Letter from the Director

The Department is blessed with many outstanding employees. We have just said Hal and Farnold to one of the most illustrious employees of our illustrious history.

Jim Roberts is retiring.

Jim’s and his distinguished career are emblematic of the staff of this organization, one that I am proud to have become a part of. His exhibits, in large measure, the qualities all of us aspire to. He is honest, conscientious, loyal and a leader in his field. And, for fifty years, he has worked his tail off.

Jim’s association with the Department began when he joined us as an engineering aide in 1951 while still a student at the University of California. He has held a number of engineering, management and administrative positions, including Chief Bridge Engineer for the State of California, Chief Deputy Director of Caltrans, Director of the Caltrans Engineering Service Center and Project Director for the Sacramento Light Rail Project.

In his nearly 15 years as the state’s Chief Bridge Engineer, Jim spearheaded California’s emergence as the world leader in the science of bridge earthquake engineering.

Jim’s finest hour came when he directed the reconstruction of structures damaged in the 1989 Loma Prieta and 1994 Northridge earthquakes and California’s $4.5 billion bridge seismic strengthening program. Not content merely to put the system back in place, he initiated the most extensive seismic research program in the world.

For his efforts, Jim was named to the National Academy of Engineering in 1996, the only Caltrans engineer to be so honored in its more than 100 years. His many honors include achieving first place, American Institute of Steel Construction National Steel Bridge Award Competition, 1972 and 1978.

He was named Engineer of the Year in 1979 by the Engineering Council of Sacramento Valley and received the Alfred E. Johnson award for Engineering Management from the American Association of State Highway and Transportation Officials in October 1991. But this summer, he was honored with the John A. Roebling Medal for Lifetime Achievement at the International Bridge Conference. He has received so many other honors and awards that his wall will not hold them all.

In demand worldwide as a structural expert, Jim will continue to advise transportation agencies from Washington D.C. to South Africa on structural matters, and as he does so, he will continue to carry the message of our Department’s excellence.

On behalf of all of us, I thank him for his tremendous record of service and wish him all the best.

Jeff Morales
Passage of the Transportation Efficiency Act of the 21st Century, Governor Davis’s $8.6 billion traffic relief plan, further gas tax growth, and changes in other funding sources, mean that the California Department of Transportation and local agencies will spend more than $9 billion in the coming year.

Caltrans will seek review approval from the Federal Highway Administration (FHWA) on more than 70 major environmental documents and many more technical reports in the next three years, an increase annually of more than 75 per cent over recent years. In addition, about 650 local agencies are developing environmental documents and technical studies that FHWA must forward to various state and federal resource and regulatory agencies for review and approval.

Today, Caltrans employs about 760 environmental planners, of whom about 270 prepare documents, 100 perform technical cultural studies, and 120 perform biological surveys and develop technical reports. All of the work completed on major projects by these staff and by local agencies is funnelled through FHWA for coordination with resource and regulatory agencies.

While Caltrans staffing has grown to meet its escalating workload, FHWA staffing has remained essentially unchanged in recent years. Given the number of documents and technical reports needing review, it is inevitable that FHWA would have difficulty performing consistent timely reviews and approvals. If Caltrans and the local agencies are to accomplish their very ambitious programs, they will need to work with FHWA to streamline compliance processes without compromising quality.

The Federal Highway Administration must deal with the workload produced by Caltrans’ 760 environmental planners and 650 local agencies on billions of dollars worth of projects.
With this in mind, Caltrans Director Jeff Morales and Federal Transportation Secretary Norman Mineta have begun discussing actions to address the increased workload. These would affect state projects initially; then, as each is refined, it would apply to local projects as well. The department has asked FHWA to work together to:

- Define and commit to deadlines to expedite document review.
- Expand the Caltrans role as an agent of FHWA in dealing with federal resource and regulatory agencies.
- Expand Caltrans authority to approve minor projects, with appropriate monitoring by FHWA.
- Maintain a system to track movement of work products between Caltrans, FHWA and regulatory agencies.

In addition, Caltrans is taking its own actions to:

- Establish a document quality assurance program.
- Standardize document and technical study formats.
- Increase internal legal review of documents and augment legal staff for consultation on document development.
- Develop a tracking system, with mutual access and input by Caltrans and FHWA, to track movement of key work products.

**ESTABLISH TIMELINES**

The Federal Council on Environmental Quality recently undertook to reduce paperwork and delays and produce better decisions related to the National Environmental Policy Act. The principal strategy that emerged from the effort was to define schedules for review or other actions on a state-by-state, region-wide or project-specific basis. The department has suggested reasonable FHWA review and approval timetables that range from three days for a minor project to 60 days for the approval of a Final Environmental Impact Statement.

Until now, no mutually agreed-on system has existed for tracking environmental products and ensuring that they are developed within an agreed-on timeline. The department has requested that such a system be put in place.

**EXPAND THE DEPARTMENT’S ROLE AS AN AGENT OF FHWA**

Caltrans sends virtually all materials and requests destined for federal regulatory agencies through FHWA, which then forwards them for formal compliance approval. Issue related to Section 106 of the National Historic Preservation Act and Section 7 of the Endangered Species Act can become particularly cumbersome. FHWA reviews and transmittals may take as little as two weeks or more than six months. Once the material reaches the regulatory agency, regulatory deadlines may apply, but FHWA is currently subject to no such deadlines.

The department proposes to work directly with the regulatory agencies for many aspects of Sections 7 and 106. First, materials would move more quickly to the regulatory agencies, and second, redundant review by FHWA staff would be eliminated. Compliance with the National Historic Preservation Act and the Endangered Species Act would be handled by master agreements between the department and the FHWA.

**STREAMLINE NATIONAL HISTORIC PRESERVATION ACT COMPLIANCE**

The National Historic Preservation Act allows federal agencies to use the services of states through programmatic or master agreements, to identify and evaluate historic resources, analyze effects, mitigate impacts and involve the public. FHWA has agreed, as it has with other states, to allow Caltrans to provide similar services. The department met with FHWA specialists in May to discuss quality control, legally sound decisions and proper scrutiny of local agency and consultant reports. The department hopes to sign an agreement by the end of this year.

**Streamlining Environmental Compliance**

The California Department of Transportation and the Federal Highway Administration are working together to streamline compliance procedures. The measures are designed to speed project development while minimizing regulatory barriers. The proposed actions would:

- Define review deadlines and commit to them.
- Expand Caltrans’ role in coordinating and negotiating directly with federal resource and regulatory agencies.
- Increase the department’s discretion in approving minor projects, with appropriate monitoring by the Federal Highway Administration.
- Track the movement of documents between Caltrans, FHWA and regulatory agencies.
- Establish a departmental quality assurance program with elements of peer, technical specialist and legal review; technical editing; document conciseness and document production improvements.
- Increase internal legal reviews and augment legal consultation during project and document development.
STREAMLINE ENDANGERED SPECIES ACT

COMPLIANCE

Caltrans is proposing three measures to comply more effectively with the federal Endangered Species Act.

First, the department is asking that if allowed to negotiate with permitting agencies on how to deal with an endangered species that may be nearby a project, it will only be affected adversely. The Endangered Species Act allows states, after written notice, to consult informally with permitting agencies or prepare a biological assessment.

Second, Caltrans is asking FHWA to conduct, before studies begin, an scope and content of a biological assessment where an endangered species may be adversely affected or “state” is expected. Review should take place within a specified schedule. Consistency with the process would provide the basis for subsequent reviews.

Third, to provide better documentation for FHWA, Caltrans is developing a quality control effort. Senior department biologists and FHWA specialists will develop standards for document standards and expect to deliver them in four to six months.

EXPAND THE DEPARTMENT’S

PROGRAMMATIC CATEGORICAL

EXCLUSION AUTHORITY

In September 1996, FHWA’s California Division Administrator agreed to allow Caltrans to approve Programmatic Categorical Exclusions for federally-funded projects that have minimal impact. But FHWA engineers annually still approve more than 1000 department actions that do not meet the conditions of the agreement. Collectively, these take considerable time that could be spent addressing more complex issues.

Using agreements with other states as models, the department proposed revising the master agreement. It would allow Caltrans to approve projects that do not have significant impacts, are not controversial, involve only minor amounts of right-of-way impact fewer than 80.5 acres of wetlands, and meet several other criteria.

DEVELOP A TRANSMITTAL

TRACKING SYSTEM

No formal system currently exists to track work products between Caltrans, FHWA and regulatory agencies. The large and growing workload that Caltrans sends to FHWA for action exceeds the capacity of the internal system currently in place. As a result, the department must repeatedly contact FHWA to determine the status of its projects.

FHWA and Caltrans are developing a computer system to track documents and consultation requests. The system will improve delivery through efficient transmittal of work products. The tracking system should:

- Be low-cost and simple and without major software or hardware purchases or upgrades.
- Allow data to be entered easily.
- Allow tracking of specific items for specific projects.
- Allow prioritization of items, at the discretion of the district.

In addition to improving delivery, this system would provide valuable information on resource and time requirements, which, in turn, would help in scoping and in setting realistic schedules. It should identify bottlenecks quickly so action can be taken to keep documents and approvals on track.

ESTABLISH A QUALITY ASSURANCE

PROGRAM

Caltrans has committed to submitting documents to FHWA only after ensuring that they are ready for approval. Consistent, high-quality documents will reduce FHWA review time and increase its confidence in them.

REPORTING AND EVALUATION

MECHANISMS

Caltrans is proposing several changes in reporting and evaluative mechanisms. The department is committed to:

- Additional positions in the Caltrans Legal Division to develop and review legal documents.
- Periodic meetings with FHWA to fine-tune quality assurance approaches and practices.
- Closeout meetings to assess successes and needs for improvement.

One central element of the project development process will not change. That is continued, active participation by FHWA engineers in project development teams. Caltrans and FHWA have maintained a fruitful relationship since the start of the Intermodal Program, which initiated federal funding of projects in the 1990s. The changes outlined above are meant to deepen that relationship and make the participation of the federal and state governments more productive and rewarding.
TRAFFIC CONGESTION RELIEF PROGRAM

SUMMARY OF PROGRESS:

Approvals and allocations to the Governor’s Traffic Congestion Relief Program so far have exceeded expectations. To date, nearly two-thirds of the 141 projects (97 projects) have received project approval, either for all project phases or for early phases only.

The projects are, for the most part, major ones that require extensive environmental approval processes, complex design and right of way acquisition before construction begins. The applications approved so far are for initial, lower cost phases as the program provides funding, in many cases, to “jump start” the projects and allow lead agencies to build consensus and provide a basis for additional funding. When applications for higher-cost right of way and construction phases are received, after completion of environmental and design phases, expenditures will accelerate.

Overall, almost two-thirds of the originally scheduled projects, totaling just over $900 million, have received application approval. By July 2002, the department anticipates that 123 projects worth $1.46 billion will have been approved, with more than $1.8 billion allocated.

