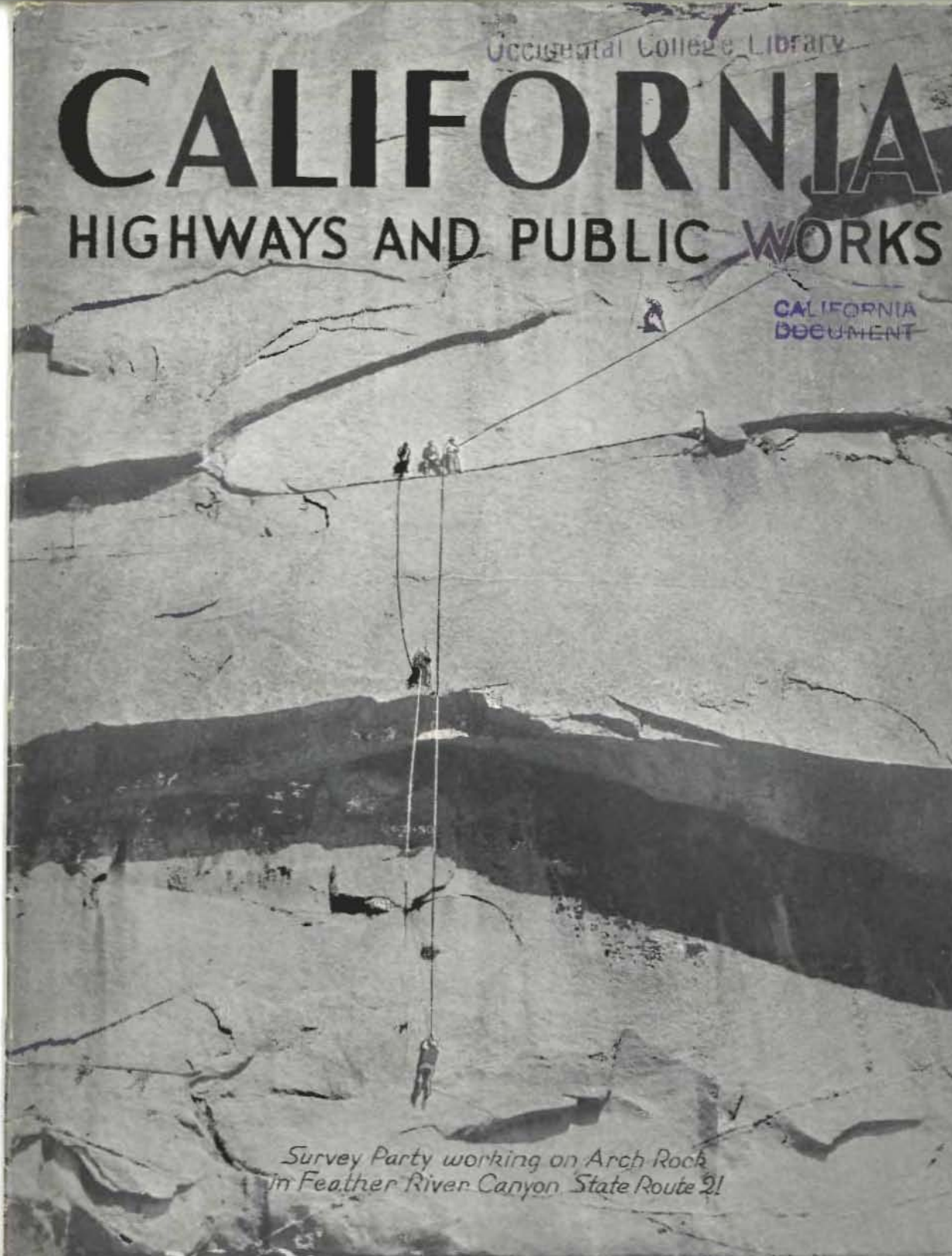


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CALIFORNIA

HIGHWAYS AND PUBLIC WORKS

CALIFORNIA
DOCUMENT



*Survey Party working on Arch Rock
in Feather River Canyon, State Route 21*

Official Journal of the Department of Public Works
JANUARY • 1935

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\$26,498,980 for Highway

Construction of Major Projects

In Biennial Budget

For 87th and 88th Fiscal Years

By HARRY A. HOPKINS, Chairman California Highway Commission

THE biennial State highway budget for the 87th and 88th fiscal years, July 1, 1935, to June 30, 1937, was adopted by the California Highway Commission on December 27, 1934, and presented to Governor Merriam.

The budget shows that after deductions for maintenance of our 14,000 mile State highway system, for the one-quarter cent allocation to cities, rights of way, joint highway districts, engineering, minor improvements, contingency reserves and administration, the total amount for major project construction throughout the State will be \$26,498,980.

