HISTORIC PRESERVATION AND CALTRANS

ARCHAEOLOGY

Caltrans

ENVIRONMENTAL PROGRAM
CALIFORNIA DEPARTMENT OF TRANSPORTATION
FEBRUARY 1998

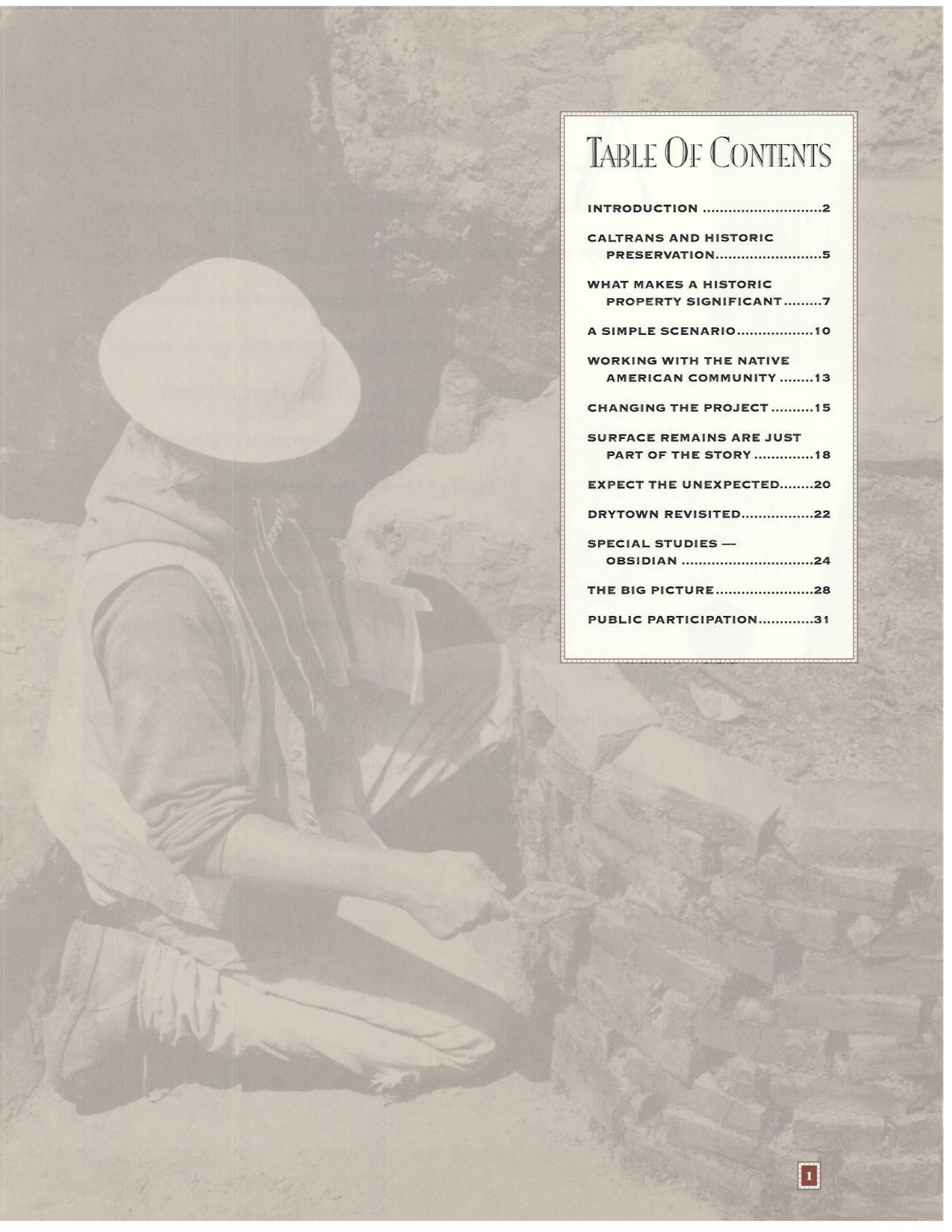


Table Of Contents

INTRODUCTION 2

CALTRANS AND HISTORIC PRESERVATION.....5

WHAT MAKES A HISTORIC PROPERTY SIGNIFICANT.....7

A SIMPLE SCENARIO.....10

WORKING WITH THE NATIVE AMERICAN COMMUNITY 13

CHANGING THE PROJECT 15

SURFACE REMAINS ARE JUST PART OF THE STORY 18

EXPECT THE UNEXPECTED.....20

DRYTOWN REVISITED.....22

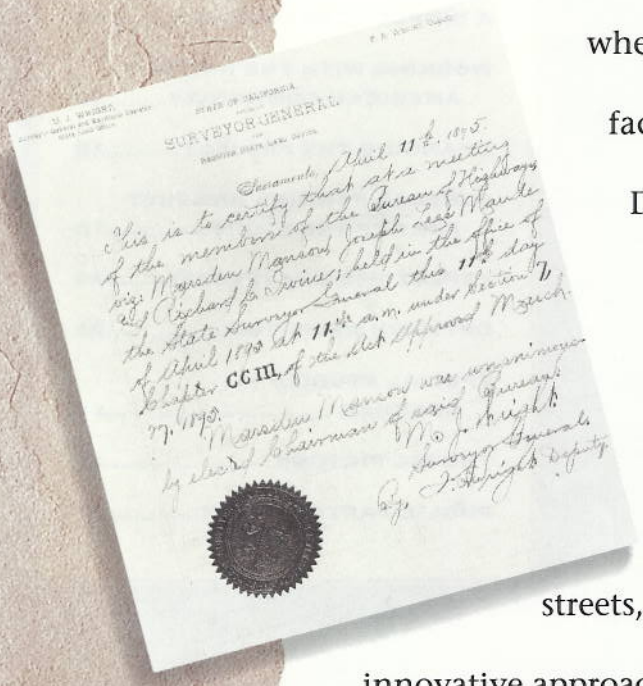
SPECIAL STUDIES — OBSIDIAN 24

THE BIG PICTURE.....28

PUBLIC PARTICIPATION.....31

A century has passed since California's first Bureau of Highways was formed, and much has changed in that time. We have seen first the beginning and then the overwhelming presence of automobile traffic and the facilities to serve it. Now the California Department of Transportation (Caltrans) is looking toward the future with a new vision.

Caltrans' vision includes a modern, swift and comprehensive mass transit service, along with well-managed and maintained streets, roads, and highways. New technology and innovative approaches will be applied to provide quality transportation products and services, while protecting the environment, to meet California's needs.


SURVEYOR-GENERAL.

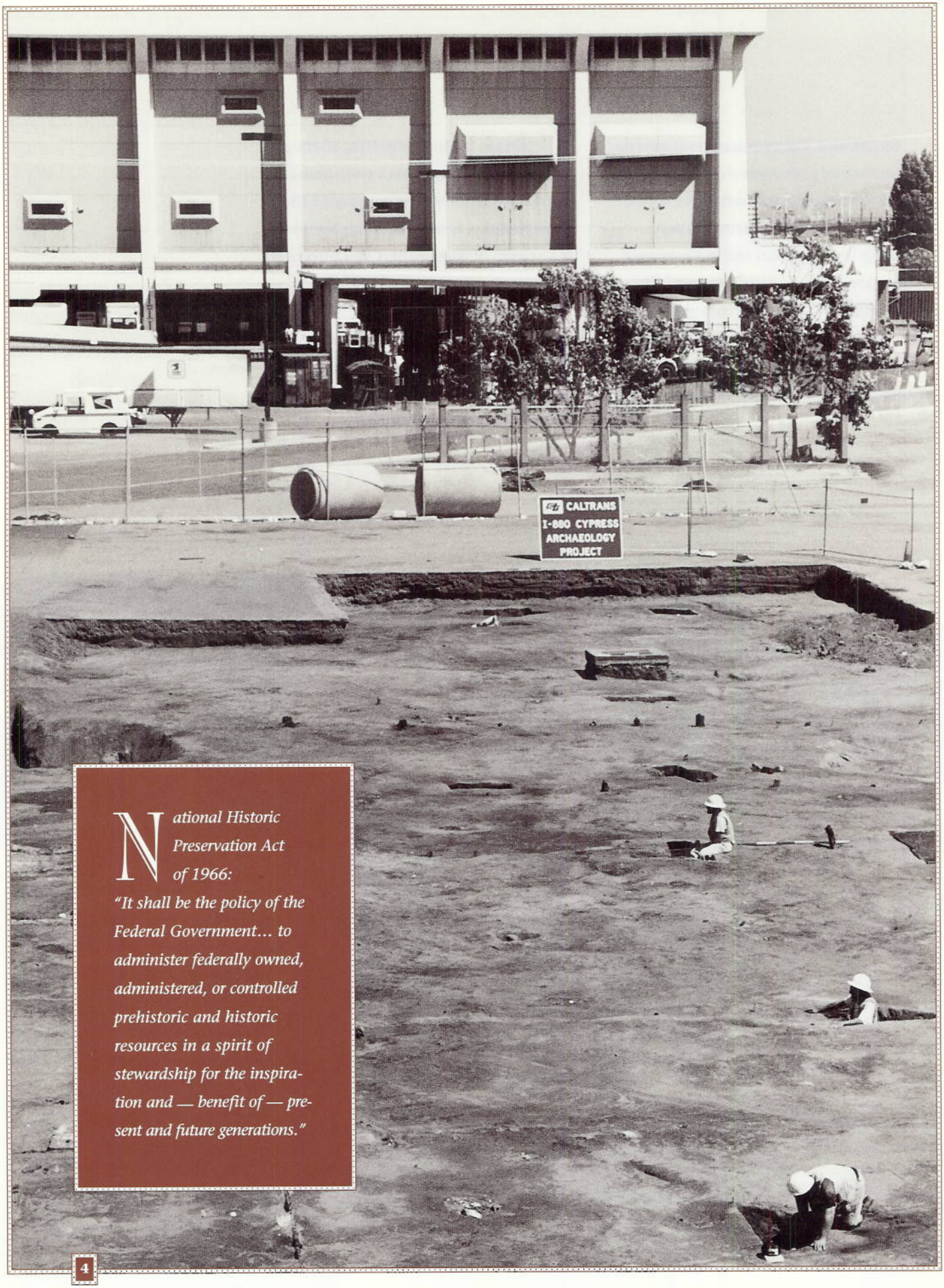
The minutes of the first meeting of Bureau of Highways recorded the election of Marsden Manson from San Francisco as chairman. Under his leadership the Bureau advocated lowering the highway tax rate within the counties and levying money on a statewide basis too, so all taxpayers would share in paying for a statewide highway system.