About $1.8 billion worth of projects are expected to begin construction by the end of this calendar year, with an initial commitment of about $575 million. Projects include:
- Improvements on State Route 50 at Sunrise Boulevard in Sacramento County.
- Improvements to the interchange of Routes 58 and 87 in Santa Clara County.
- Soundwalls related to the Route 12/101 project in Orange County.
- Improvements to the interchange of Route 5 and 80/806 in San Diego County.
- The first of several phases to improve the interchange of Routes 94 and 125 in San Diego County.
- Improvements related to the Capistrano corridor in San Diego County.
- Ocean Boulevard Light Rail in San Francisco.
- Santa Monica Boulevard in West Hollywood.
- Signage and signal improvements in two Mountain Linen.
- Improvements in the Catalina Peninsular rail corridor.
- Phase 1 of the Balboa Park BART/SF Muni Metro station.

- Remodeling the intersection of Olympic Boulevard and Motuo and Porter Streets in Los Angeles.
- Improvements on State Route 6 in Pittsburg in Contra Costa County.

In addition to construction projects, the Governor’s program has allocated funding for studies for the Baylink ferry in Vallejo, hydrogen fuel cell buses and a hairdressing facility for AC Transit in Alameda County, buses for Santa Cruz Metropolitan Transit District and the North Coast Transit District in San Diego County, and a locomotive for the Contra Costa rail Amtrak among the studies being financed by the program are:
- Route 292—1600-900 Cross Connector near Fremont in Santa Clara County.
- San Francisco Bay Southward Crossing.
- BART/SF Muni Metro Extension.
- Bay Area Rail Connectivity Studies for the Route 4 corridor in Contra Costa County and the Route 190 corridor in Alameda County.
- Route 710 Gateway Corridor Study in Los Angeles County.

- Route 101 Corridor Study in Ventura and Los Angeles counties.
- Route 180 environmental studies in Fresno County.

Funding of $41.5 million has been allocated to five clean air programs—SECAZ, near Los Angeles, and the San Joaquin Valley Environmental Clean Air Attainment Program. Funding has been provided to the North Coast Railroad Authority to initiate work to remove and upgrade the railroad. Funding includes $350,000 to define the scope, cost and schedule for the projects necessary to reopen and upgrade to Class 2 and 3 standards; $100,000 for preliminary engineering to determine work required to comply with the Environmental Consent Decree; $10 million to repay debits and $5.5 million for a fund loan repayment. Funding has been allocated to initiate project development work on the following key projects:
- $8.4 million for BART/SF Muni Metro Extension.
- $15 million for Route 24—Caldecott Tunnel, in Alameda and Contra Costa Counties.
- $19.5 million for the Los Angeles Rapid Transit Extension.
- $4.7 million for Los Angeles Mid-City BRT Rapid Transit System.
- $12.3 million for Los Angeles—San Fernando Valley Transit Extension.
- $15 million for Route 416—northbound HOV through Sepulveda Pass.
- $4 million for Route 101/405—interchange improvements in LA County.
- $955,000 for Route 57—southbound truck driving lanes in San Bernardino County.
- $25 million for Route 2, a new expressway in San Diego County.
- $15.8 million for Route 56, a new freeway in San Diego County.
- $1.6 million for Route 99 at Shaw Avenue in Fresno.
- $1.9 million for Route 99 at Seventh Street in Kern County.

Cumulative funds allocated, by month:
- $357,000
- $484,271
- $582,126
- $623,281
- $678,531
- $761,280
- $941,276
- $1,725,270
- $2,225,015
- $2,355,013
- $2,369,028

Cumulative projects completed, by month:
- Sep ’00: 28
- Nov ’00: 37
- Dec ’00: 48
- Jan ’01: 54
- Feb ’01: 61
- Mar ’01: 74
- Apr ’01: 87
- May ’01: 109
- Jun ’01: 122
- Jul ’01: 127
- Aug ’01: 129
- Oct ’01: 132
By August 13th, with smoke from the “Gap” forest fire rolling across Interstate 80 in the high Sierra in Nevada County, Dale Tombrink and his District 3 Maintenance Team in Placerville, Pollock, Lake Tahoe, Kingvale, Whitemoore and Auburn have already been working on getting ready for the winter snow season.

"Even as we wrapped up last year's snow season," Tombrink, a 44-year maintenance veteran says, "we were gearing up for the new one. We knew it was coming and were preparing the vehicles, plows, and sanders in order to ensure that everything was ready for the upcoming season." He went on to explain that the snowplows and sanders that are used to clear the roads are constantly being maintained and replaced in order to ensure that they are in top condition for the winter months.

There is a lot of preparation that goes into getting ready for the snow season. The maintenance teams work around the clock to ensure that the roads are clear and safe for drivers. They must also be prepared to respond quickly to any emergencies that may arise. This includes having extra supplies on hand and being able to quickly mobilize their teams when needed.

As the winter season approaches, the maintenance teams will continue to work hard to keep the roads clear and safe for drivers. They are ready to face any challenges that come with the snow season and will work tirelessly to ensure that the roads are in the best possible condition.

There is no one more prepared for the winter season than the maintenance teams. They are dedicated to their work and are always ready to face whatever challenges come their way. With their hard work and dedication, they are ensuring that the roads are safe and clear for all drivers this winter.
Maintenance staff also have to look to the condition of their system. Temperature extremes, precipitation and washed-out roads create a variety of obstacles that provide traction for vehicles. Sand and salt are applied as needed. The materials must be swept from the driveways and cleaned from the doors.

These activities generally start during the summer and early fall. "If we're lucky, we're ahead of it by the time the first snow flies," says Tombeek.

**As snow fighting operations have grown, they have more and more become a battle for runoff purity.**

As fall approaches, the high mountain maintenance territories check their contracts for materials, go over their rosters of permanent intermittent operators who are brought in during storms, assure there are enough tire chains (a snow-covered snowplow will go through a set of chains every two to three days), and check expertise in snow removal and safety.

The crews in dormitories at Lake Tahoe, Whitemore and Kingsville have to make sure supplies are available to provide food for the more than 50,000 nights to be served. The snowplows of the Department of Transportation and the snow removal crews are constantly in demand.

In 1947, maintenance of 25 employees operated six skis and nine push plows to keep 12 miles of two-lane highway cleared between the Sierra and the Sierra. It was not uncommon to keep only one lane open and to escort the travelers through. Today, Caltrans spends about $300,000 per year to keep its roads open. The equipment fleet includes 18 snow plows, 27 snow blowers, 71 graders and 13 snow blowers.

And even as the operation has grown and evolved, fighting the snow has become more and more a battle for runoff purity, especially amid the pristine ecology of Lake Tahoe. Caltrans has minimized its use of salt even as a foot-size of slurry, oil and water that runs off the roads.

The Caltrans maintenance station at Meyers, just south of State Route 50 in the Sierra Nevada, is a constant battle to keep driveways clear and salt out of the lake. Today, Caltrans uses mostly brine, in combination with abrasives, that is harder than the sand used elsewhere and contains a minimum amount of phosphates. It does not adhere to snow or ice as easily as other sands. And dirt is how the majority of pollution, including phosphates that promote algae growth, gets on the surface of Lake Tahoe.

In winter, Caltrans removes the snow from the roadways at Lake Tahoe as quickly as possible and truck it to a snow storage area near South Lake Tahoe. The area, a 60-acre site that is entirely contained by barns and a sand fence, has been graded to allow slow surface movement of the melting snow into two successions: A dirt mound to contain the salt and one to the north. After the snow is off the roads, Caltrans sweepers are in operation 24 hours a day, seven days a week, sweeping the salt and abrasives that the winter operations did not catch. Caltrans also vacuums material from the drop inlet and out from the roads.

Today, in late August, the pile of last year's snow at the storage area is still melting.

At Kingsville, Fran Sandwith is renting a virtual reality winter wonderland. She's the only one there. It's cold, but she's happy. She says, "It's my therapy."

"I love it," she says. "It's like being in a bubble with no distractions."

She's been doing this for years, and she says it's helped her deal with stress.

**Pete Azevedo, Brian Carlson and Norm Butts, in South Lake Tahoe, keep the winter traffic moving around the lake.**

It's 70 degrees today, but it's not too hot. Pete Azevedo, Brian Carlson and Norm Butts at South Lake Tahoe and Dale Bower, Jim Edison and Jerry Sand at Kingsville...as well as hundreds of other snowplow operators...are at work. They come to Kartel...the only place where you can rent a virtual reality winter wonderland.
On 15.3 km of hot highway on this July day in Colusa County, between yellow-green rice paddies and geometric rows of tomato plants, Joe Peterson and Caltrans District 3 are exploring a roadway rehabilitation technique that has the promise of cutting cost, increasing motorist safety and adding years of pavement life.

The rehab method is known as cold-foam, in-place recycling, a technique that has been extensively used in resource-hungry countries around the world for decades, but not in the United States, where energy and materials have been abundant.

State Route 20, which crisscrosses California’s Sacramento Valley, has been a problematic road for a number of years. The original route of General John C. Fremont between the Yolo Valley and the California coast, the highway more or less evolved from an Indian trail, rather than as an engineered highway.

Caltrans has maintained the highway for several decades by digging out problem spots or overlaying the pavement with varying thicknesses of asphalt that range from 25 to 75 mm. Such treatments generally provide two to five years of service.

“Pavement generally fails from the bottom up,” says Joe Peterson, Materials Engineer for Caltrans District 3. “And as long as we were not rebuilding the pavement down to the base, the same problems tended to occur over and over.”

“Given the length of Route 20,” says Peterson, “what that meant was a kind of continuous cycling of rehab and repair projects that we’d never finish. We’d get to the end of the road and have to start over.”

Frustrated with this state of affairs, Peterson looked for other alternatives. In 1998 he attended a presentation on cold-foam recycling by David Collings of South Africa. “I was attracted by the fact that this technique recycled the pavement all the way down to the base, removing pavement failures and trouble spots at the root of origin.”

Peterson then began a two-year campaign to try the technique at Colusa and eventually was granted permission to use it on three pilot projects in North Region. The Route 26 project is the first. Two additional ones, another on Route 26 and one on Route 89, will be completed in the next three years.
Studies of cold-foam asphalt recycling elsewhere indicate that pavement lifetime is about doubled, when compared to overlays.

And today, two teams of equipment operated by Baldwin Constructors and Western Pavement Stabilization are setting up and spitting out State Route 26 at a rate of eight meters a minute, or up to 1.1 km a day.

The pavement is first drilled with the equivalent of 10 mm of Portland cement or 50 mm of Class II aggregate base. Then a pair of three-vehicle combinations move in, each consisting of a tanker loaded with binder at 188°C, a pavement recycler and a second tanker track with water at ambient temperature. As the train moves forward, the recycler injects the pavement and rotates it into a drum. The binder and water are injected into the drum, mixed with the recycled pavement, then deposited onto the base behind the recycler. The finished product consists of 2.5 percent new AK-1096 binder, 2.0 percent water, existing asphalt concrete and 25 to 75 mm of the existing base.

