civil Rights office, and Desiree Rojas, from the Division of Purchasing and Contracts.

Xihuacoatl, whose mission is to preserve Azteca traditions and teach them to the youth and community, also performs at public schools. "Xihuacoatl's goals are to involve youth in the arts, educate the Sacramento community on the Azteca culture and provide a structured environment to prevent drug use, violence and hopelessness," Trudy Robles says.

"We meet our goals through dance performances, educational presentations, weekly dance workshops and monthly art workshops. We also participate in Azteca ceremonial celebrations in California and Mexico City."

For more information on ceremonies or public presentations, contact Irene Adame, Group Director at 447-2087.

-Olivia Fonseca



Trudy Robles and Xihuacoatl keep Azteca culture alive at the Festival of the Sun.



In January, Trudy traveled to Axochiapan Morelos, Mexico, a rural town about 150 km southeast of Mexico City, to participate in a three day, nonstop dance festival, along with 10 members of Xihuacoatl (pronounced "see wah kol a"), a Sacramento Azteca dance group. The festival is sponsored by Grupo Quinto Sol, or Fifth Sun, dedicated to preserving Azteca culture in Mexico.

The event, which takes place at the Primavera, or Spring, festival in Mexico, January 23-25, consists primarily of traditional dances and some singing. Other events include traditional folklorico dances, children's singing, musical groups, plays, a soccer tournament and a carnival. Food and retail vendors set up booths to serve the

The Majestic Dan Wing

Andy Worhol once opined that, sooner or later, everyone gets 15 minutes of fame. Dan Wing, a Range D Transportation Engineer in District 1, still has about 14 minutes and 55 seconds to go, but at least he got a start when a movie company showed up a few months ago in Ferndale to film "The Majestic."

Wing and his wife, Natasha, answered an ad in the Eureka Times-Standard for extras for the movie, which has been in theaters throughout the US over the past several weeks.



Dan Wing rubbed shoulders with show-biz heavyweights in "The Majestic."

"We thought it would be fun," Wing says.

"We went down and

had our pictures taken and filled out our vital statistics, then went home and waited." Natasha got the call first and worked on the picture for several days before Dan did. "I sat and stewed" he says, but eventually he got the call too.

"It was fantastic," Wing says. "It was the experience of a lifetime, and I'd do it again in a heartbeat. It was so interesting to see how different things were from the way Caltrans does things. I see now why movies cost so much. People were standing around for hours, with the clock running, and were paid as long as they were there."

"Actually, I was just one step above a prop," Wing says. "Part of the scenery." But with the movie in theaters, Wing is often surprised when friends and relatives tell him, "Hey, I saw you in that movie."

"There's kind of a caste system on the set," Wing says. There were two separate commissaries, one for the principals and one for the extras. "On one occasion we were invited to the better of the two and it was great, a top quality Mexican food spread with just about anything you wanted. Mostly, though, we got standard fare."

The caste system also extended to mingling with the principals. "We were instructed not to approach them. If they talked to us, we could reply, but we were told not to initiate a conversation or to lengthen it."

Wing has seen the movie and thought it was "...pretty good. I didn't know how it would turn out," he says. "But it's crafted well, if a bit predictable. I made it past the cutting-room floor, into two scenes," he says. Wife Natasha, on the other hand, who remained on the set for six weeks, is in a number of scenes. "You can distinctly see her," he says. "Right over Jim Carrey's shoulder."

Wing, a 14-year Caltrans employee, had no previous acting experience and while the acting bug has bitten him a bit, it's not enough to make him quit his day job. "But it was a lot of fun," he says.

The film stars Jim Carrey in a role that wouldn't ordinarily be associated with the rubber-faced actor. "The Majestic" is set in 1951 at the time of the McCarthy hearings. Carrey's screen-writing character is singled out, forcing him to move out of Hollywood and relocate to Lawson, California. There he assumes the identity of a former World War II soldier, the son of a theatre owner.

Caltrans got into the act when traffic signs and the center line down Ferndale's Main Street (State Route 211) had to be changed to reflect 1950s standards. Caltrans issued an encroachment permit to allow the filmmaker to give Main Street a solid white line.

- Gene Berthelsen

Editor's Notebook

SNOW

On January 28th of this year, it snowed in Sacramento, the first time since 1976. Guess Mother Nature couldn't wait for the next Centennial.

At our office window, several of our colleagues joined us to gape at the fluffy, quarter-sized flakes settling gently down out of the sky onto the Capitol lawn.

The snowfall didn't last long enough to lay down a blanket for the school kids visiting the Capitol to cavort in, but in Sacramento's outlying precincts there was an inch or two. It lined the bed of Don Roberts' pickup with enough snow so he could bop us with a snowball as we skidded by on the way to lunch.

Ah, boys will be boys.

It's nice to look at snow, at least out the window. Nice to ski on, sled on, sleigh on, and even to have a snowball fight in. Of course, when you're done skiing, sledding, sleighing or snowballing, it's nice to go inside and have a nice hot cup of cocoa.

The folks who keep our roads open through some of the foulest conditions this side of the North Pole have to finish the shift before they get the cocoa, but they do get it, in cafeterias like the one at Kingvale, the kind of place where big people eat big food at big tables.

For three bucks, a Caltrans employee can get the following lunch: a chicken-fried steak and mashed potatoes slathered with gravy, a side dish of corn, a bowl of cream of broccoli soup, a salad with whatever dressing you like, a roll with

butter, a choice of banana cream pie or cake and as much steaming-hot coffee as you need to stay awake.

Jan Seltzer, who ladles these victuals out to the snow-fighters, doesn't feel entirely comfortable if you just have just one helping, either. She bustles around the kitchen at a hot clip, so it's hard to get her to stop and talk. And when you do, she keeps an eye

on the chow line, making sure "the boys" are getting enough to eat, as if it were a personal affront if some skinny guy were allowed to walk out the door.

Call it pride in her work.

Keep in mind, that's only one of the five meals a day served at Kingvale. That much food, probably 900 calories per meal, is enough to put a sedentary editor on a downhill skid toward Weight Watchers, but the workers who keep the roads open for skiers, gamblers, truck drivers and others apparently burn it off.

There are times, Ms. Seltzer says, it might snow five feet in three days. The roads come first, so the yard gets snowed in and the cooks have to stay right there for several days, shoving food into the open jaws of all those hard-working maintenance workers.

And that seems to suit Jan Seltzer just fine.



Jan Seltzer