To this end, Caltrans has developed an environmental policy which is integrated into all the Department's activities, from planning to project implementation, including the operation and maintenance of the state's transportation system. The policy requires Caltrans to consider environmental consequences before taking action and to implement practices that minimize environmental impacts.

Caltrans is also committed to the goal of enhancing California's environment, economic vitality, and quality of life. Transportation is more than highways—it is a system of partnerships and integrated goals for the future.

This brochure presents case studies illustrating how Caltrans engineers and environmental staff deal with historic preservation of archaeological and Native American cultural resources.

Mapping a site



National Historic Preservation Act of 1966:

"It shall be the policy of the Federal Government... to administer federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and — benefit of — present and future generations."

Caltrans And Historic Preservation

As the state's transportation needs evolve, Caltrans is looking at new ways of planning and managing projects within the overall system. An integral part of that planning is consideration for historic and prehistoric resources and for sites with traditional cultural values, as required by the following federal and state laws.

- The National Historic Preservation Act, Sections 110 and 106
- The National Environmental Policy Act
- The United States Department of Transportation Act, Section 4 (f)
- The California Environmental Quality Act, Sections 21081, 21082, and 21083.2
- The California Public Resources Code, Sections 5024, 5024.5, and 5097
- The Governor's Executive Order W-26-92

These laws are designed to ensure consideration of the important cultural resources which embody the heritage and history of our nation and state. In particular, Section 106 of the National Historic Preservation Act serves as a basic foundation for Caltrans policy regarding the preservation of historic and prehistoric properties.

The National Historic Preservation Act created the National Register of Historic Places, which lists properties of national, state, and local importance, and requires that federal agencies consider the effects of their projects on such properties. Section 106 of that act is implemented by a uniform set of regulations and guidelines, requiring consultation with various groups representing federal, state, and local interests at every step of a project. Every Caltrans project will "take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register." By ensuring the "adequate consideration of cultural resources," the 106 process is at the heart of federal, state, and Caltrans preservation policy.

In 1992 by executive order, the governor acknowledged that the preservation and wise use of California's cultural resources are important to the people of the state. With the subsequent establishment of the California Register of Historical Resources, a process paralleling the federal Section 106 procedure has been put in place to ensure the preservation of historical resources that are significant in state and local heritage.

Transportation projects can affect prehistoric or historic resources in a number of ways. Construction of a new highway, widening of an older road, or excavation for piers for a new bridge can demolish archaeological sites or damage cultural properties.

The first step to prevent these effects is to discover if any of these properties exist in the project area. By research and study and on-the-ground inspection of the project area, Caltrans' staff of qualified archaeologists can identify those resources. If, after further examination, any resource is found to be significant, that is, eligible for listing in the National Register of Historic Places or the California Register, then the project's potential effect on them must be evaluated. All of these steps are documented and included in a written assessment that will be submitted by Caltrans and the Federal Highway Administration to the State Office of Historic Preservation for review, and on occasion, to the President's Advisory Council on Historic Preservation.

Projects that would demolish or damage historic or prehistoric archaeological properties, or impair the qualities that can make them eligible for the National Register are generally found to have an adverse effect. When such adverse effects on resources due to project effects may be possible, Caltrans is required to examine ways to avoid, reduce, or mitigate those effects. Can the bridge be redesigned within the existing right-of way? Can the highway be relocated? In widening a road, would it be possible to shift the impact to another side and avoid archaeological resources?

Sometimes, in the best public interest, a project cannot be changed enough to protect prehistoric or historic properties. Then Caltrans must look at ways to reduce or mitigate project effects. The value of archaeological resources is in the information they can provide concerning the culture and lifeways of people who have used or inhabited those sites. That information is obtained by systematic archaeological investigations, including research and excavations. Those investigations supply the data that show the importance of these properties for our cultural and historical heritage.

Caltrans' first priority is to avoid effects on historic and prehistoric resources, but protection of those properties must be balanced with other environmental, economic, and engineering concerns. The federal and state laws ensure that historic properties receive full consideration before any action is taken. If there is a prudent and feasible alternative to damaging the properties, Caltrans must take it.

Some examples follow of actual projects illustrating how Caltrans pursues its responsibilities with regard to the archaeological remains of our prehistoric and historic past.

Digging by hand, and using a wet screening process, teams sift through the soil with small mesh screens, and uncover small bones and shell beads which might otherwise be overlooked.

What Makes A Historic Property Significant

IS THIS PLACE IMPORTANT?

Several crucial questions must be answered before time and money are spent on investigating historic places. Is there enough evidence of the past left to observe, collect, and analyze? Are these remnants of the past and their interrelationships undisturbed enough to reveal their place in the lifeways of those people who lived in the area? Is this place associated with events or persons that are important in national, regional, or local history?

These questions can be answered by investigations both above and below the ground. If human or natural activities have so damaged or scrambled pieces of the past that they no longer can provide information, then the site is not intact enough to be considered eligible for the National Register of Historic Places or the California Register.

If the examination reveals a resource that is essentially undisturbed and can supply valuable evidence to understand past lifeways, then the archaeologist can conclude that the resource is an irreplaceable piece of the past which federal and state laws were made to protect.

These issues arose when a major realignment of Highways 101 and 152 was planned for the southern Santa Clara Valley. One major task was the testing and evaluation of 13 prehistoric and historic archaeological sites that had been recorded during the survey of the proposed routes in 1990. Caltrans' goal was to determine both the value of the sites and the possible effects of the proposed project on those resources. That information was used by Caltrans to design a highway project that would reduce destructive impacts on the historic places as much as possible.

In this effort, Caltrans staff encountered places both of little worth and of great value.

NO: NOT ELIGIBLE FOR THE NATIONAL REGISTER

Located beneath a Highway 101 overpass, an archaeological site was identified by characteristic signs of both historic and prehistoric living — a wooden shack, pieces of broken glass and ceramics, and soil containing bits of shell, animal bone, and flakes of stone.

Properties are listed on the National Register of Historic Places or the California Register of Historical Resources when they represent important and significant locations illustrating our cultural and historical heritage. Our federal and state preservation laws help Caltrans to protect such places, or if that is not possible, the information that they contain.

A vast amount of human activity has occurred throughout this area over the years: construction of a road, a creek crossing, and a highway embankment; the leveling of a hill; and ranching and everyday living since the early 1880s. Even today local activity is apparent. Testing of the site had to be tailored to the presence of horses, barns, corrals, homes, roads, and underground cables and pipes.

Not unexpectedly, Caltrans staff discovered that the prehistoric record beneath the ground had been almost totally destroyed by the last 150 years of human activity. Archaeologists found only a few ancient stone tools mixed with the historic debris. There were no informative features, such as ancient house floors or fire pits, nor did any materials remain that could disclose when the earliest people had occupied the site. Nothing remained to be learned about the prehistoric past at this site.

The written records, however, confirm historic occupation of this location ever since the first adobe house was built in the 1840s — and remodeled, replaced, expanded, moved, destroyed, and rebuilt. All that remained of the historic structures was a small shed. The only historic objects were unidentifiable and uninformative bits of metal, glass, and plastic. This site would not be proposed for the National Register of Historic Places.

This site beneath a Highway 101 overpass was not proposed for the National Register.

YES: ELIGIBLE FOR THE NATIONAL REGISTER

Twenty years ago another location in the project area had been recorded as both a prehistoric and historic site. During the test excavations, over 15,000 prehistoric objects were discovered, including stone and bone tools, shell ornaments and beads, and enough datable materials to reveal that people were living here about 3000 years ago. Buried in the middle of the site, an almost perfect floor of an ancient house was discovered. This resource can offer important information about the way ancient people lived in the area that we now call the southern Santa Clara Valley.

Here too, an adobe house may have been built by Mariano Castro, a retired Spanish soldier, who in 1801 had obtained a large land grant in the area. The house reportedly was destroyed when the rancho was sold. Historic ceramics and buttons were found at the site, however, suggesting the presence of a wealthy Hispanic family using foreign trade goods. No structural remains were discovered by the archaeologists in 1990, but one likely area is located in a working corral that could not be excavated.

This site is clearly important enough for inclusion in the National Register of Historic Places. Further research in the 19th century archives and records is necessary, though, to clarify the meaning of the historic archaeological finds in the area.

WHAT NEXT?

If the highway project cannot be designed to preserve the site, the best scientific techniques will be used to excavate and to recover the maximum amount of information possible. The goal of historic preservation is to save both information concerning our past, and where possible, the symbols that represent that past. Thus, when a historic place must be destroyed for our present needs, the property's information must be preserved by documenting the meaning and history of that property.

During the test excavations, over 15,000 prehistoric objects were discovered, including stone and bone tools, shell ornaments and beads.

A Simple Scenario

Caltrans policy is to avoid rather than damage a significant cultural or historic property. While avoidance might appear to be the simplest solution, the concerns of many interested parties can affect the project.

The Project

Shifting and flooding of a lagoon on the southern California coast and aging of the bridge that crossed the lagoon led Caltrans in 1989 to initiate plans for a new, wider structure. This design needed to accommodate the increasing number of motorists and bicyclists, as well as the speedy passage of emergency vehicles such as ambulances and fire engines.

Within a stone's throw of the bridge and directly within the area that would bear impacts from new construction are located two noteworthy historic places. The first is the remains of a prehistoric and historic village, Humaliwu, an important center for the Chumash Indians. The second is a magnificent historic structure, built in 1929, whose gardens and wall are located near the foot of the bridge. Both properties have been listed on the National Register.

Humaliwu

The site known as Humaliwu, translated from the Ventureño Chumash as "the surf sounds loudly," was a major center for the Chumash peoples, whose territory extended from the coast of San Luis Obispo County in the north to the Santa Monica Mountains in the south. Because of its geographical location on the coast and its political importance as a major canoe port, Humaliwu was a center for the trading of goods with other Chumash villages on the mainland and the islands of the Santa Barbara Channel, as well as with neighboring people to the south. Occupied for 5000 years, from about 3000 B.C. until well into California's Mission Period, Humaliwu has been invaluable in providing understanding of the prehistory of southern California. Even today, it remains a focus of culture for the Chumash people who still live in the area.

The Historic House

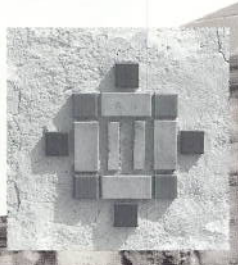
Located on this spectacular coastal site is an outstanding example of historic architecture. Purchased in 1892, the property and the surrounding 20 miles of beautiful coastline figured prominently in the development of the southern California coast, and were envisioned as an "American Riviera."