"By injecting the binder and cold water together, we get the asphalt to foam much like a cup of cappuccino. This foam coats the four-inch recycled material, is remedied by the drum and, when compacted, forms a super-stabilized base," Peterson says. The base has many of the characteristics of asphalt concrete. Two vibrating compactors follow the train and generally make four passes, "walking the roller" over the material to achieve 98 to 100-plus percent relative compaction. The material is then sprayed with water, roughed by "eyeball," then finished with a laser-controlled motor grader. The material is sprayed with water again, then a vibrating steel drum roller and a pneumatic roller make the surface ready for traffic. A wearing course of 25 mm of open-graded asphalt concrete is applied later. None of the equipment in the train is proprietary.

The entire operation is done in segments of 300 meters each. It essentially rebuilds the roadway from the base to the crown in a matter of minutes, removing and recycling as much as 250 mm of pavement, the buildup from any number of previous overlays. The 300 m segments allow traffic control to be picked up and moved at the same pace as the train, minimizing the amount of inconvenience to the public.

When finished throughout the entire 15.3 km, the roadway will now be an engineered roadway, Joe Peterson chose the relatively long-length project in order to test the effectiveness of the recycling technique over a number of base and structural section conditions.

Studies of cold-foam asphalt recycling elsewhere indicate that pavement lifetime is about doubled when compared to overlays. In addition, much of the existing pavement saves both energy and material costs, and the reduced amount of time spent working on the roadway results in greater safety both to motorists and workers. Other advantages of the technique include relatively low levels of noise and dust, and short duration of disruptive work at any particular location.

Peterson has high hopes for cold-foam asphalt recycling. "We could get as much as nine to 12 years out of this pavement for the equivalent cost of a 3-year strategy. And that would be a tremendous savings in cost, worker exposure, and delay to the traveling public," he says.
Caltrans Flexes its Power

By Stephen C. Frey
Coordinator, Caltrans Energy Conservation Program

Managing a far-flung transportation system has always kept Caltrans conscious of the need for skillful management of energy usage. But when rolling blackouts loomed as a threat earlier this year, Governor Gray Davis asked the department to take extraordinary measures.

And it has done so. On average, in keeping with the objectives of the Fix Your Power program, Caltrans employees have reduced electricity consumption by approximately 21 percent between January and July 2001, as compared to the same time in 2000, even accounting for variable weather conditions.

Added to the conservation efforts at Caltrans facilities, teams throughout the state continue to implement the award-winning light-emitting diode (LED) traffic signal upgrade program. When completed, Caltrans’ statewide 24-hour-a-day traffic signal grid will be reduced from 10,1 megawatts to about 0.8 megawatt, a reduction in power consumption of more than 92 percent.

At Caltrans facilities, staffs are working with the departments of Finance and General Services to implement a statewide energy and load management network. Activities include:

- Energy audits of Caltrans-owned facilities.
- Development/implementation of cost-effective conservation measures.
- Automation of current "Stage 2 and 3" turn-off activities.
- Installation of real-time utility meters for local and remote energy consumption monitoring.

Energy conservation efforts on computer equipment have also contributed to the success. Turning off the equipment at the end of the day, phasing out non-energy efficient operating systems like Windows NT and using the "sleep mode" feature in Windows or any version of Macintosh OS further reduce energy consumption during non-use periods. "Energy Star" computer equipment, flat screen video displays and replacing desk top computers with portable and desktop stations all are reducing energy consumption by computer.

While it may seem as if everyone suddenly woke up and decided to save energy today, Caltrans and many other state and local agencies have a long history of conservation success. The recent crisis has made it possible to increase the speed of implementation for most conservation projects under development for the last five to 10 years.

Caltrans implemented its first major energy conservation program back in the mid-1970s. One of the department’s largest electrical load groups is its lighting systems on roadways. In the days of cheap electricity, many roadways were fully lit. But even back then, Caltrans took a bold step and rethought its lighting systems.

Safety, along with energy savings, drove the effort. Lighting up points of conflict and using lighting to highlight the warning "heightened driver awareness of changing conditions.

Caltrans removed so many fixtures and poles that the Maintenance and New Construction divisions had a free source of material well into the 1980s. In fact, rumor has it that some districts still have a few of the poles and fixtures available for replacement use. In 1984, department staff estimated that more than 50 percent of the pre-1974 installed and post-1975 project design packages were modified to meet the new standards. The legacy of this project has kept over 30 megawatts of load off the grid. Further energy savings occurred by upgrading incoherent fixtures to more efficient fixtures, as new systems became cost-effective. Today’s medium-voltage lighting systems are a direct result of those efforts.

In the 1980s, Caltrans, like the rest of the state, focused its energy conservation activities on state-owned buildings. The majority of the efforts focused on identifying and implementing low- or no-cost conservation opportunities. In 1993, Caltrans management established the Department’s Resource Conservation Program. All internal conservation programs, including energy, water, recycling and alternative energy technology efforts, were grouped into a single program. Since that date, this program’s staff has assisted all Caltrans units in their efforts to conserve state resources.

By 1996, energy facility audits resulted in two prototype projects involving multiple sites. One project had Caltrans staff implement conservation measures using State Energy Efficiency Bond funds administered by the Public Works Board and General Services. The second involved Caltrans and a private sector energy services contractor, ESCO.

ESCO funded all phases of the audit, design, and implementation phases. Monthly energy savings were shared with the contractor to offset costs. The contractor’s repayment period is 144 months. By 1999, ESCO had completed its work.

In 1994, Caltrans management directed the conservation staff to expand the ESCO prototype to all department-owned facilities. Caltrans worked with General Services and the University of California for California State University to develop a state ESCO program. After state law and statutes were modified, Caltrans leadership had demonstrated how the concept could work.

Just as the department was about to implement its statewide ESCO program, the energy shortages of 2000/2001 interfered. Due to emergency changes in how the state planned to fund energy projects, Caltrans and other agencies were forced to modify their conservation programs.

Again, Caltrans staff found a way to do it better. While most state agencies are doing one building at a time, Caltrans staff has modified its ESCO contract to implement a statewide program. That contract is currently awaiting final approval at General Services and Finance.

Also in the early 1990s, Caltrans Staff in Division 6 started development work on a conservation project that eventually grew into an international industry. LED traffic signal technology. The Caltrans LED program has won awards from the California Energy Commission and the Federal Department of...
Congratulations to Caltrans employees! You contributed to the state’s success in meeting the energy challenge this summer. This active commitment set the example that helped Californians conserve electricity and prevent rolling blackouts.

This year, Caltrans and other state offices significantly cut electricity use from January through the end of August compared to the same period in 2000. For example, in monitoring 37 of the state’s largest office buildings covering nearly 11,000 square feet, the Department of General Services recorded an average 22.4 percent drop in electricity use. Despite hikes in utility rates, the state saved more than $800,000 in cities such as Sacramento, Los Angeles, San Francisco, Oakland, San Diego, Van Nuys and Livermore.

While the state has made extraordinary progress in bringing new power generation online in the face of shortages remaining real, conservation, now and for the long term, will continue to be an important part of the strategy to keep the lights on. Fall and winter months present challenges just as tough as the summer months. As there are increased demands for power across the state for lighting, heating and other priorities, we cannot let our guard down just because the seasons have changed.

Following are some practical cool weather tips from the Flex Your Power website that will help all of us to continue to save power, save money and continue serving the people of California:

- **Use Your Appliances Wisely**
  - Turn off appliances, lights and equipment when not in use.
- **To help prevent electricity outages, do not run large appliances between 5-9 a.m. and 4-7 p.m.**
  - Do your laundry efficiently by using the warm or cold water setting for washing your clothes and always use cold water to rinse clothes.
  - Conserve energy by running your dishwasher only when it is fully loaded, and turn off the dry cycle to allow dishes to air-dry instead.

**Inexpensive Energy Solutions**

- **Choose energy Star products.** Purchase compact fluorescent light bulbs. Use a quart of the energy and last five to 10 times longer than conventional light bulbs.
- **Reduce your hot water temperature.** Set your water heater to “normal” setting at 120 degrees unless the owner’s manual for your dishwasher requires a higher setting.
- **Replace furnace filters once a month.** Dirty filters restrict airflow and increase energy usage. Keep your furnace clean, lubricated and properly adjusted.
- **Install low-flow showerheads.** You’ll be surprised how much this simple change can cut your hot water costs.
- **Wrap your hot water tank with jacket insulation.** If your water is heated by gas, be sure to keep the air intake vent uncovered.

**Eliminate Wasted Energy**

- Turn off lights in unoccupied rooms.
- Unplug electronic devices when not in use.
- Close the damper on your fireplace when you’re not using it.
- Unplug that spare refrigerator in the garage if you don’t need it.
- Set your thermostat to 68 degrees when you’re home and 55 degrees at night, or off.

Check out www.flexyourpower.ca.gov for more information and ideas to save money.

If all 24 construction projects were fully implemented, the department would:

- Reduce daytime and/or nighttime electrical grid loads by about 3.1 megawatts.
- Save about 156 million kilowatt-hours in annual energy consumption.
- Save some maintenance costs for selected projects.
- Pay back project costs through savings in energy and maintenance costs.
- Save a combined amount of $2.27 million in anticipated 10-year net savings from implemented project elements. Savings of an additional $5.5 million over 10 years of operations from project elements are yet to be implemented.

Caltrans has identified a potential 16-year net savings (avoided costs) of about $181 million to apply against a 16-year goal of $35.66 million as established by General Services in response to Executive Order W-83-94.

Caltrans is in the middle of a success story and everyone who has contributed can be proud of it or their efforts. This fits to every employee who turned off lights when leaving a room, turned off equipment at the end of the workday, worked in uncomfortable conditions or turned off unnecessary equipment during power alerts.

Your efforts have paid off.
Every one of the staff of the Caltrans Library and History Center at 1129 N Street in Sacramento has seen “Desk Set,” the fine old classic film that starred Spencer Tracy and Katherine Hepburn. In the film, Tracy has arranged to install a new computer that is thought to be capable of answering any question put to it. Hepburn heads up a staff of reference librarians who have been running down facts quite capably for years. There’s the inevitable conflict, but the story revolves itself when the librarians and the computer realize they need each other.

Laurel Clark, who has served in a number of positions in the Caltrans Library over her 20 years of service and is a bit of an history engineer, has tried much the same part. In fact, her library may be among the most computer-literate spots in all of Caltrans, as library staff can scan a database, Internet sites and look-up systems to run down information requests that range from the routine to the arcane to the impossible.

Computers make the world Clark’s reference system. In fact, as she explains, librarians have been at the forefront of using computers since they were invented.

The Caltrans library is a rich and responsive resource that moves heaven and earth to provide answers to just about any request imaginable for information about transportation and related matters. Last year, library staff answered more than 1000 requests for technical information on everything from the use of magnesium chloride for dust control to the habitat of the monarch butterfly and the lone mammoth.

Clark, who holds a master’s degree in library science, is assisted by a staff of three professional librarians, who hold six additional advanced degrees between them. She is also ably assisted by one Caltrans administrator, a library technical assistant and a student assistant.