Years of litigation, locked gates, closures, and injunctions by the owner to protect her private property from public right of passage finally ended in 1933, when she granted the state a road easement through the property for construction of the Pacific Coast Highway.

This strong-willed woman presided over growing commercial ventures including a decorative tile manufacturing plant, which supplied ceramic tile for the Mediterranean and Spanish style homes that still typify southern California architecture and are represented admirably by the historic house itself. Under the leadership of her daughter, the Malibu coast later became permanently associated with the Hollywood film community. In 1968, the Department of Parks and Recreation assumed ownership of the house and surrounding grounds.

This house on the California coast was acquired by the Department of Parks and Recreation in 1968.

Part of the landscaping is a ceramic tile fountain that exemplifies the decorative tile manufactured for the Mediterranean and Spanish style homes that still typify Southern California architecture.



Details of the Garden Wall

THE DESIGN SOLUTION

When a design presented to the public proposed a new 100-foot-wide bridge, local residents, members of the associated historical museum, and State Parks officials were deeply concerned about protecting the garden wall adjoining the house. Because the wall is partly within Caltrans right-of-way and partly on State Park land, there was a possibility that the wall might be moved or torn down in the process of widening the roadway. Furthermore, apprehension was voiced by members of the local Chumash groups who were opposed to any excavation that might disturb unknown parts of Humaliwu. Finally, a local beautification organization was anxious to ensure that the design would be aesthetically pleasing.

Caltrans was able to design the replacement bridge that addressed all local concerns. An 88-foot-wide span within the existing right-of-way will accommodate increased traffic flow by including four lanes, a median for emergency access, and a pedestrian sidewalk. Construction will be limited to areas already covered by old construction materials, thus avoiding any remnant of the Chumash village. The new design meets aesthetic requirements. Furthermore, the portion of the historic wall within the Caltrans right-of-way will be stabilized and rehabilitated in accordance with historic preservation guidelines.

The Garden Wall

Working With The Native American Community

WORKING TOGETHER

People born, raised, and grown old in local communities know much about residents, occupations, events, and the use and abandonment of living places. Often this information is simply not available elsewhere. Walking over the land with a village resident stirs memories by visits to specific remembered spots and draws upon the oral traditions which Native Americans, in particular, have always used to preserve their history. This is one way in which Caltrans archaeologists and Native Americans work together. A second way is through scheduled oral interviews and conversations with local community elders, which may be conducted by a professional ethnographer trained in anthropological interviews. A third cooperative working relationship is the hiring of Native American advisors to observe excavations, examine recovered materials, and advise in the treatment of sensitive materials. In using any of these methods, Caltrans works closely and in cooperation with the local Native American council or advisory group.

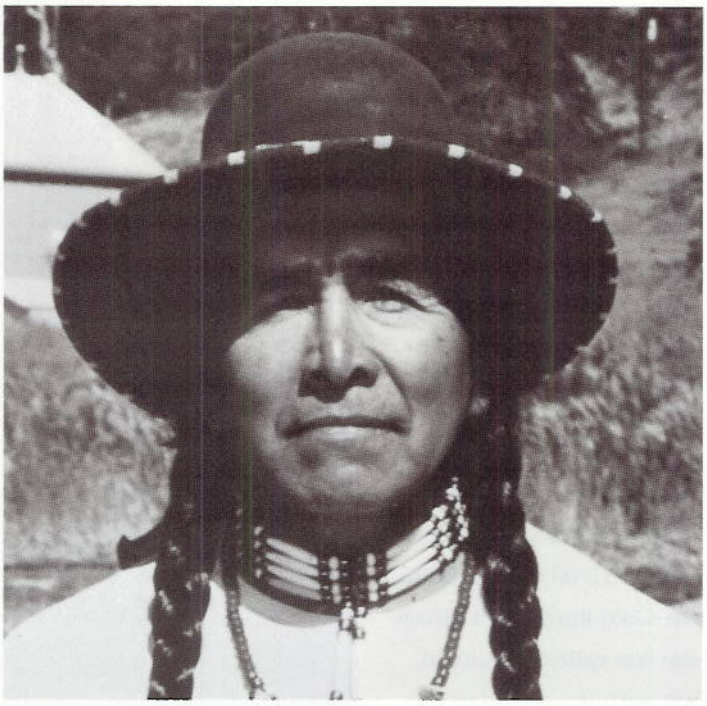
IF NO EXCAVATION, WHAT THEN?

The construction of a continuous left-hand turn lane on Highway 41 near the foothill community of Coarsegold was to take place in the vicinity of a well-known site. In 1991, test excavations within the highway right-of-way confirmed that disturbance caused by the original road construction and by 60 years of maintenance was extensive, and further excavation in this area would not yield any more information. The majority of the site, however, was located on private land, and was not available for investigation. With the agreement and assistance of the Chukchansi Yokuts Tribal Council of Coarsegold, Caltrans took additional steps to determine the value of future research for this location. Caltrans historians researched the available written records of the 200 years since the first Spanish expedition into these foothills of the Sierra Nevada. At the same time, a series of oral interviews with the local elders was arranged.

CHUKCHANSI HISTORY

Research revealed that the predecessors of the contemporary Chukchansi occupied this location for at least 1,700 years prior to the Gold Rush. This village site was called Peimtinao. But with the arrival of the miners, this area became a choice spot for working the placer deposits along Coarsegold Creek and was soon taken over by gold-hungry prospectors. Coarsegold rapidly became the largest mining camp in what is now Madera County. The community of Peimtinao was abandoned by the Chukchansi from 1848 until around 1854. In the 1880s, at least one Chukchansi family was recorded as living in a cabin on traditional land. Subsequently, this cabin was intermittently occupied by various families, including the grandmother of one of the Chukchansi consulted during the oral interviews. In the 1960s, the building was torn down, and the last occupant of Peimtinao left.

Many archaeological sites that are investigated during Caltrans projects are closely linked to Native Americans who may still live in the area. These people often are a direct source of knowledge about these places, which can be areas of traditional or social importance or of sacred custom and knowledge.



The Chukchansi Advisor, Harold Hammond, Sr.

A PLACE IN HISTORY

The limited information from the test excavation, the archival research, and the documentation from the oral interviews of unwritten history provided sufficient evidence that the site of Peimtinao was an important cultural and historic resource and was eligible for the National Register. It remains for future research to uncover the remaining pieces of this site's history.

WITH RESPECT

While Caltrans' policy emphasizes respect for Native American cultural practices and local and social histories, of particular importance is the Native American concern about the discovery and respectful treatment of ancestral remains. Recent federal and state laws specifically require cooperative consultation with Native Americans regarding burials. Preconstruction agreements are signed with those individuals who in state law are called Most Likely Descendants, to set forth the agreed-upon steps to be followed should burials be found during any phase of a Caltrans project.

The discovery of a Native American grave site is one of the most sensitive issues that archeologists deal with in the course of their work. In 1990, during the test excavation conducted for a widening of Route 20 near Williams in traditional Hill Patwin country, Caltrans archaeologists encountered a lone burial. The project engineer thought that the project could be redesigned to avoid the grave. So, at the Native American advisor's request, the burial was uncovered, recorded, and then reburied after the replacement of grave goods and the addition of modern offerings.

Caltrans staff struggled to produce a design that would leave the reburied grave undisturbed. To their dismay, they were unable to devise an effective plan that would skirt the site. Once again, in consultation with the Native American advisor, it was agreed that the burial would be removed and buried a short distance away. The advisor, the design engineer, and the project archaeologist together selected an appropriate location for the reburial. Fortunately, Caltrans was able to purchase the chosen spot with the sole purpose of reburying the remains. Purchasing of land for this purpose is not required by law, but Caltrans policy is to take wishes of the Native Americans into consideration as far as possible in responding to this difficult and sensitive situation.

Changing The Project

CALTRANS' PROBLEM

Route 96 in Humboldt County roughly parallels the Trinity and Klamath rivers, traversing the mountainous terrain of northern California. The highway runs through the Hoopa Valley Indian Reservation and crosses Hostler Creek on a bridge just north of the reservation. This bridge, built when Route 96 became a state highway in 1933, sags twelve feet below the surrounding land in a backwater area of the Trinity River. The bridge, not wide enough by current traffic safety standards, is also periodically buried by sediment during floods. To raise traffic above the flood level, Caltrans designed a new bridge and approach, with wider lanes and a more gradual grade.

THE COMMUNITY'S PROBLEM

The Hupa, one of the largest surviving Native Californian groups, occupy part of their original homeland, a twelve-square-mile reservation centered near the Trinity River. They are noted for their continuing observance of traditional religious practices which hold a place of importance and power in their life today. Of extreme significance in the Hupa religion are the World Renewal Ceremonies, one of which, the White Deerskin Dance, is observed every two years to avert disaster, disease, and famine. Tsmeta, one of the four sacred dance places used during the ten days of ceremonies, is located adjacent to the bridge and highway. Tsmeta is most accessible, particularly for older people, and ceremonial dances here have attracted up to 5,000 participants. Respect for the natural setting, accessibility to the grounds, and space for participants and for parking are all important issues for the Hupa community.

DESIGN 1

In 1984, the original project design was considered the best possible engineering solution for the new bridge and for straightening the highway. When the Caltrans staff presented the plan to the Hoopa Valley Business Council, however, they found the design unacceptable. The Council expressed concern that the design infringed upon ceremonial ground, and with the road moved closer, a vegetation barrier that shielded the dance ground might be destroyed. Participants at the meeting agreed to continue communications while Caltrans redesigned the project in response to the community's concerns.

DESIGN 2

The second Caltrans project design proposed solutions to the problems raised by the first plan. This design included a retaining wall that required a ten-foot strip from the ceremonial grounds for construction and maintenance. A road looping under the new bridge, with a walkway for foot traffic, would provide continuous access to the dance site. Newly elected members of the Council were concerned about the impact of the construction on the natural setting and asked for an environmental assessment of the effects. Further, they stated that involvement of any part of the dance ground during construction of the new bridge and highway would be unacceptable and non-negotiable. Once again, Caltrans and the Council agreed to maintain communication while Caltrans would attempt to meet the community's concerns.

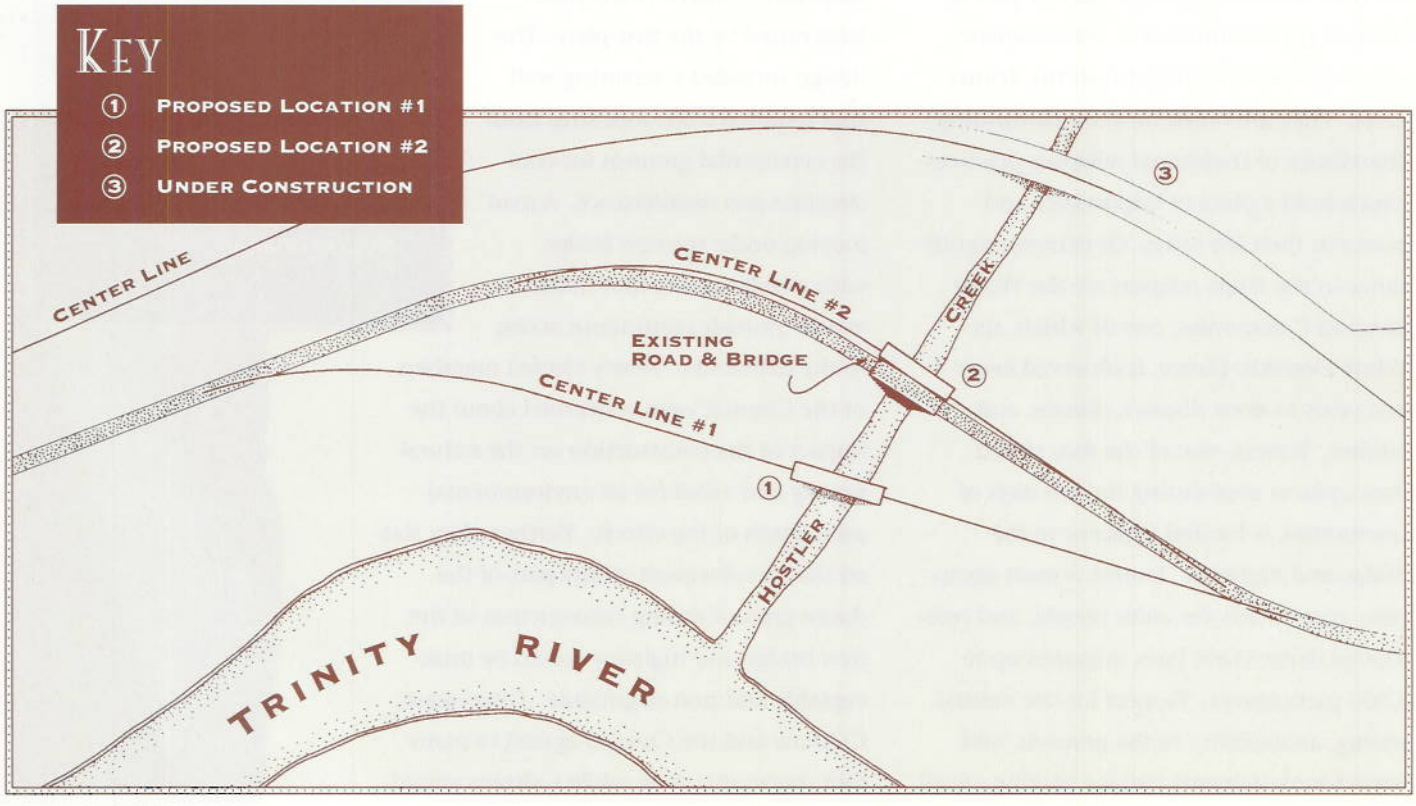
> *"A traditional cultural property is a place significant for its associations with the customs, practices, or traditional beliefs of a community. Rooted in a particular community's history, such properties are vital to the continuing identity of that community."*
>
> **(National Register Bulletin 38)**

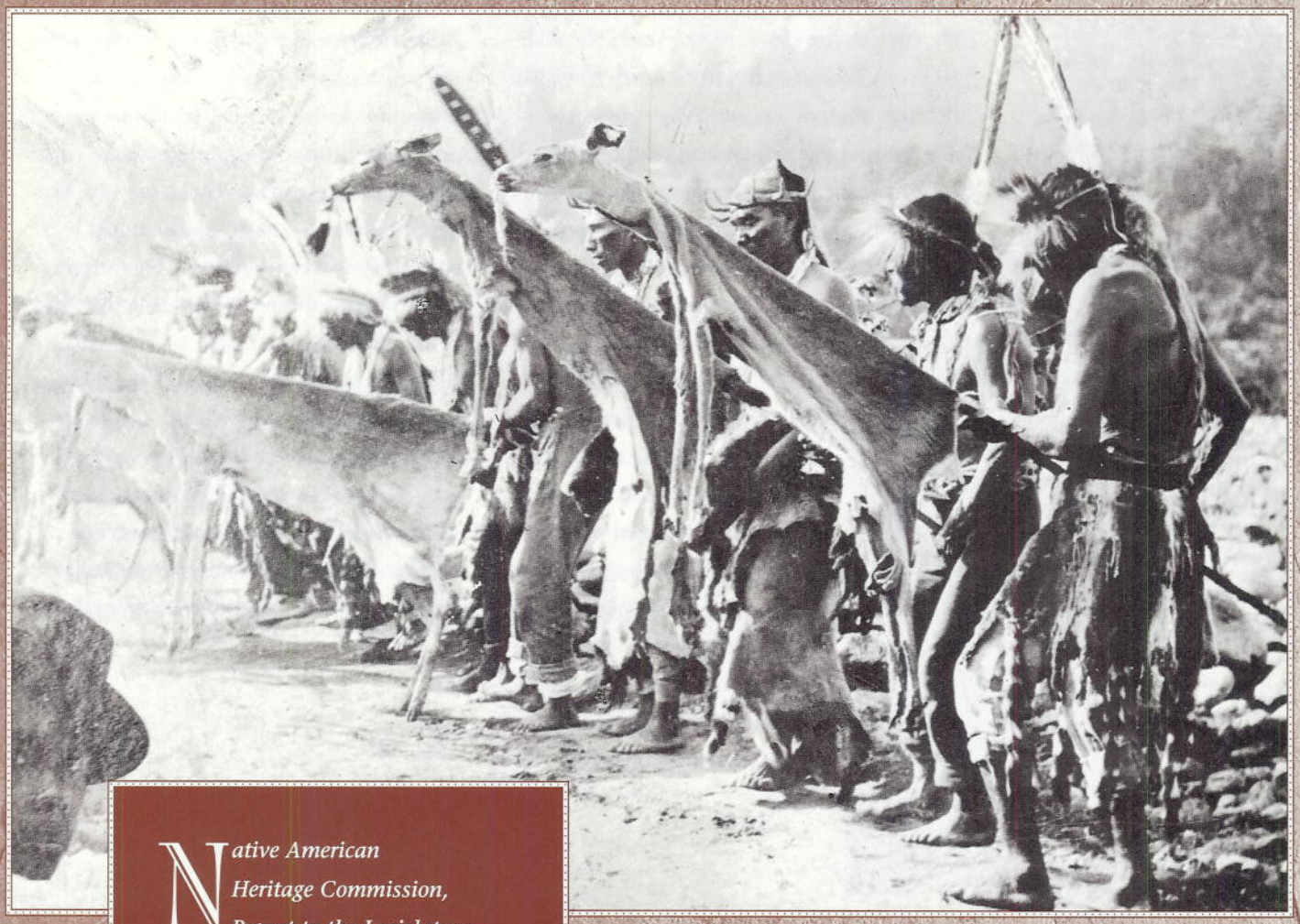
DESIGN 3

A third project design, presented by Caltrans to the Hoopa Valley Business Council, proved acceptable to all participants. The realigned road would be moved 80 feet, providing more space for Tsmeta and eliminating the need for a retaining wall. Under the new plan the existing bridge would be left in place during construction to provide foot and vehicle access to the dance site and would be relinquished to the reservation upon completion of the new bridge. Furthermore, a series of special contract provisions were incorporated into the contract specifications: a temporary fence to protect the dance site during construction, safety signs, measures for erosion control and dust abatement, and a cessation of all construction when the ceremonial grounds were in use.

MEETING THE COMMUNITY'S NEEDS

Whenever a Caltrans project is planned, there may be a number of sometimes conflicting public interests to be met — transportation requirements which include safety and engineering considerations; the needs of affected local communities which often involve social and economic concerns; and environmental and historic preservation responsibilities. Thus projects change as Caltrans responds to project requirements and the interests and concerns of those who will be affected. During the modification of the Hostler Creek Bridge project, the concerned parties — the Caltrans staff and the Hoopa Council who represented community interests — maintained a continuing, open communication and flexibility that resulted in a design solution that met the needs of the local community and the traveling public.





The Hupa Indian White Deerskin Dance, 1906.

Native American Heritage Commission, Report to the Legislature: "Important to California Indians are those places of traditional or spiritual or social importance, areas important in either folklore or legend, or areas attributed with special or unique powers of sacredness. To ensure the Native American culture is not lost, it is essential for Indians to have continued access to traditional sacred places, many of which are located on lands now owned by non-Indians or under control of various public authorities."

Surface Remains Are Just Part Of The Story

Archaeological inquiry has three basic interrelated concerns: the establishment of a chronological framework; the reconstruction of past human lifeways; and the explanation of cultural processes.