Perhaps the most novel request came when an arts group in San Francisco asked Laurel Clark to find out whether it was possible to cut transverse grooves in a highway so that travelers could have their time play “I Left My Heart in San Francisco” as they drove into the city.

The library’s sophisticated computer search capability uses an array of technical data bases, including the Transportation Research Information Service (TRIS), Compendex, engineering data base that contains information about civil and other engineering as well as transportation information, Transport (CD-ROM), a specialized data base containing TRIS and additional transportation information and a number of managerial, environmental and other data bases to run down questions that come from all over the department.

The library, from experience, knows the library’s and its librarians are one of the most service-oriented organizations in Caltrans that regularly fields questions on obscure subjects and returns the answers promptly and with a smile.

Contact the library at (916) 654-6001, email: library@dot.gov.ca or via the department’s intranet at http://www.rse.dot.ca.gov/library/
Transit Oriented Development
A strategy for making transit work better

The tide of new Californians, it seems, never reverses.

Through good times and bad, about a half million new citizens pour across the state’s borders every year. In general, California’s record in making use of urban land compares well with that of other western states, but suburban development is threatening endangered habitat and open space and unique agricultural land.

From the perspective of growth accommodation and better quality of life, Transit Oriented Development is one approach that has the potential to lessen this trend.

Transit-Oriented Development, or TODs, is, along with “new urbanism,” among the hottest subjects in community planning these days. What is a TOD, what makes one work, and what should California officials do? A report recently authored by the Caltrans Division of Mass Transportation, with assistance from the consulting firm of Magnus Linkerhoff, attempts to deal with those questions.

What a TOD is

The more you look into the definition of TODs, the harder it is to get your arms around what they are. The outsider’s notion, that a TOD is a housing development near a rail station, is way too simplistic. The engine that drives the Oakland City Center, for example, is government and private offices. The Willow center in Long Beach contains a strip mall and a large grocery store. The building TOD at 3rd Street in San Francisco contains lots of restaurants and galleries. The city of Hayward, now embarking on developing a TOD, is using redevelopment funds to create a new central business district. And even the most successful TODs combine a multiplicity of uses, many of which may require parking: abundant parking is not always a negative factor.

Essentially, a TOD is an activity center, whether it be residential, commercial or offices, that is near a transit center. TODs vary widely, but usually have some or all of the following:

- Concentration of uses within a distance easily covered in a five-to-ten minute walk from a transit station.
- Pedestrian and transit-friendly site design that creates a safe, walkable environment.
- Orientation of a core commercial area (and the most intense development) around the central transit stop.
- Public spaces and supportive retail uses (dry cleaners, banks, ATMs, day care, etc.) located immediately nearby.
- A mix of uses that allows daytime activities to be accomplished by walking, so that reliance on transit remains convenient.
- Reduction in parking and setbacks requirements.
- Gradual reduction in development intensity from the center to the periphery.
- Varied styles and densities of housing.

By concentrating residential and commercial land uses around a transit stop, transit-oriented developments invite residents and employers to use cars less and transit more. An increase in transit ridership is often cited as the primary benefit of TODs and, in fact, people who live near rail stations are much more likely to commute by transit than those living farther away.

Proponents of TODs argue that development around transit stops is likely to provide regional or community-wide benefits of:

- Increased regional accessibility and mobility.
- Reduced dependence on cars.
- Better coordination of land use and transportation investments.
- Cost-effective use of land near transit stations.
- Creation of additional revenue for transit agencies through joint development agreements or property sales.
- More affordable and greater variety of housing.

Communities benefit from TODs through:

- Station-area development and revitalization.
- Increased property values.
- Interesting communities and gathering places.

The record for significant new development around stations has been spotty, so far, although there is evidence that, as California’s streets and highways get more crowded and transit ridership grows, investment around transit stations is
Picking up. National experience suggests that the success of transit stations in stimulating development and redevelopment depends on secondary factors.

**Producing a TOD Success**

Karen Arons, of Cambridge Systematics, which is developing a TOD internet database for Caltrans, puts it simply. "You need a lot of everything," she says.

The most successful TODs in California have been helped along by urban redevelopment, often with the establishment of government offices, particularly those that offer services to the citizenry. The Oakland City Center, for example, is home to Oakland City Hall and other city offices, a Renaissance California state office building, federal offices, the convention and visitors bureau, and a satellite campus of Hayward State University. And these initial developments have stimulated private offices, hotels and public services.

Very often, a successful TOD is also a successful POD -- a pedestrian-oriented space. Cities wishing to develop a TOD would do well to consider the street scape around the development and do everything they can to make it an agreeable space in which to linger. Wide sidewalks, trees, lighting, textured paving, benches, trash cans that fit the overall aesthetic and plantings all help. But a concentration of stores or other activity centers is crucial.

Most TODs take time, since activities around stations do not change overnight and often do so only after large investments, usually through urban redevelopment. Surrounding land uses that are unattractive or unsafe, or are primarily auto-oriented, tend to inhibit transit-oriented development, as do poorly designed connections to neighborhoods. Numerous, small parcels held by a variety of owners also can create a barrier to station-area development.

TODs require supportive neighborhoods and communities; few successful station-area development projects have occurred where surrounding neighborhoods oppose higher density or residential development. Leadership from regional and local institutions and, often, a political champion, are also helpful.
If these investments are to affect California’s development patterns, the state will have to adopt policies and practices that promote a transit-friendly urban form. Transportation, housing, and other programs, properly designed, can help provide alternatives to automobiles, enhance overall transportation performance and reinforce this significant investment in transit. State policies that are potentially fruitful include:

- Targeting of investments to areas with locally adopted TOD plans.
- Allowing more flexibility in the use of transportation funds for TODs.
- Funding TOD demonstration projects.
- Making it easier to use excess state funds for TODs.
- Looking at ways to help expedite local development approvals for TODs.

Local Planning and Zoning

California’s Transit Villages Act of 1994 encourages cities and counties to prepare transit village development districts with a mix of uses that cluster around transit stations. And although it establishes that transit village plans are eligible for transportation funding, it provides none. Consequently, TOD planning in California has been the exception rather than the rule. Developers still face difficulty in securing land use entitlements to build TODs, even when state and local policies seem to encourage this land use pattern.

The State of California could help overcome obstacles in the development entitlement process by accounting for the benefits of TOD more accurately, and offering incentives, guidance and funding that further TOD-friendly plans and policies by local governments.

For example, local jurisdiction development analyses, which are based on site-specific impacts rather than accounting for community-wide benefits, typically conclude that TODs produce more traffic around transit stops than would be created by lower density development. It is often true that TODs result in more localized traffic, even when accounting for the higher mode share for walking and transit. However, there are significant environmental and social benefits from connecting concentrated activity centers by transit. These benefits, such as reduced growth in automobile travel and associated air pollution and other impacts, are not typically taken into account in individual site-specific project analyses that are required during the local government approval process.

Finance and Implementation

Transit-oriented developments offer an important option for helping to answer California’s need for more affordable housing by providing residents easier access to employment and also to offset payment for better housing with lower transportation costs. The higher densities found in TODs help to lower the expenditures needed to develop housing in the first place.

Despite a strong real estate market outlook for TODs and favorable demographic trends, significant finance and implementation barriers to successful TOD projects exist. The mixed uses of many TOD projects make obtaining development financing more complicated. Affordable housing components typically require seven or more funding sources. In addition, California’s local jurisdictions often lack both the necessary funding to prepare TOD plans, or the ability to provide financial incentives. The state could help overcome finance and other obstacles by:

- Providing financial incentives.
- Encouraging construction of medium- to high-density housing near transit.
- Creating a statewide TOD financing program.
- Helping to make private TOD mortgage instruments more widely available.

Information Dissemination and Research

To assist with project entitlements and lender acceptance, local governments, transit agencies and developers need better information on benefits of TOD for neighborhoods, transportation networks, and the fiscal health of cities. The state could define and fund research on such benefits and make them available. Furthermore, the state could develop strategies to get planning, implementation and benefits information into the hands of key stakeholders quickly and at low cost.
TOD is an Important Element of Oakland’s Downtown Redevelopment

Downtown Oakland is a regional employment center in the Bay Area. But there are a number of areas within the downtown and surrounding it that are economically depressed or underutilized. After the Loma Prieta earthquake many brick buildings were damaged and have since been unused. The Oakland Redevelopment Agency is trying to reuse such properties while adding economic benefits for the city. Redevelopment in the downtown is an effort to revitalize the retail and housing sector.

Mayor Jerry Brown’s "10K" program is another attempt at being residents to the downtown and marketing it as a desirable place. The city hopes this will make it a 24-hour activity area, thereby improving the perception of a safe neighborhood. The Jack London Square project, which is outside the station area, has been one such successful project for the city. The redevelopment agency is the proper agency that can handle redevelopment and revitalization but it faces an uncertain retail market and difficult environmental regulations. A favorable housing market has helped the demand for housing near transit and urban facilities.

The agency has proposed a redevelopment area downtown as one of the project areas. It participates in development by purchasing vacant and underutilized lots, then identifying feasible projects and, in partnership with the developer, financing the project. It also undertakes streetcape improvements and builds parking to accommodate higher traffic.

The city's Environmental Impact Analysis argues for lower parking requirements based on new development concentrated around BART Stations on 12th Street and 19th Street in addition to AC Transit bus services and a proposed downtown bus shelter system. The agency offers attractive financial incentives through redevelopment and historic preservation funds.

Downtown Oakland lies within a redevelopment area where tax increment financing is used to support public/private projects. The redevelopment agency currently is concentrating on building infrastructure and supporting market rate housing and retail development. Zoning requirements are already relaxed and favorable for high-density mixed-use development. The city is working in partnership with developers and investors to work out financing mechanisms and environmental assessments to make projects in the city more attractive.

The Oakland Redevelopment Agency has helped finance or has undertaken the preservation and seismic retrofitting of several office and retail structures in the area. Successful projects include the Flatiron Building and the Plaza building. Similar policies to revitalize retail along Broadway have had limited success. More redevelopment is planned for the Uptown area.

Federal and State buildings in the City Center have attracted people and retail to the downtown as has the City Center project. City Center Plaza and other landscape and pedestrian service improvements have been visibly successful. No new schools are proposed and no site is designated yet for other community amenities, but many mixed use projects are underway and more are being planned. More than 105,000 square feet of office space, 700 residential units and 176 hotel rooms are under construction. About 5,000 more units are under construction and about 2,800 more are being planned.

Oakland's Redevelopment Agency has supplied much of the financial steam behind the revitalization of the city center.

HISTORIC PRESERVATION TAX CREDIT PROCESS.

Many of the buildings that were damaged in the Loma Prieta earthquake require huge investments for reuse. Expensive seismic retrofitting makes such development financially unfeasible. Such buildings are located in Oakland’s downtown and are important historical landmarks. Their reuse will generate revenue for the city and contribute to the downtown appeal as a destination and attraction for cultural and economic activity. Oakland’s Redevelopment Agency is the operating arm for implementing the Historic Preservation program and assessing project feasibility.