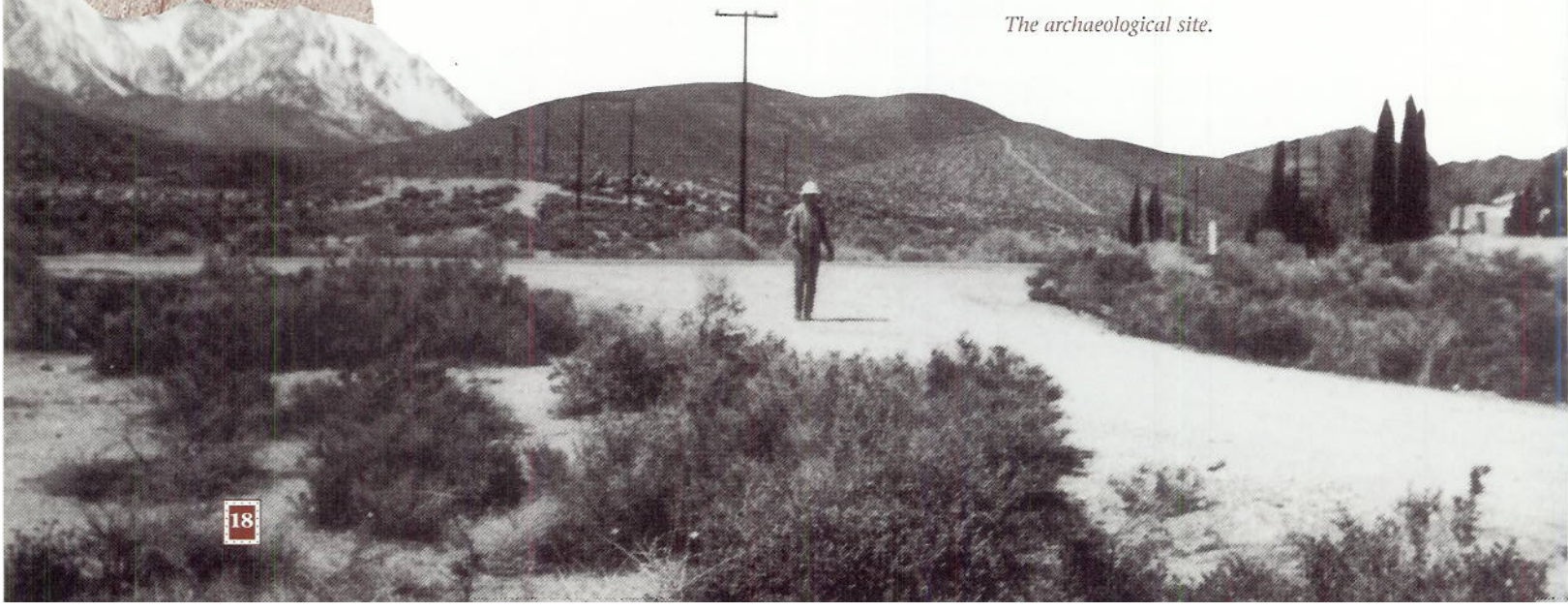
Of these the first is most fundamental for the comparison of cultures and the explanation of culture changes.

THE PROJECT

On the eastern slopes of the Sierra Nevada, Highway 395 stretches from north to south through high desert and long valleys that are rimmed on the east and west by snow-capped mountains. Originally, this route was only a two-lane road, but in recent years the highway has been widened in several locations to serve increased traffic and an occasional growing community. Prehistoric people also traveled this route, and from time to time, evidence of that earlier occupation is encountered along the present highway. One such large site lay within the area of impact for a highway widening project and could not be avoided.

LOOKING AT THE SURFACE

At first glance this site in Inyo County was not impressive. Indeed, many similar important archaeological locations are not noticeable, either at casual glance or with more careful scrutiny. This large site, first described in the 1940s, had changed considerably over the years. The original construction of the highway, the building of an adjacent trailer park, a stream diversion, and power lines have all affected the surrounding landscape. Still, surface investigation showed remnants of prehistoric activity: pottery fragments, flakes from stone working, fragments of bone, and other indications that at one time in the distant past, this land served other people.



The archaeological site.

BENEATH THE SURFACE

Remarkably in 1986, excavation proved that the surface disturbances had not crucially altered the placement of ancient materials buried beneath the surface. This was truly fortunate, for these undisturbed tools and their fragments had accumulated and survived in clear and distinguishable patterns at this ancient occupation site. The clarity of the record — who had lived here, how, and in what sequence — has added greatly to our knowledge of the past 7,000 years of prehistory in the Owens Valley.

Even an apparently unimposing area of the site was discovered to be a repository for the remains of ancient structures with floors, storage and refuse pits, and fire-hearths. An ample, well-preserved assortment of objects made or used by inhabitants of the site included over 9,000 items, ranging from seed milling equipment and hunting gear to bone tools and shell ornaments, as well as fragments of pottery and basketry. Caltrans archaeologists also found generous remains of shells, animal bones, seeds, nuts, tubers, and roots.

A STORY UNFOLDS

Excavation revealed that over a span of 7,000 years the site had hosted a sequence of four cultures whose peoples left recognizably different archaeological patterns of hunting, plant collecting, tool manufacture, and living structures. Archaeology alone cannot tell us the languages spoken by these people, their social life, or their world view. But at this site, the questions that can be reasonably asked — when did these people live here, how did they provide for themselves, and when and why did they leave the area — can be partially answered. We thus have come closer to the goal of all archaeology, the reconstruction and understanding of human history.

Patterns Of Site Use Through Time

The Period	Years Before Present	How People Lived
Lake-Mojave-Little Lake *Little Lake Point*	7000-3200	Small groups of large game hunters. Sporadic camping, no structures, no milling equipment, large dart points.
Newberry *Scapula Smoother*	3200-1350	Regular and seasonal occupation, partitioned houses with caches and hearths. Extensive milling equipment. Large and small game, varied plant foods, abundant bone and stone tools.
Haiwee *Rose Spring Point*	1350-650	Sporadic visits of hunting and collecting parties. No structures. Milling equipment, small flaked stone tools.
Marana *Conical Pot, Reconstructed*	650-historic	Both short- and long-term use, with summer storage houses. Small station in larger established village network. Use of bedrock milling. Pottery and baskets. Similar to historic Owens Valley.

Expect The Unexpected

Cultural resources are sometimes discovered during construction. Strategic procedures for dealing with those discoveries protect the resources and the information they can yield, while ensuring timely completion of the project.

THE PROJECT

In 1989 a bridge in San Luis Obsipo County which spanned a creek's outlet to the ocean was being replaced. This construction scene on Highway 1 was taking place at a familiar location on this coastal route that traverses the state from north to south, one where bridges arch across the canyons and gorges where rivers and creeks drain from the coastal mountains into the ocean.

The heavy equipment impressed the eye — the backhoes, graders, earthmovers, bulldozers, frontloaders, and trenchers moved the earth in a planned manner while highway traffic continued overhead on the old bridge. Near one earthmoving operation, two people followed a backhoe cutting through an embankment. The figures stooped and bent, picked up clods of dirt, examined and discarded them, and then trudged on.

THE MONITORS

These people were archaeological monitors: a Caltrans archaeologist and a member of the local Native American community.

Monitoring the excavations in 1966.

Because this construction was taking place near a site that had been excavated in the 1960s in anticipation of a highway widening project, care was taken that areas slated for impacts did not retain previously undetected remains of the site.

Since the area that Caltrans selected for the new bridge had been seriously disturbed during the earlier construction, it was anticipated that nothing of value would be found. Nevertheless, following Caltrans' procedures, a careful surface survey was made, supplemented by coring to test for buried deposits. In addition the monitors kept their trained eyes open for possible human remains or unexpected archaeological materials.

Excavation, 1989.

DISCOVERY

Across the creek from the site, Caltrans construction proceeded as planned with the digging of a 40-by-13-foot trench for a bridge support. About a third of the trench had been excavated to a depth of nearly 10 feet, when operations stopped. In the sidewall of the trench, fragments of shell and animal bones, fire-cracked rock and flaked stone appeared — fragments that record early human occupation. These residues had remained undetected until this moment because 10 feet of fill dirt from construction long ago had buried the site.

Trenching was halted at once, and Caltrans developed a plan to recover material from the new site, a plan that was coordinated with the State Office of Historic Preservation and the President's Advisory Council on Historic Preservation. Subsequently, this plan was put into action by a team of Caltrans archaeologists, while other tasks in the construction of the new bridge were being carried out. The 10 feet of overburden were removed from the rest of the trench by a backhoe. Next, six archaeological excavation units were measured out, and the deposit of dirt and material was hand dug and shaken through screening to a depth that no longer showed archaeological material. With the completion of the excavation by hand, machinery was brought in once more to excavate the remainder of the trench, closely observed by the monitors. Construction was resumed in the absence of recovery of cultural remains.

What was learned from this discovery? The archaeologists expanded our knowledge of a people that lived in this region at least 3,000 years ago. And close cooperation between the historic preservation agencies and members of Caltrans staff solved an unexpected problem for project completion.

Drytown Revisited

Historical archaeology gains access to the past through a combination of evidence "the spoken word, the written record, observed behavior, and preserved behavior."

(R. Schuyler 1977)

Layers of History

Not all archaeology is concerned with the distant, prehistoric past. Historical archaeology deals with a past recent enough that there are written and other records — public and private documents, oral histories, pictures — that can provide a context for the archaeological remains. These records may illuminate the sequence of events that occurred in particular places, as well as help reconstruct the kinds of changes through time that have been inflicted upon that original base.

One of the goals of historical archaeology is to fill in the gaps in the documented record. These gaps may be a result of missing records, or more importantly of missing interest in the less well documented ethnic groups in California's history. When Caltrans began a project that would ultimately require the widening of Highway 49 through Drytown in Amador County, historians and archaeologists began investigating what was known of its history.

Drytown

Gold mining began in 1848 at Drytown, a town site near the Mother Lode, located on the main supply route between California's northern and southern mining areas. Between 1850 and 1870 this bustling Gold Rush town had a population that came from astonishingly varied national backgrounds. The 5,000 people of Drytown in 1855 included Mexicans, Chileans, Europeans, Canadians, Americans, and Chinese.

Although its population rapidly diminished after the 1850s with the decline of surface gold mining, Drytown did not become a ghost town like so many mining camps, but remained occupied throughout the 19th century. It is now economically focused on agriculture, cattle ranching, wine making, and tourism.

The Chinese Community

Block 8, within Caltrans' construction area, is what remains of a former city block in Drytown's central Chinese district. U.S. Census records showed that in 1860 the Chinese constituted 44% of Amador County's Township No. 5, which included Drytown. Most were listed as miners, but the lists include everything from barbers, butchers, and bakers, to merchants, saloon-keepers, and physicians. Caltrans researchers found a listing of at least one washerwoman, marking the rare appearance of a Chinese woman in a nearly all male mining community.

Altogether, these Chinese added up to 5,000, probably a low figure, since census takers routinely ignored Chinese in their counts. The Chinese, too, often hid from census takers since a tax had been levied on foreign miners in California. Amador County's population declined after 1860, but Chinese inhabitants still accounted for 21% of the Drytown population in both 1870 and 1880. There were Chinese still living in Drytown as late as 1910.

BLOCK 8

In 1986, historical archaeologists working for Caltrans sampled a portion of the archaeological deposits on Block 8, in order to find out if anything remained from early Chinese occupation there. These excavations would also help determine if what was left retained any integrity or if it had been destroyed by other activities on the block during the past one hundred or so years.