The agency uses city general fund and redevelopment funds to finance expensive seismic retrofitting in the redevelopment area. The agency has concentrated on important city landmarks such as the Flatiron Building for reuse as office and retail development. Historic preservation funds are also provided to developers on a case-by-case basis.

Many of the old unreinforced brick buildings have been redeveloped. The Flatiron Building is a highly-winning project of the San Francisco Business Times’ Rehabilitation Deal of the Year Award. Other successful projects include the Plaza building and the Sears Market project.
When the natives of the San Lorenzo Basin speak of the Silicon Valley, they pronounce the word “silicon” with a bit of ambivalence.

The San Lorenzo Valley, containing the bucolic towns of Boulder Creek, Brookdale, Ben Lomond and Felton along State Route 9, lies just over the Santa Cruz Mountains from the Santa Clara Valley. And as real estate values in the Santa Clara Valley have ratcheted skyward in synch with the dot-com revolution, two classes of newcomers have blessed the San Lorenzo Basin: those who can’t afford Silicon Valley’s real estate prices, and those who have so much money they don’t have to live there.

Either way, silicon refugees are pouring over the mountain into the San Lorenzo Valley and driving real estate prices out of sight. They’re also turning Route 9 into a racetrack.

Start along Route 9 at 7:30 on a weekday morning, and you’ll witness a parade of expensive limousines, every SUV and luxury sport sedan occupied by a single driver and no one else. Drive toward Saratoga on Route 9 in the morning and expect to be swept aside by a river of BMWs, Bentleys, Jaguars and mountainous sport-utilities threatening that you had as a child. Hitchhiking might have a camera set up on the out-bank.

State Route 9 peels northward off Route 17 just after it mosses out of San Jose toward Santa Cruz. A hook to the left and you’re in the village of Los Gatos, a charming little borough where sleek and trendy young mothers push strollers in strollers that cost about as much as an upscale second-hand car. This village, tucked into the eastern foothills of the Santa Cruz Mountains, likes to call itself the “Crown of the Foothills,” and we can see why. Its quaint buildings today show no sign of the 1989 Loma Prieta earthquake, which shook up the town and shook it like a dog with a stick.

Los Gatos got its name because Senora Novella, wife of the original Spanish land grantee, was kept awake by the howl of mountain lions at night. Today, they’re back, enjoying the occasional scat of a small dog or housecat that strays too far from the family dogs.

Call Los Gatos “Crown without the fog.” There are lovely taverns and restaurants, coffeehouses, galleries and boutiques with fashionable French names along streets adorned with wrought-iron planteur and antique streetlights. Route 9, also called Saratoga Road and Heracles, snakes past, leaving all of this undisturbed, to course northward toward Saratoga beneath oak, madron and eucalyptus, past honey, tucked back in the brush.

This start at around a million dollars for three bedrooms and two baths.

Saratoga has its own set of charms, including sculpted trees adorned with twinkle lights along Route 9.
The one-time Caltrans Maintenance Superintendent’s house, near where Route 9 intersects with Route 85, is now used as a base of operations during snowstorms and other emergencies.

As it to punctuate Lazarotti’s concerns, we aren’t more than a kilometer down Route 9 into the Big Basin when we find a Toyota pickup on its top, the driver shaken but unharmed. A crew from the California Department of Forestry is tending to him.

A few hundred meters below that, from a grassy lookout point, we survey the entire Big Basin, from the San Gregorio River on the north, to the Monterey Peninsula on the south. It’s a spectacular view, with thousands of hectares of redwoods, Douglas fir, maples, live oak and tan oak that, from here, obscure any evidence of human habitation. There are so many trees, it’s hard to imagine that spacious logging a century ago denuded these slopes.

Mothers Nuts, who dumps more than two meters of rain on this basin every year, doesn’t get angry. She gets even.

Down the hill about 4 km, State Route 236 branches off for Big Basin State Park, the first state park ever designated in California. Who knew there was a world-class redwood forest down here? But there is, and the traffic into it today, maybe 10 vehicles per hour, is a pam to Dennis Crockett, Supervisor of the Saratoga Gap Maintenance Crew. With him today are Kevin Kirby, Landscaper, and Don Sabio, Dennis Crockett and Doug Umbarger, patching up the road.

Saratoga’s European history started in 1776, when Captain Juan Bautista de Anza founded it, but it lay as a ranch for almost a century until someone decided the redwood trees on the hills were an economic commodity. Route 9 came into existence as a toll road to serve the lumber industry in the mid-19th Century. But Saratoga really hit its stride in the 1990s when a Frenchman with some grape cuttings from his native France showed up and founded the Paul Mason winery. It’s just up Route 9 from town.

The ladies behind the desk at the Saratoga Chamber of Commerce prefer not to venture up Route 9. We notice behind our hand at their feet a snaky uphill road, but when we get on it, we find out that it isn’t the curves that make this road a terror. It’s the other drivers. At the wheel of an expensive German sports car, we might be tempted by these switchbacks and 8 percent gradients, but instead, we move our shades Don King and securely to the side every few hundred meters to let those Jackie Stewart’s and Juan Manuel Fangio cross skyward, unimpeded.

Once in a while, down the hillside, we get a glimpse of the cause of all the excitement: the Santa Clara Valley, once fruit orchards, but now checkboard with development. Must be pretty at night.

At the top, where Route 9 intersects with Skyline Boulevard (State Route 35) we are met by Loren Lazarotti, the District 6 Maintenance Superintendent and our guide for the rest of the trip. Loren is a big, friendly, good-natured guy who has been around for 35 years and knows a lot of stuff besides the road, which he knows very well.

Lazarotti was here when the Loma Prieta earthquake struck in 1989, and again in 1995 for El Nino. “The earthquake changed the hydrology of the hills,” he says. “Suddenly we were getting springs, slides and slipsours where we’d never had them before. And El Nino made things worse.” A slide discovered by Lazarotti last year now bear his name. Every so often, Route 9 gets a dusting of winter snow that brings out skiers and snowboarders. Then there are those pesky drivers.

Over the hill into Big Basin, Route 9, threading its way through back country redwoods, is a race way for SUVs from Silicon Valley.
Below the turnoff to the park, we cross the San Lorenzo River, the first of several crossings. It doesn’t look like much more than a trickle, even later when we get to the end down by Santa Cruz, but Lazaretti assures us that when the rains come, particularly that famous El Niño, it can become a raging torrent.

As it descends along the river, Route 9 passes all manner of homes tucked discretely behind the redwoods, chapparral, manzanita, Scotch broom and poison oak. Geodesic domes sit alongside summer cabins, which sit alongside grand mansions, which sit beside shocks with tufted couches on the porches. In these midst aging hippies, dot-com millionaires, loggers, retired folk and local businesspeople, aiming foliage so dense they don’t have to cut allows with each other. “You never know who is doing to whom,” says Lazaretti.

Four towns are studied along the San Lorenzo River: each with Route 9 as its main street. These are, at the upper end, Boulder Creek, then Brookdale, Ben Lomond and Felton, which is nearest to Santa Cruz. Each has a different character, shaped by its history, but also a common heritage as a summer recreation destination for the rubbies from inland, refuges from California’s scorching summer.

Boulder Creek, in fact, probably always will be, a logging town. In spite of a smattering of boutiques, it remains a working town, with a hardware and grocery store and a bank and a butcher shop all snug in historic buildings that have been there since the last good fire, in 1860. Lots of summer folks wander up and down the streets, but it’s easy enough to imagine the clack of caddies on these sidewalks.

Down the road a piece you pass the Brookdale Lodge, which pretty much sums up Brookdale. It looks as if it business every once in a while, there’s revved by hopeful new owners from the parking lot, it has the look of someplace that might entertain a ghost.

Brookdale and Ben Lomond, Lazaretti points out the infamous “blue slide.” They call it that because it was a clay formation that just wouldn’t stop until Caltrans came in and installed damage and a half-viaduct. Until then, it was a chronic problem that turned acute one day during a storm when half the road slid away and almost stuck a Caltrans crew with it.

There’s not much to Ben Lomond except a grocery store and a firehouse and a really neat-looking swimming hole that is strangely unoccupied on this hot August day. The librarian explains. The town built a new-in-ground concrete swimming pool and all the kids are there. Ben Lomond does have a Department of Open Space, which seems like a nice idea. Barbara Koerskey, back in Boulder Creek, explained that Ben Lomond was once a logging town, but when the forest was cut back at the turn of the 20th century, the town elected to become a hotel town, which it was until the hotels burned down. Now it’s a vacation town that looks like a place where generations of teenagers have had their first summer romances.

Felton is our last stop on Route 9. Felton used to be the railroad town, where the redwood logs arrived by train and went out on trains. And indeed, today, you can take a ride on the Santa Cruz Big Tree Railroad along the west side of the San Lorenzo River, ride a stunning granite-and-sandstone whitewater canyon as a two-and-a-half-hour round trip between here and Santa Cruz. A diesel locomotive, properly acclaimed as an “Oriental” 1920s Locomotive, pulls out here, though it really ought to be steam.

Felton is a place whose feet straddle the centuries. It needs definition. Here you see the brick-vaults of a historic Victorian, but there it’s the tiff-up baby tuff of a strip mall. And no matter where you look, these Silicon Valley types are whirring around in their fancy cars.

Below Felton, a few years ago, Route 9 washed out and it took a lot of hard work by everybody, including Lomandra, to get the road back together again. Along here, the acacia and sycamores and bay trees and buckeyes and vines crowd the road as if neither nature were ready to provoke and take it back. She creases the road right to its end, but then you round a corner and there, as if you were coming out of a dark theater into bright sunlight, lies gaudy Santa Cruz with its freeways, tiki-wigs and roller coasters.

This might be the time to pick up some property along Route 9. About every fifth home seems to be for sale. It’s nice to think the silicon tide has lapped against the shore and retreated, leaving the San Lorenzo Valley to return to its snooze, but probably not.

Eeden, once found, probably won’t ever be Eden again. — Gene Bartholomew
A recipe for improving the state’s asphalt pavements

Photos by Don Tateishi

Out on State Route 1 near Fort Ross, Caltrans has just completed an overlay project that used Quality Control/Quality Assurance to ensure a long-lasting roadway surface.

Simply put, "QC/QA" means that the paving contractor is responsible for controlling the quality of the pavement while Caltrans is responsible for assuring that the contractor has accomplished that goal. Caltrans began applying Quality Control/Quality Assurance in the mid-1990s to asphalt pavement projects placing 10,000 tonnes or more of Type A or B asphalt. It does not apply to chip seals, seal coats, or friction course pavements. QC/QA was implemented at the direction of then-director James Val Lobo Jr., who felt that contractors responsible for quality should have more control over their operations.

Today, on projects that qualify for QC/QA, contractors are to hire or have in their employ a certified, independent testing firm to do tests formerly done by Caltrans inspectors and testers. Caltrans then double-checks at least 10 percent of test results to verify that they have been done correctly. More verification is recommended at the beginning of a project until there is confidence in the contractor's testing.

The basis for a bonus or deduct is whether the contractor's QC tests are on target and have a low variability. If the pavements consistently meet specifications, the contractor becomes eligible for a five percent bonus. If they do not, the contractor may be penalized as much as 25 percent. For critical quality characteristics, a pay factor below 95 percent results in stoppage of the operation until changes are made. Overall, on QC/QA projects around the state, contractors have received an average bonus of 3.5 percent.

Precision control applies to items such as stability. If the test results are outside of limits twice in a row, the operation is stopped and production is limited until there is assurance the contract is back in specifications.

Argonaut, Constructors of Santa Rosa was the contractor on the $1.5 million, 24-lane capital maintenance project on Route 1 near the Sonoma County coast to add an asphalt pavement overlay that varied from 90 to 135 mm.

As in all QC/QA projects, the contractor committed to an inspection plan detailing quality characteristics, responsibilities and control tolerances, as well as inspection, frequency and locations. The plan also specified a random sampling plan and qualified laboratory facilities at which the tests would be processed. All specified inspection and testing reports, daily records of inspection, posting of graphical summaries, and test results fell outside of specified ranges, corrective actions.

The Route 1 testing plan was reviewed by District 6 QC/QA coordinator Bob Rogers, a 33-year veteran of asphalt paving operations, but final approval is always given to the Resident Engineer — in this case, Hal Sorensen, also a veteran construction engineer.

Argonaut selected Sigmet Laboratories of Sacramento, an independent, certified testing firm, to carry out the tests. These tests would be used both to make acceptance decisions and to determine pay factors.

The first step in the process is for the contractor to design a mix and submit the mix design to Caltrans labs, which verifies that it meets the design criteria.
The Caltrans QC/QA Program

Quality Control/Quality Assurance is the accepted procedure for Caltrans asphalt concrete pavement projects using 10,000 tonnes or more of Type A or B asphalt. It does not apply to chip seals or rubberized pavements. Overall, only about 6 percent of Caltrans pavement projects are subject to QC/QA procedures. However, these are the largest projects and constitute a much larger percentage of the money spent on pavement.

Caltrans has now established Quality Control/Quality Assurance coordinators in all 12 of its districts and has a statewide coordinator in the Construction Division in Headquarters.

District coordinators review all Quality Control plans submitted by contractors and recommend approval to Resident Engineers. They are usually present when test strips are applied, visit the jobs as construction goes forward, and participate in evaluations and lessons learned at the project's conclusion. In the case of disputes between Caltrans and the contractor, the district coordinator also assist the resident engineer with dispute resolution.

As QC/QA systems are put into full implementation, the district coordinators are facilitating training sessions for Resident Engineers. Joe Rogers, District 6 QC/QA Coordinator and one of the first to be given the coordinator designation, worked with a statewide team to develop a training course, "Introduction to QC/QA Specifications for Asphalt Concrete." The two-day class leads students through QC/QA procedures and methods, roles and responsibilities, testing methods and required actions and dispute resolution.

Elements of QC/QA are used in specifications for other products, such as wetting and rapid hardening concrete. These include contractor testing, requirement for a quality control plan and quality control manager verification testing, RCC mix design done by the contractor and a schedule for a reduction in pay, should strengths fall below target levels.

Quality Control/Quality Assurance is the accepted procedure for Caltrans asphalt concrete pavement projects using 10,000 tonnes or more of Type A or B asphalt.
The frequency and fast return of QC test results on QC/QA jobs generally means that problems can be found and corrected quickly, ensuring a higher standard of pavement quality throughout the project.

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A drive on the new pavement provides a testament to the effectiveness of QC/QA. It is baby-skin smooth and uniform. Stroeter and Rogers are happy with the results they got and are of the opinion that it is likely to wear very acceptably.

Stroeter, like many Resident Engineers approaching the QC/QA process for the first time, questions the cost of providing independent testing. However, he also agrees that, at least in this instance, the process seems to have produced an excellent product.

Arlon’s project manager, Tim Anderson, and estimator Russ Seltzer characterize the process as “a pain in the butt,” but both agree that the taxpayers are getting a good deal for their money. They complain that the process takes the responsibility for quality out of the hands of the project manager and puts it in the hands of the independent testing laboratory. Caltrans responds that the project manager remains in charge. The testing firm merely gives a project manager information on which to act.

Regardless, as Anderson says, “It reduces the guesswork.” And that is probably the chief argument for continuation of QC/QA. As Bob Rogers says, it gives the contractor an incentive for providing a superior pavement and provides a single target for quality with each of the pavement tests.

A A drive on the new pavement provides a testament to the effectiveness of QC/QA. It is baby-skin smooth and uniform.

What is QC/QA?

- It is a different approach to achieving quality in pavements.
- It is giving the contractor responsibility for the quality of the end product and rewarding him or her when targeted results are exceeded.
- It is having the contractor perform quality control tests, which form the basis for bonus and deduction calculations to determine if the product meets specifications.
- It is the use of bonuses to reward a contractor when he or she provides a pavement whose test result averages are closer to target values and with less variability.
- It is the use of penalties when material is of large target or has large variability.
- It is the use of statistical methods to evaluate test data as a group rather than as individual payfactor tests.
- It is taking variability of sampling, testing, and production into consideration in the acceptance of pavements.
- It is turning the risk design of AC over to the contractor, but with Caltrans verification.
- It is having everyone contract; Caltrans, testers and lab—is qualified by Caltrans independent assurance staff.
- It is getting QC test results back by the next shift.
- It is the use of statistics (comparing two populations with the “z” test) to ensure that tests are verified.
- It is use of test strip (the first day of production) to show that the AC mix designed in a lab can be produced by an asphalt plant and a paving machine before full production starts.
- It is having a third party involved for evaluation of test results.
- It is having a contractor prepare a quality control plan and hire an independent manager.
- It is having an inspector ensure that the contractor is following the QC plan.
- It is turning over to the contractor the methods used to produce a good pavement and meet quality measurements such as compaction. For example, the contractor, rather than the inspector, determines where and how long to roll the mat to achieve compaction.
- It is still allowing the resident engineer to reject material because of poor quality (such as blisters, rock pockets and segregation) by visual inspection.
- It is use of data for decision making (which can be all the test data from a project) to determine acceptance and a pay factor (bonus or deduct). It is use of process control. When a contractor runs outside upper or lower testing limits, production is stopped, adjustments made and production limited until test results are back within limits.
- It is computerized graphing of test data to display results against contract limits.
The “Pink House Curve” lies about 40 km east of Redding on State Route 299 on a conventional two-lane highway in mountainous terrain that follows the course of Cedar Creek. In 1991, the highway alignment consisted of three tight, reversing curves with little or no tangent.

The middle curve — the Pink House Curve because of a nearby historic pink house (since painted brown) — severely restricted the sight distance of westbound motorists and was difficult to negotiate at higher speeds. Numerous accidents involving logging trucks overtaking or straying into the opposing lane resulted in an accident rate four times greater than the statewide average.

In 1987, a highway advocacy group identified the curve as one of the worst accident sites on Route 299 in Shasta County. Subsequently, District 2 installed warning signs and made other minor improvements, but they yielded no appreciable reduction in the accident rate.

Last summer, District 2 achieved its goal of improving the Pink House Curve. A project completed in the summer of 2000 provides a prime example of how Value Analysis can yield significant savings while serving the original purpose of the project.

In 1993, District 2 had completed a Project Study Report with two main alternatives: one, to cut back the hillside and the other, preferred one, to realign the roadway with lower hillside cut. The preferred P3M design improved the sight distance and the design speed, but it also had serious deficiencies. It violated mandatory design standards with 215 m radius and substandard tangent sections that did not provide the mandatory 80 km/h design speed. It also would have required a 60 m cut at a 1:1 slope and the removal of 16,000 m³ of surplus excavated material.

The $7.7 million project originally would have required a 300 m-long retaining wall at its south end in order not to erode into Cedar Creek. It also would have impacted the riparian habitat of the endangered Shasta salamander, Shasta ornata.

A project completed in the summer of 2000 District 2 provides a prime example of how Value Analysis can provide significant savings while serving the original purpose of the project.

A sideband snail and Shasta salamander would have required relocation of the Pink House, which was on the eligible list for the National Register.

It was clearly necessary to consider other options, and in 1992, District 2 decided to perform a VA study, with team members from project development staff, traffic operations, the Route 299 Task Committee members, and a California Department of Fish and Game biologist, who simplified obtaining the needed permits.

In its first study phase, the team considered the functions that the proposed project was to perform. These included improving the sight distance, accommodating environmental concerns, providing safe passage during construction and acquiring right of way.
In the creative phase, the Value Analysis team brainstormed to create alternative methods to deliver the project's two excellently Kevinings, improving the sight distance and accommodating environmental needs. Steve Hogans, District 2's regional project engineer, points to the importance of following up even the weakest ideas during this phase. “When the notion of crossing Cedar Creek twice was tossed out, everyone in the room kind of gave each other one of those ‘looks,’” Hogans says. “But as we continued to look at it, the idea just got better and better.”

In the development phase, the team developed numerous alternatives from the brainstorm list; however, the double crossing was clearly superior and became the preferred alternative. It consisted of a dual alignment that exited the mountain into the flats with a pair of sloping, 260 m radius curves separated by a standard length tangent. This design eliminated the earlier proposal’s large hillside cut and the 306 m rolling crescent, remaining well.

The solution did require two crossings of Cedar Creek, but, even so, was less damaging to the environment. It reduced both encroachment on the hillside erosion that would have degraded water quality.

Better yet, the VA alternative provided $1.8 million in savings, primarily by avoiding the large cut, which would have involved blasting, working in the traveled way, hauling of excess excavation and traffic control. Other savings resulted from eliminating the long retaining wall and reduced environmental mitigation costs.

The existing project benefits were almost immediate. It obtained the full geometric standard to provide an 80 km design speed, eliminated the lane closures and other traffic impacts during construction and avoided the relocation of the historic Pink house. It allowed for an environmental clearance with a finding of No Significant rather than an Environmental Impact Statement, reduced environmental mitigation costs, and eliminated a hillside cut with a mutative reduction in water quality degradation.

The Value Analysis proposal, which was accepted by the district shortly after the conclusion of the study, received the FHWA’s Most Outstanding Value Engineering Study Award for that year. A categorical exclusion under the National Environmental Policy Act and a negative declaration under the California Environmental Quality Act were obtained late in 1994. The design developed during this phase remained very close to the Value Analysis team's concept, both in scope and budget.

Construction on the project started in 1999 and was completed in 2000. Julie Casey, who served as Project Engineer, found that the team's proposal remained solid as she proceeded through design. The final design was virtually identical to that prepared by the team, and the contractor's bid, at $5.25 million, was within an acceptable range of the team's estimate of $4.6 million, more than eight years earlier.