Most of the objects recovered in the excavations were domestic — personal and household goods, clothing, ceramics, coins, furnishings, and housewares. They were a mix of Asian and Euroamerican materials reflecting the occupation of both groups and the use of many Euroamerican items by Chinese residents. The Chinese, here as in many other areas, participated in two separate cultures simultaneously. While they were involved in a trade and commercial network with Chinese enclaves in other communities and with mainland China, they also maintained professional and commercial relationships with their non-Chinese neighbors.

WHAT NEXT?

Archaeological remains on Block 8 had been seriously affected and altered by the construction of the original highway, land leveling, building, earth moving, modern trash dumping, and years of intensive bottle hunting. Nevertheless, the investigation provided new information and materials for comparison with what we know from the few other excavated Chinese mining camps in California's gold country.

Bamboo Grove pattern cup. Translation from Chinese: "Beautiful female person slim like the bamboo when going to sleep can see the moon and hear the wind."

Drytown, 1890s.

Special Studies – Obsidian

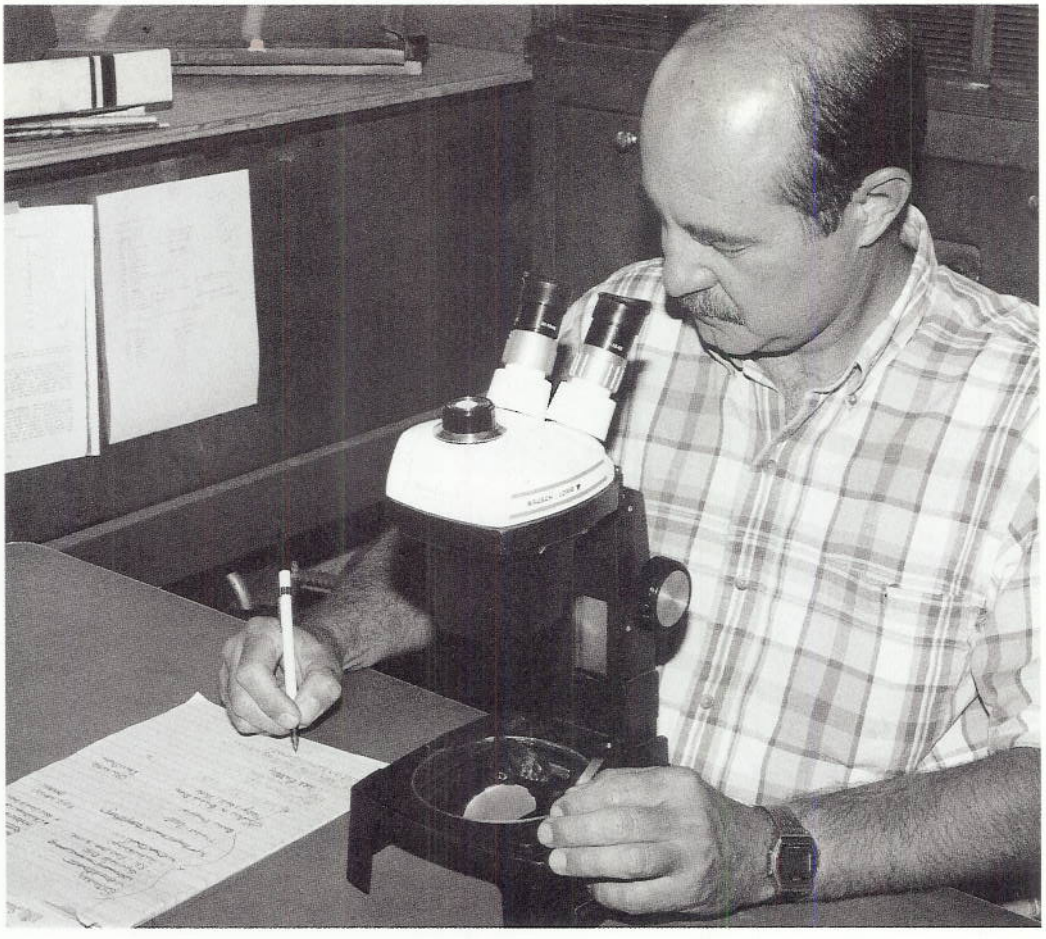
The outcome of this Caltrans construction project contributed a valuable piece to the complex puzzle of California's past.

WHO DOES THE WORK?

When Caltrans determines after a careful review of alternatives that a project cannot be designed to avoid a valuable National Register property, a data recovery plan must be completed, including a research design, fieldwork, analyses, and report writing. Although all Caltrans districts have staff archaeologists, their time is normally occupied with surveys and small-scale test excavations. Therefore, some required excavations, because of their size and complexity, may be contracted to universities or to qualified archaeological consulting firms.

SPECIAL STUDIES

A large excavation will need a number of "special studies" to fully explain the archaeological picture. Specialists trained in various specific kinds of technology and research are employed. Most archaeological projects routinely analyze mammal and fish bones and shell. When available, material for radiocarbon dating is sent to special laboratories. Some sites require tree-ring analysis, geological and pollen studies, or obsidian analyses.



Analysis in the Obsidian Laboratory

THE SITE

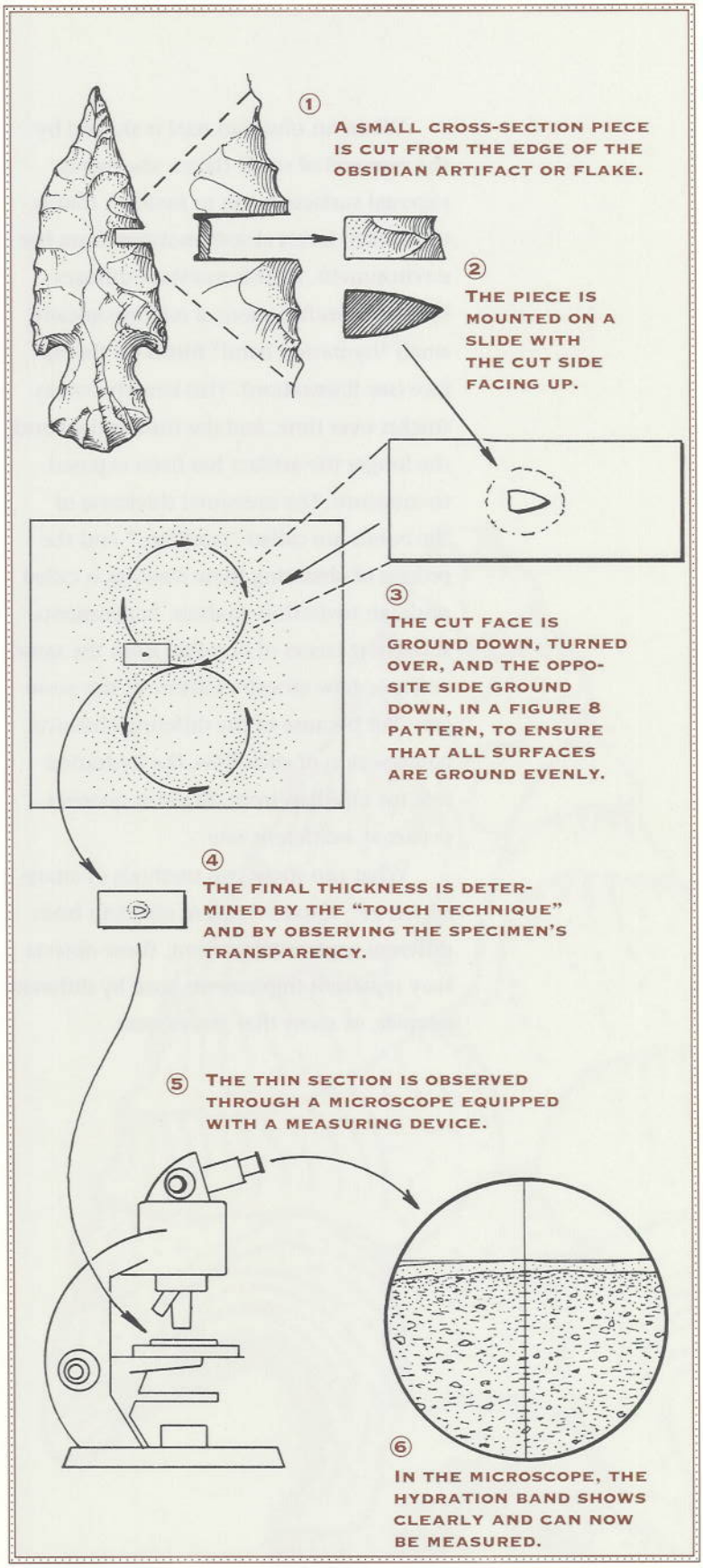
The proposed construction of a road near Lower Lake could not avoid a a National Register eligible site within the Anderson Marsh Archaeological District in Lake County. Fully 80% of all excavated material was obsidian. These pieces were interrelated parts of a system of production, use, and discard. At this site the crucial special studies were obsidian analyses — source determination and hydration.

WHY OBSIDIAN?

Obsidian is a volcanic glass that can be easily chipped to make edges that are exceedingly sharp. In regions where it is available from old volcanic flows, obsidian is a material commonly found in prehistoric sites in the form of cutting and piercing tools, chipping waste, and incomplete implements. Importantly, obsidian can provide information on how old a tool is, and by association, how old the site is.

OBSIDIAN SOURCES AND DATING

Obsidian pieces from different lava flows contain different proportions of trace elements such as lead, yttrium, and zirconium. Thus the original quarry for each piece of obsidian can be identified through chemical identification of varying percents of these trace elements. This process is called obsidian source analysis.

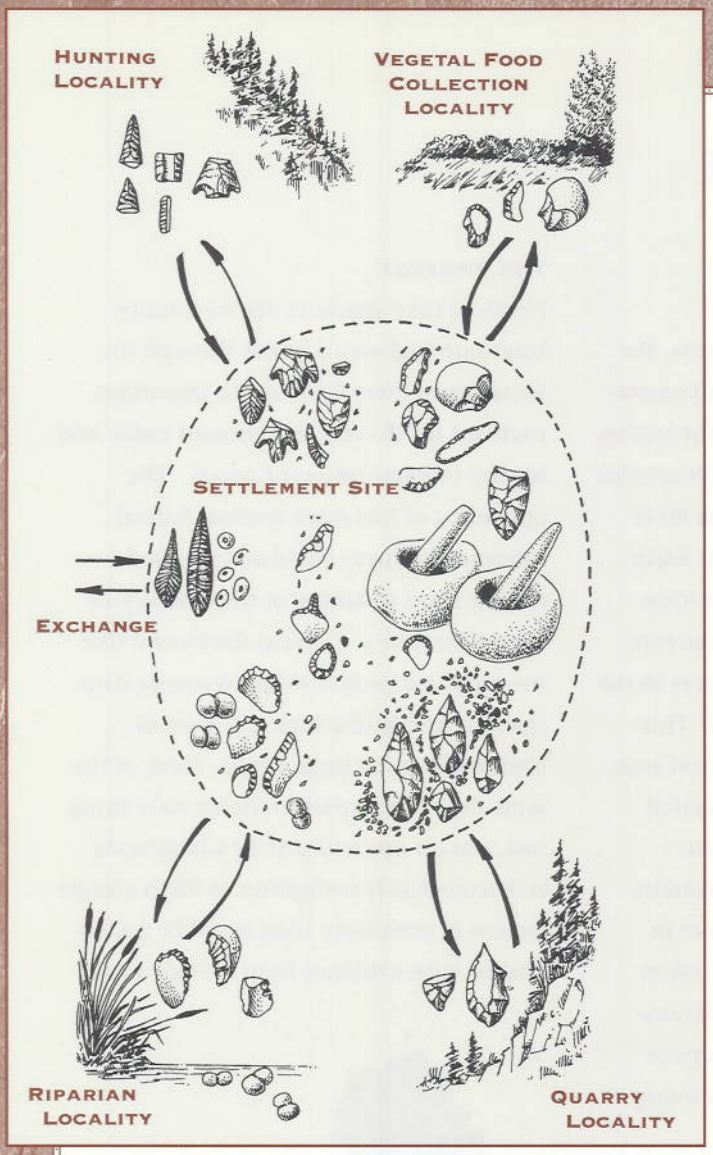


When an obsidian tool is shaped by the removal of small flakes, the newly exposed surfaces begin to hydrate, that is, the broken facets absorb moisture from the environment. As this moisture diffuses into the obsidian piece, a microscopically small "hydration band" forms on the surface (see illustration). This band becomes thicker over time, and the thicker the band, the longer the artifact has been exposed to moisture. The measured thickness of the bands are called "readings," and the process of obtaining these readings is called obsidian hydration analysis. Experiments show that pieces of obsidian from the same volcanic flow absorb moisture at the same rate. But because of the differing chemical composition of each flow, the hydration rate for obsidian from different quarries occurs at a different rate.

What can these two methods of analysis tell us? If tools made of obsidian from different sources are present, those objects may represent implements used by different peoples, or show that pieces were exchanged or traded. When pieces from the same source show different hydration band widths, the pieces with wider bands can be older and can indicate an approximate age or time span for the site where they are recovered. Consistent hydration widths for an artifact or tool type can give an approximate age for those tools which then can be used as "time-markers" at other sites.

OBSIDIAN AT LOWER LAKE

A portable obsidian hydration laboratory was used during the archaeological fieldwork in 1982 to analyze 70 samples of various obsidian pieces. This marked the first time in-field analysis on obsidian had ever been performed, and provided valuable information on features, artifact types, and strata, as a basis for important field decisions. When these samples were combined with the 407 readings that were performed in post-field analysis, relative time periods for the site were documented. These studies provided a substantial contribution to archaeological study and research.



Settled peoples took obsidian pieces from their quarry to their village where they manufactured, used, exchanged, and discarded their tools and implements.

Mobile peoples carried convenient-sized pieces of obsidian from the quarry as they moved on their hunting and gathering rounds. They made tools as they were needed and discarded them primarily when they could be replaced or bettered at a different quarry.

The Big Picture

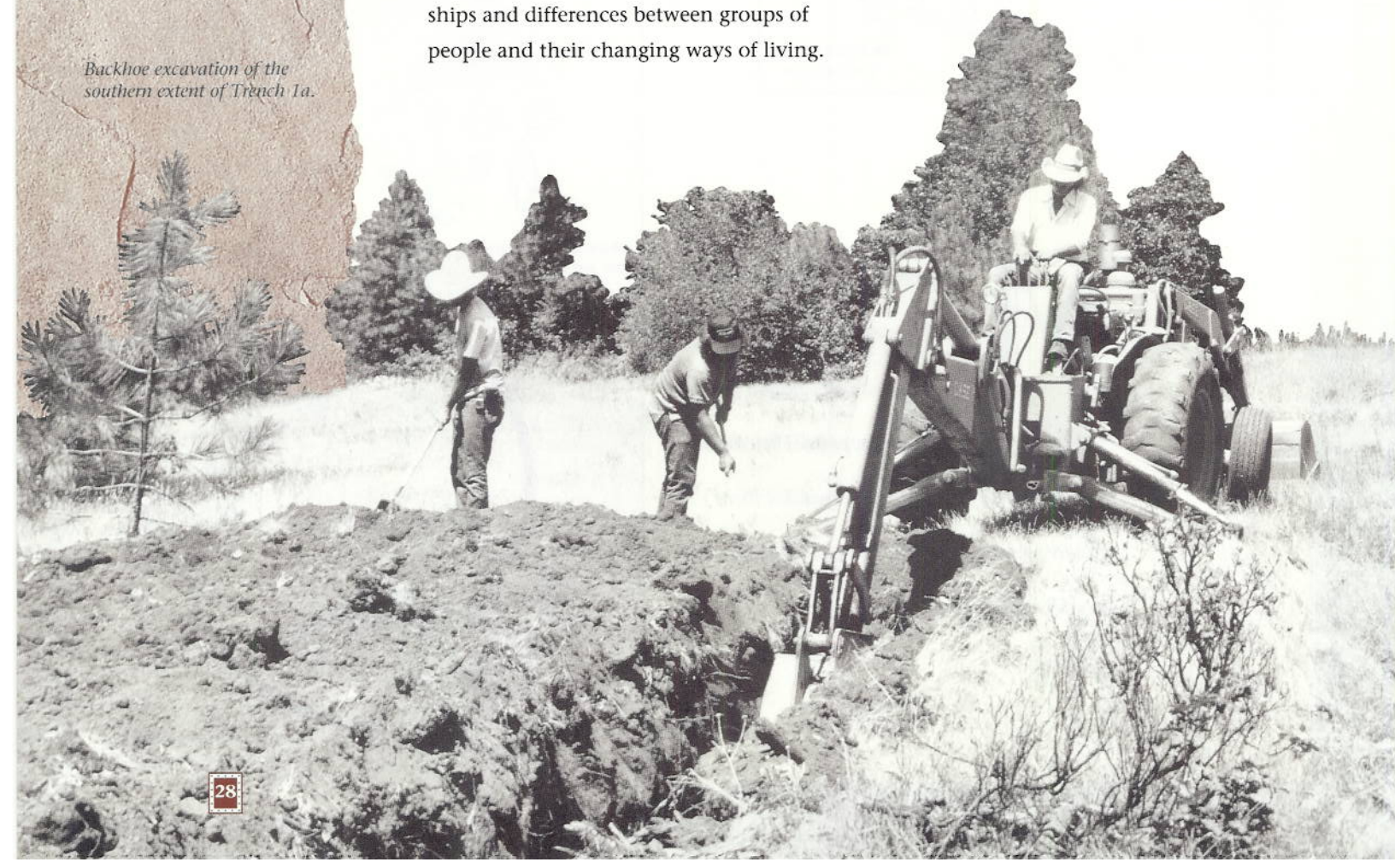
A Caltrans project to improve a contemporary California highway unearthed a story of prehistoric travel and life in a river canyon corridor.

THE SACRAMENTO RIVER CANYON

In prehistoric California, the Sacramento River Canyon was a major cultural corridor joining the Central Valley with interior Oregon, the Columbia River Plateau, and the Great Basin. Both people and their ideas moved through this canyon, sometimes leaving traces in the archaeological record. This corridor was a peripheral area, distant from the populated prehistoric villages of the northern Sacramento Valley. Because the record in the canyon is less complex than that in more populated centers of culture, often there can be a clearer picture of relationships and differences between groups of people and their changing ways of living.

THE PROJECT

North of Lake Shasta in Shasta County, Interstate Highway 5 winds through the Sacramento River Canyon, an important route for north- and southbound traffic and for the transportation of goods. The upgrading of this route to meet federal interstate highway standards required redesign and widening of the roadway in several locations. Caltrans discovered that the proposed project would seriously damage four prehistoric sites that were of National Register importance. Here, at the same time transportation needs were being met, was an opportunity for a large-scale archaeological investigation to fill in a larger picture of prehistory than could be accomplished with evidence from a single site.



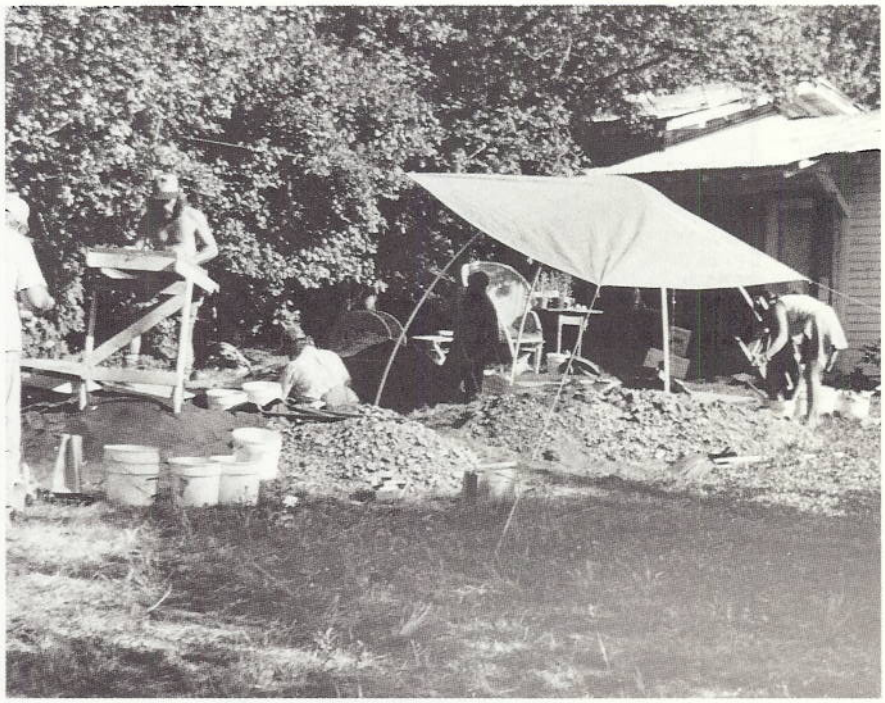
Backhoe excavation of the southern extent of Trench 1a.