This is not always the case. Mark Miller, currently District 2's Value Analysis Coordinator, emphasizes the need for rigorous analysis of the alternatives throughout the project. "We have had VA projects where that rigorous analysis was not done, and where we actually had to go back to square one when we got into design. The Pink House Curve project was one where that analysis was rigorous; the presence of the biologist and also of a geologist on this team was crucial to getting a successful project."

The Pink House Curve value analysis exercise was directed by Charly Ludwig, now retired. It followed value analysis procedures and was subject to rigorous analyses. It saved California taxpayers a considerable amount of money and avoided a number of negative impacts. It is an illustration of what the VA methodology can yield, when performed effectively.
Transferring the Load
Dowel Bars in Concrete Slabs

By Kevin Hassett
Chair, Pavement Design and Rehabilitation Committee

Photo by Dara Fontan

The heyday of California freeway construction, during which the then-Division of Highways built as many as 560 km of pavement lanes a year, actually covered a relatively short period, from the mid-1960s to the mid-1970s. Design criteria during that era required a 20-year pavement lifespan; the majority of California’s pavements thus are now well beyond their projected lifespan. Fortunately, the pavements have performed better than originally expected.

But Caltrans is now adopting strategies to produce asphalt and concrete pavements that will have a much longer design life. The concrete pavement design features that Caltrans will use to obtain this longer life include improved base design, increased concrete thickness, stronger shoulders and joint improvements.

Caltrans has recently begun using dowel bars embedded in concrete pavements to improve the performance of joints and currently has several projects under way, either by retrofitting existing pavements, or placing dowel bars in new pavements.

New Portland cement concrete pavements crack naturally, because of shrinkage during curing, but they also crack because of daily and seasonal temperature variations due to curling and warping, variable base conditions, moisture and loading. To control the location and geometry of this cracking, road builders place joints in the pavement. Transverse joints, to control natural cracks, are sawed into new pavements at intervals that vary by 3.0, 4.6, 4.9 and 4.3 meters. These intervals are staggered to eliminate the “Black Bruno” - the rhythmic pumping of a car’s suspension system as it crosses the joints. The joints are sawn to a depth one-third of the total pavement thickness.

Longitudinal joints control cracking where two or more lane widths are placed at one time. Typically, pavement joints are filled with sealant (asphalt rubber, silicon or pre-formed reseal) to reduce water penetration and, more importantly, to minimize the initiation of small inseparable materials like sand and rocks.

Sawing the joints, while the pavement is still “green,” reduces cracking by creating a plane of weakness. Until recently, Caltrans design practices have relied on joint/crack aggregate faces between the slabs to interlock and keep the separate slabs from moving independently as loads traveled over them. When dowels are used at the transverse joints, the separate slabs move as a unit, and the loads are transferred between slabs, reducing the amount of stress experienced by each slab and allowing for longer life pavement.

A load transfer of 90 percent is considered ideal to reduce faulting and differential settlement of slabs.

As long as four to five million accumulated 80 KVA equivalent single axle loads can produce objectionable faulting in pavement joints that rely only on aggregate interlock to produce load transfer. Many of California’s older concrete pavements have now reached this point.
Caltrans and the Federal Highway Administration now consider placement of dowel bars in new and existing pavements as desirable to achieve longer pavement service life.

Today, driving along the mammoth paving operation over the Donner Summit on Route 80, panstersly observe bundles of purple metal rods, 30 mm thick and 450 mm long, stacked at 20 meter intervals along the project. The Caltrans web site daily fields several inquiries as to what they are for. They are dowel bars.

Dowel bars have been used in other states for a number of years. Many years ago, Caltrans evaluated the practice but chose not to adopt the technology until precision control of the placement was available. Caltrans’ first dowel bar projects went to construction in 1998.

Caltrans and the Federal Highway Administration’s California Division now consider placement of dowel bars in new and existing pavements, along with improved base design, increased concrete thickness and stronger shoulders and joint improvements as desirable features to achieve adequate load transfer and longer pavement service life. The Caltrans Division of Design issued standard plans for pavement joint design using dowel bars in 2000.

Dowel bars are smooth round bars placed across transverse joints to transfer loads without restricting horizontal joint movement. They also keep slabs in horizontal and vertical alignment. Since dowels span the joint, daily and seasonal curling and warping do not affect load transfer across dowel joints as much as it does undowelled joints.

Dowel bars reduce deflection and stress in the concrete slab and lower the potential for faulting, pumping and corner breaks. They increase pavement service life by reducing deflections and stresses by transmitting the load across the joint. For example, a 250 mm-dowel bar with 80 percent load transfer will have the same deflection as a 500 mm undowelled slab with only 40 percent load transfer.

NEW PAVEMENTS in new pavements, dowels may be placed either by using load transfer assemblies, more commonly called “baskets,” that hold the dowel bars in place or by automated dowel bar insertion devices attached to the paving machine. Dowel baskets are placed manually on the base material at varying intervals to hold and support the dowels at the proper depth and alignment. The baskets are attached to the base with staking pins. Temporary spacer wires extend across the joint to stiffen and stabilize the basket and minimize movement during placement and are to be cut before paving. When a dowel bar insertion device is used on the paving machine, the dowels are placed using a computer-controlled inserting and vibrating process.

All dowels, no matter how they are placed, are coated with a bond breaking material, either a petroleum paraffin or a white pigmented coating compound. The dowels are coated to allow the concrete to move around the bar as it expands and contracts with temperature fluctuations.
Retrofits Dowel bars are also used to provide load transfer in existing pavements. When retrofitting, a gang saw is used to cut three pairs of longitudinal cuts that are 50 mm apart and 609 mm long. These parallel cuts are made at the transverse joints to a depth that allows the center of the dowel bar to be placed at middle-depth in the pavement slab. The material between the cut is then jackhammered out so as not to damage the remaining pavement and the surfaces of the slab. The slab is then cleaned by sand blasting, vacuuming, and treated with moisture-free, oil-free compressed air. The dowels, rigidly centered to achieve the desired horizontal and vertical alignment, are then placed in the slots. Prior to placement, the dowels are coated with a bond breaker. Expansion gaps at each end of the dowel allow for thermal expansion and contraction within the slabs. Fast-setting grout is then pumped around the dowel and vibrated to assure a strong bond. After the grout dries, it is ground off, and the joint is properly sealed, the sealant can be placed in the joint.

While the concrete is being placed, the joints are marked for sawing. Under normal conditions, sawing begins within two to four hours after placement of the concrete. The initial saw cut, to control thermal cracking, is one-third of the thickness of the slab. A widening cut, as necessary to establish the proper shape for sealant, is generally made within seven days of the initial sawing. Prior to placing the sealant, the joint must be cleaned successively by sandblasting, vacuuming, and with compressed air. Once the joint is properly cleaned, the sealant can be placed in the joint.

The Caltrans Division of Design issued standard plans for pavement joint design using dowel bars in 2000.

PORTLAND CEMENT CONCRETE PAVEMENT (UNDOWELED TRANSVERSE JOINTS)

PLAN
Lane/shoulder addition or reconstruction

PLAN
New Construction

Manual dowel bar placement in a section of Interstate 80 near Kingvale.
Marathon Man Goes to Boston

Clyde Aker, Caltrans Area Supervisor, competed in this year's running of the world-renowned Boston Marathon.

The Marathon Man is alive and running in the far reach of District 2 and the Feels Maintenance Station. Clyde Aker, Caltrans Area Supervisor, competed in this year's running of the world-renowned Boston Marathon.

To qualify for the Boston Marathon, a runner has to complete an earlier 26.2-mile race in less than 3:35 hours. Clyde ran a 3:21 to join a group of northstate runners for the 105th annual event.

Clyde had a great time in Boston, a fun town for a guy from Siskiyou County. “Using the T (the local subway system) was a lot easier than trying to get to the starting line on race day. I couldn’t run a straight line, had to zigzag through this narrow area of humanity looking for the start line. It took me more than five minutes just to get to the start line,” he says. Once on his way, Clyde took into high gear and ran his personal best of 3:35.

Aker ran his first marathon in 1996. Not being too excited about all the effort required to prepare for a race, he took a break and didn’t run his next one until 1998. Since then, he has run in 17 marathons. Ultra-marathons are his specialty now, those being any race greater than 25 miles. In 2000, Clyde ran and won five races altogether, three of which were 100-mile ultra-marathons.

Training in the high, dry air of Siskiyou County, Aker enjoys mountain trail running. He recently completed the 50K “50K” run in the Siskiyou Outback Run, the Pacific Crest Trail for 50 km along the rugged California-Oregon border. Next up, in September, is a 100 km race in the Sacramento foothills, from Auburn to Auburn and back to Folsom, with a goal of finishing in fewer than 24 hours. “They take you off the course after 30 hours,” Aker says. “That’s a long time running.”

To keep in shape for ultra-marathons, Clyde averages 100 km a week on the trails around Truckee. So far, he has run over 2500 km under his feet this year. For an extra workout, he climbs Mount Shasta to sample air that is really rare at 4315 m.

Clyde sums up his adventure at the Boston Marathon as “being all it is advertised to be.” Starting at position 7214 and finishing at 2700 in the field of 13 600 entrants, he collected over 4500 “roadkills,” quite an accomplishment. In a runner's world, every time you pass another runner, that's a roadkill.

“That’s a big day for a Caltrans guy,” Aker says.

— Mark Fawkes, District 2 Public Affairs

Caltrans Guy to ‘Star’ in Matrix Sequel

Lights, Camera, Action.

Werner Bros. is simultaneously filming two sequels to “The Matrix,” the highly successful 1999 sci-fi movie that starred Keanu Reeves and Laurence Fishburne. They’ve completed work in Australia and were recently in the Posey Tube in District 4 to shoot some air-traffic segments.

This time, Keanu Reeves and Fishburne were joined by one of our own Caltrans stars, Tyrone Brown, formerly the District 4 Labor Compliance Officer and currently working as a retired employee, got the call to be an extra in the film. Tyrone has worked in many movies around the Bay Area as a stand-in and extra.

Although filming will have to wait until the movies are released to see the actual scenes from the Posey Tube, Mr. Bowman says the effort was worth the wait. The 1-hour location shooting in the tube cost about $1 million. (Tyrone gets a very small piece of that and shares 2002 and 2003 prototypes automobiles. The film production company also spent another $25 million to build a 1.6 km elevated stretch of freeway at the landing stop at the Alameda Naval Air Station. Each location will be returned to after the filming as quickly as possible to return to normal operations.

Tyrone had a regular job on “Nash Bridges” until that show recently cancelled production. Mr. Bowman says working in films is his true love, but his storybook appearance was on “Nolan of Fortune” where the show was in San Francisco recently. Actually, he was not the character. His daughter moved the money and got the glory when he was invited on.

Over a year ago, well before casting for extras began, the film company approached Caltrans to close a freeway in the vicinity of the Bay Bridge. They were turned down due to severe traffic problems.

But after some further negotiations, Route 246, the Posey Tube, from Oakland to Alameda, currently being seismically retrofitted became acceptable to all.

The plan called for filming over successive nights to avoid causing traffic delays. After many years of working in construction, Tyrone felt right at home on this site. The Matrix filming was the first time Tyrone was able to combine both of his careers.