A STAGED APPROACH

The strategy devised for fieldwork in 1985 proceeded in stages designed to rapidly and efficiently identify those buried areas of each site that contained materials left by a single group within a single period of time. Starting with backhoe trenches to locate the most productive areas, the archaeologists moved to excavation by hand to retrieve the artifacts that related to periods of time and types of use. Samples of smaller tool fragments and food remains were recovered by means of washing residues through fine-meshed screens. The analyses of the recovered materials — over 200,000 pieces of chipped stone, 20,000 stone tools, and a wide variety of plant and animal remains — has helped to recreate a vivid picture of human life in the canyon for the last 5,000 years.

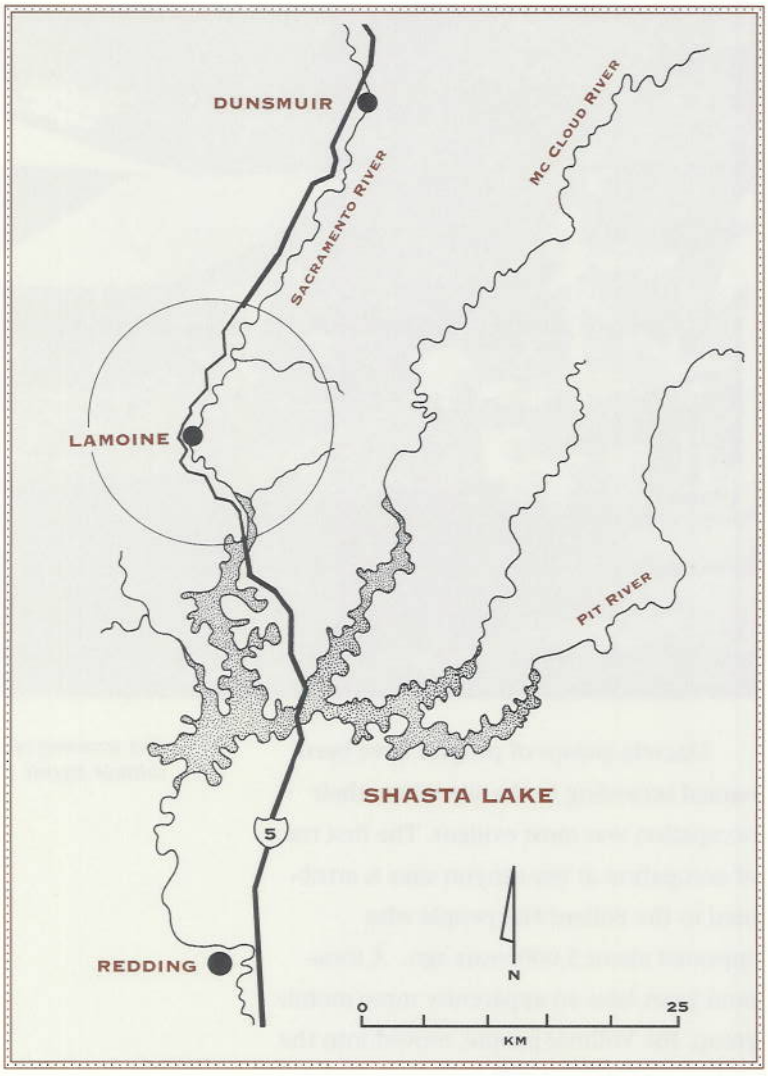
THE PEOPLES OF THE SACRAMENTO RIVER CANYON

During a large part of the 10,000 years of California prehistory, people lived in a mobile lifestyle, moving from place to place following the seasons as foods became more plentiful. This movement is called the "seasonal round," and in the canyon environment, it proceeded from the time of year and the region where salmon were abundant, to locations where ripening seeds clustered, to favored stands of pine trees for pine nuts or of oaks when acorns were ready for harvest, and to annual hunting grounds. The people camped, processed seasonal foods, and moved on, to return again during the yearly round. More permanent home bases were used from time to time, but never as commonly as in neighboring regions.



Wet screening of excavated cultural deposit.

Discrete groups of peoples have been named according to the site where their occupation was most evident. The first trace of occupation at the canyon sites is attributed to the Pollard Flat people who appeared about 5,000 years ago. A thousand years later an apparently more mobile group, the Vollmer people, moved into the region, and about 1,900 years ago, were followed by the Mosquito Creek people who brought an important technological innovation, the bow and arrow. All these people held some traits in common. Basic foods for all groups were the acorn and salmon; stone tools were similar; and obsidian from the Medicine Lake Highlands source was always the preferred tool material.



Despite these general similarities, each of these groups had living styles that were clearly distinguished from each other. These different styles, for example, reveal that for over 2,000 years the Pollard Flat people and the Vollmer people alternatively used the same region during the same general time span, probably during different seasons — perhaps for decades at a time, moving back and forth as their territorial boundaries fluctuated. Only the Mosquito Creek people remained until historic times, using the sites as hunting and collecting bases. About 1,000 years ago, the historic Wintu people expanded into the canyon, occupying different sites than their predecessors.

AN UNEXPECTED LEGACY

The Pollard Flat people left an unexpected and unusual signature of their occupation when they disappeared from the canyon sites. This legacy is the most extensive and unusual sample of incised stones, or "portable rock art", recovered anywhere in North America.

One thousand five hundred and sixty pieces of slate or siltstone had been roughly shaped and then incised with a series of lines that occur in a number of different patterns. These stones were associated only with the Pollard Flat materials. Not only is there no known evidence of such objects among co-existing or earlier groups in the area, their production vanished with the Pollard Flat people. Their use remains unknown, but they are of a convenient size to be carried or worn as amulets, possibly as a sign of group identity. Alternatively, they may have been boundary markers to signify territorial rights to incoming groups. Whatever the use of these objects, this collection will provide a valuable contribution for future comparative study of similar objects in worldwide contexts.

The contributions to regional prehistory, to the knowledge of prehistoric lifeways in the Sacramento River Canyon, and to archaeological techniques in the excavation of large samples have been vastly advanced by the project within the canyon.

Public Participation

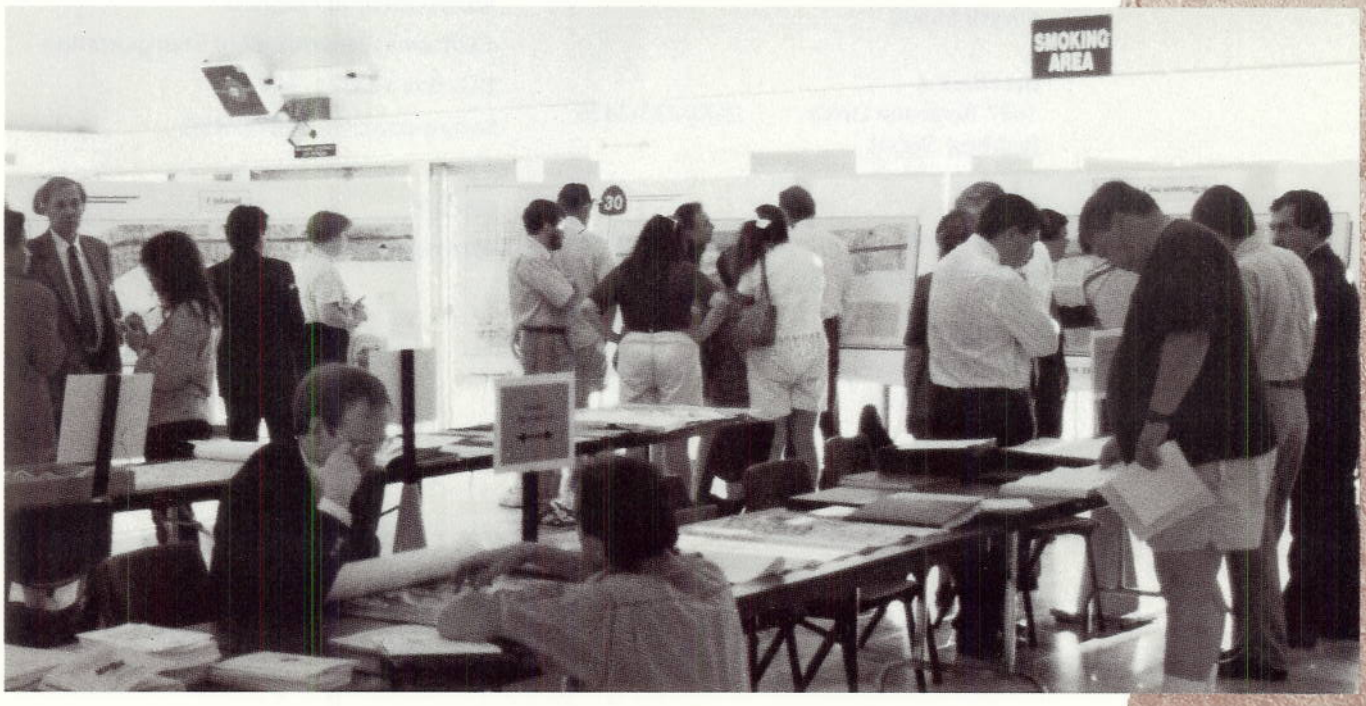
To address issues, Caltrans has to know about them, and the sooner the better. It is much simpler to change a project in the earliest planning stages than to halt construction already underway. Caltrans holds public hearings when projects are proposed to learn if there is community opposition, if local values have been overlooked, or if other effects should be taken into account.

How can you participate? You can attend public hearings or respond with written comments when project alternatives are presented. Notices of opportunities for public comment will be published in local papers as the project planning progresses. Other less formal contacts are welcome. Whether in favor or in opposition, study the issues and weigh the arguments. A reasonable, logical approach supported by evidence is the most effective way of providing input.

All comments will be considered and all viewpoints taken into account when project decisions are made, in accordance with state and federal law and Caltrans policy. Clearly, not everyone's ideas can be accommodated, but public comments are a valuable part of the planning process, and they will be heard. They often result in changes that produce a better transportation project for California.

For information on specific projects, contact the Caltrans district office in your area. For a district directory, see the following page.

Caltrans is a public agency, working for the people of California by building, operating, and maintaining the state's transportation system. Sometimes this mission comes into conflict with other public interests or private concerns. Then, open communication and public discussion are essential to reach decisions that will be in the best public interest.



The informal nature of the open forum meetings allow the public to gather information about the project at their convenience.

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