Caltrans District 4 is often the host to Hollywood movies. Some have been notable and some not so notable. "Mundania" required traffic controls on Highway 25 through the Napa Valley. "George of the Jungle" had a two-minute scene that acquired two-weeks of lane closures on the Bay Bridge. The District 4 office was used in an Italian bank commercial recently. That may sound dull but the day filming involved about one hundred men and women wearing no pants or shirts. And, oh yes, Sharon Stone had the principle role.

Since the movies are one of California’s biggest industries, Caltrans accommodates them wherever we can. The film company usually contacts Caltrans to discuss a proposed work site. They then apply to the California Film Office in Los Angeles and District 7, together with the local district, writes the permit. All can take place in a matter of hours but usually requires at least a few days of planning and negotiation. We base on maximum safety and minimal traffic delays.
Sky’s The Limit

It’s always fun to turn on the TV and say, “Hey, I know that guy.”

This guy, on the show, “Win Ben Stein’s Money,” being shown around in syndication these days, happens to be Caltrans Television Specialist Steve DeVorinik.

“It was my two personalities crashing together,” says DeVorinik, who had set to settle for a consolation prize of a portable TV. “One personality is to be a famous actor. The other is to win the $5000.”

The personality that won out on the program was the famous actor, as DeVorinik managed several movie cameos and prompted Stein to say, “You know, you’re very funny.”

To get on the show, DeVorinik “just went on their web site and signed up.” He got on the show on his second try. “You have to have an outgoing personality and they have to like you,” DeVorinik says.

He did the program last spring, and each time it is shown, he gets calls from friends around the state. “I don’t like to watch it, though,” he says, “because I didn’t win the money.”

Show business is all hat to DeVorinik, who worked as a professional actor for eight years before deciding that the stability of Caltrans was for him. (His little-known Caltrans right-of-way agent, kept urging him to get a steady job.) DeVorinik specialized in makeup comedy and did bits on “Cheers,” “Midnight Court,” and “a whole bunch of shows that will never see the light of day.”

“I did improv with John Lottiz and Conan O’Brien and I know Lisa Kudrow when she was a brunette,” says DeVorinik.

Nowadays, being behind the 20-ft. in the air in the bucket of a Caltrans lift truck or filming video a 300-ft. in the sky from the quiet deck of a helicopter are all in a day’s work for him. DeVorinik will do just about anything, with the proper safety precautions, to get the best shot for his vast library of Caltrans video and photographs.

In addition to his feats of daring, DeVorinik spends much of his time at Caltrans working on anything and everything dealing with video. He coordinates all video productions, from setting up a television set for a training class or producing a broadcast public service announcement, to filing requests from media outlets and documentaries for footage from a vast archive dating to the 1930’s of Caltrans films and video images.

Employed since 1995, DeVorinik says he feels fortunate to work at Caltrans because it offers him an outlet where he is able to “uncover new creative possibilities for projecting a positive image of Caltrans to the public.”

He adds, “I am challenged every day to make the mundane interesting. I think it is a big to be boring.” He also says his background as an actor and performer helps him look at things at Caltrans a little differently.

An avid train enthusiast, DeVorinik volunteers his time during the holidays at the Thalaid Town Trolley Museum at Los Angeles’ Griffith Park where he is affectionately known as “Santa Claus.” Dressed as Santa Claus in an engineer’s overalls, he greets children as they take a short ride on one of the many vintage trains at the popular museum.

—Jean Bartella, Caltrans Public Affairs, District 7

A Gentle Hand on the Pulse

Joann Cole could have predicted a spate of phone calls volunteering to give blood after the recent tragedy at the World Trade Center in New York City. Cole, who coordinates markets, windows and data circuits with the other folks in Information Services, gets those calls every time there’s a major calamity.

But Cole, who has been the chairperson of the Caltrans blood donation program for the Sacramento area for the past 16 years, stresses that the system really works best if people donate regularly rather than when there’s a crisis.

“At any given time, the region has a three-day supply of blood on hand,” she says. “When there is a crisis, all kinds of things have to happen that would be a lot easier if there were a larger supply.”

Joann Cole has been involved in Caltrans blood drives as a donor and a volunteer since the day in 1985 when she first came to work, uttering the magic words, “Is there anything I can do to help?”

In 1984 Cole became co-chair for drives, and since 1985, has been the chairperson. Five times a year, a week each time, the Sacramento Blood Center sends a mobile donation unit to four Caltrans locations. The circuit is the same each year—Monday to Thursday—where JoAnn Decker coordinates things: Tuesday to District 3 offices at Gateway Oaks, where Bruce Harman sees to arrangements. Wednesday, it’s at Headquarter under the watchful eye of Cole, then on Thursday, it goes to Farmer’s Market where Gene Robbins and Herky Dahl are in charge.

Cole begins planning the drive a year in advance, reserving rooms and working with the blood center to schedule mobile units. She sends emails to all staff and coordinates the activities of the 20-25 volunteers who provide refreshments and escort donors each day. She also sends publicity to the employee associations, other nearby departments and outlying offices.

Caltrans people who donate may designate that the credit for their blood go to employees and friends at Caltrans.

“We have sent credits to other states for people who are relatives of Caltrans staff,” Cole says. “Several years ago, one of our employees had a nephew in Pennsylvania who had leukemia. We put on a special drive to provide credits for the boy.”

The blood drive program has been sponsored by the Public Works Association since 1941 and has the active support of Director Jeff Nichols. Anyone wishing to donate or volunteer should email or call Joann Cole.

—Gwen Buhler
Shelagh Bronson, Cultural Librarian, brings the culture of Scotland and Ireland to visitors in various pleasant and recreational venues around Northern California.

that performs in the manner of “Aimish and Lord of the Dance.” Siamese perform at the Renaissance Pleasure Faire in Vacaville, the Dickens Christmas Fair in San Francisco, and at various Renaissance and Caledonian events throughout Northern California.

She refers to her role as head of the group as “a border collie, herding cats.”

Shelagh Bronson, who has been in business in various incarnations since 1984, evolved out of classes she taught at the University of California at Davis Experimental College.

Her immersion in Scottish and Irish culture actually came fairly late, she says. “My grandparents immigrated from Ireland, and when they got here, they decided they would now be ‘American,’ not ‘immigrant Americans.’” While her family was musical, it was mostly traditional American music that they performed.

But when she was in her twenties, Bronson developed an interest in her family’s culture. Traditional Irish culture had been something of an under-the-table matter in Ireland as the English dominated the country for several centuries. But with the rise of nationalism at the turn of the twentieth century, traditional song and dance came out of the closet. The popular stepdance groups now so much in vogue are an expression of that nationalism.

Today’s Irish dancing has become more athletic as a result of going showbiz, and the most athletic activities, such as going en pointe, require classes that have been studied since they were children, a la ballet. These are regional, national, and international Irish dance competitions, called feis (pronounced “feesh”) and most all of the children and adults in Bronson’s troupe compete in feis or in Highland dance competitions.

Siamese get together for its major events, but everyone, studio, and concert independently as well. They’re all good at what they do, so it’s just a matter of putting it all together.

Ms. Bronson received her undergraduate degree at Oberlin College, in Ohio. She received a Masters degree in theater from San Francisco State University and a Masters in Library and Information Science at UC Berkeley. She got her Ph.D. from UC Davis, and has also taught theater and film history.

Bronson has a love of history, and that’s what brought her to the College Library, where she is a specialist in historical matters. That, and the fact that her dad was a career employee of the Ohio Department of Transportation.

But their feet are rarely still. Dancing, she wears a button that has a quote from Emma Goldman: “If I can’t dance, I don’t want to be part of your revolution.”

— Cara Berthelsen

What I did on my Vacation, or Baseball, Baseball, Baseball…

(Continued)
A “Traffic Jam” Like No Other

Unlike most commuters, four Caltrans employees and one of their friends didn’t mind getting into a traffic jam when it isn’t the office. But this is a traffic jam like no other. The four are each members of a band called appropriately, “Traffic Jam.” The jamming these five do is all together different from what one would ever find on California’s freeways.

“Traffic Jam” came together just two years ago when Information Systems Analyst Greg Panos, a guitarist, and Medardo De La Cruz from Project Development, a saxophone and keyboard player, discovered their mutual interest in music. The two decided to get together after work one day to “jam.” Along came Cecilia Jaramillo from Traffic Design, who played bass. Jesus Acosta, a friend of the group and drummer, who works for the University of Phoenix, rounded out the foursome with a great sound. And with the recent addition of Maricela Soto, a student assistant from Information Services, Traffic Jam twice a week.

This “Traffic Jam” truly works together and plays together. Its first gig was at a Caltrans Construction plant, but the word spread and now, through word of mouth, they are kept busy.

“We have played at weddings, fundraisers, small concerts, and parties, and we even worked at United Way Campaign,” said Panos. “The band plays jazz, rock, blues and contemporary songs — a little something for everyone.”

“We work together as a team,” Panos adds. “That’s what makes it fun. And we always discuss what we’re going to do and in what direction we’re headed.”

Regardless of the case, the group hopes to be together for a long time. Whether working together in the Caltrans district office or playing music for a live audience, “Traffic Jam” jams like no other.

— Jennie Bonilla, District 7 Media Analyst

The ghostly events on the East Coast on September 11th have brought home, once again, the horror of ordinary people everywhere who put their lives between danger and the rest of us.

Just this summer, Caltrans people in many parts of California had to do their duty at a time when the fire was raging on them. Mill Apple is one of them. The so-called “Oregon Fire” broke out on the afternoon of August 28th and clawed its way north toward the historic community of Weaverville where Apple is a Maintenance Supervisor. The fire burned along both sides of State Route 295 and reached the road and Weaverville in less than four hours, threatening the town with a firestorm. The new Randy High School and many residents, who had to be evacuated, were saved.

Apple quickly coordinated work assignments for his crew with the agencies involved in the firefighting effort, but was soon confronted with the news that fire was advancing on his mother’s home, one he himself had built that year. Apple helped his mother, Marian, gather the most important items — family pictures, keepsakes, paintings and some clothes. “We had to leave in a hurry because another leg of the fire was approaching my own home on the other side of Weaverville,” says Apple.

Mill and his mother headed to his new house to help his wife Carolyn and his son, Eric. “I just had time to empty the freezer of last year’s watermelons and this summer’s blackberries.” Fortunately, the fire changed direction and they put everything back.

Now, Marian’s home and several others nearby were engulfed in flames. One of those belonged to District 25 Deputy District Director of Finance, Brian Crowe, whose parents had gathered up as elderly neighbor and fled to Redding. Nothing was left of the two-story house Crowe had called home.

Even after losing his mother’s home, and knowing that his own could go up in a cloud of smoke, Apple went about his job of directing the Caltrans crews until the next day, when the Oregon Fire finally cooled down.

Later that week, California Governor Gray Davis visited the fire area and at a press conference, expressed his appreciation to Caltrans Maintenance Area Supervisor Bill Apple for his work in containing the Oregon fire.