The budget includes an estimate of the revenues which will become available for all State highway purposes in this next biennial period under present constitutional and legislative provisions. These estimated revenues are allocated for contemplated expenditures during the biennium in accordance with the various legal enactments governing such expenditures. They are allocated to the northern and southern county groups and to primary and secondary highways.

The total estimated revenues for the next

biennial period from all sources for State highway purposes is \$61,393,459.70 compared with \$70,136,000 for the current biennium. The sources of this total revenue are the motor vehicle fuel tax, or gas tax, motor vehicle license fees, and Federal aid appropriations made by Congress.



HARRY A. HOPKINS

Gas tax and motor vehicle fees, which are provided by State legislation, form the major portion of these estimated revenues. In previous bienniums an additional source of revenue existed, known as the highway transportation tax. This source of revenue has been eliminated by the enactment of the so-called Riley-Stewart Plan of taxation.

The estimated revenue produced by the gas tax is \$46,500,000 for the two-year period. One-half of the net motor vehicle fees, after deducting the amounts necessary for the support of the Motor Vehicle Department and the California Highway Patrol, is estimated to be \$5,308,000 for the two-year period.

Various enactments adopted at the 1933 session of the Legislature have occasioned material reduction in the revenues available for State highway purposes. The elimina-

(Continued on page 23)

\$3,000,000 Needed to Make Bridges on Secondary Roads Safe for Legal Loads

By STEWART MITCHELL, Constructing Engineer of Bridges

ALL ROADS acquired during the development of the State highway system may be grouped into two general classes: (1) new traffic arteries built on modern standards of construction, either serving sections where there were no existing roads or replacing inadequate highways, and (2) existing highways which have been taken over for maintenance with such relatively minor improvements as will permit them to serve the existing needs in a fairly satisfactory manner.

Bridges on roads which come under the second classification furnish many serious problems. It is quite true that there are bridges on roads taken over from the counties that were capably built to standards at least approximating our present standards, and these bridges are still capable of safely carrying present day traffic.

However, due to limited inspection, and in a few cases to faulty design, there are numerous instances of rapid deterioration or incipient failure. These cases are causing concern as to their safety now or in the not far distant future.

SOME MADE SERVICEABLE

Very often an inspection shows that the condition can be corrected at comparatively small expense and thus the structure may be made to serve for many years, provided its roadway width and approach alignment are adequate and safe for traffic. In many cases bridges built in the old horse-and-buggy days or the early stages of automobile traffic are still sound. They were, of course, not designed for the modern heavy and fast loads which now use them and their width of roadway or alignment of approaches is very likely to be too narrow or too crooked for safety.

It is a problem, then, to decide whether it is economical to strengthen or widen such structures or to replace them with new bridges on modern standards of design and highway location.

In other cases, bridges of a more or less temporary nature (which may or may not have been strong enough originally to carry

present legal loads) are nearing the end of their useful life. Due to the considerable number of such cases, it is often impossible to obtain the necessary funds to immediately replace them. Again, a revision of the roadway alignment may be contemplated in the near future and a new bridge built on the existing line would, therefore, have to be discarded at a considerable financial loss when the highway is relocated. In such cases it becomes necessary to determine the most economical means of strengthening the structure so that it can continue to serve existing conditions for a few more years.

IMPROVEMENT BRINGS TRAFFIC

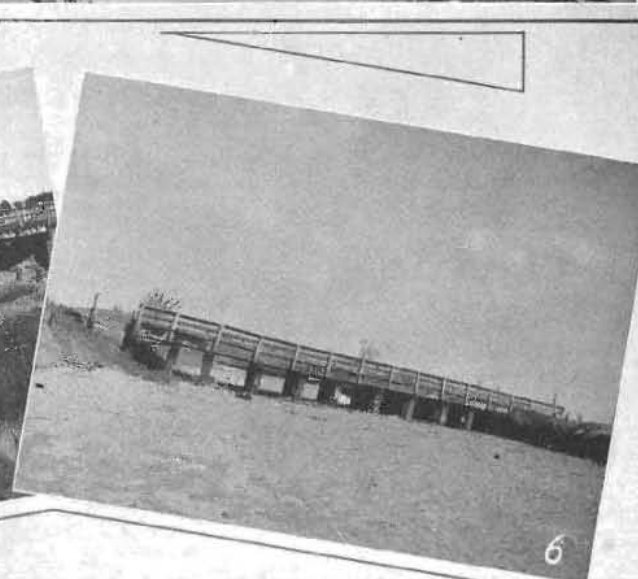
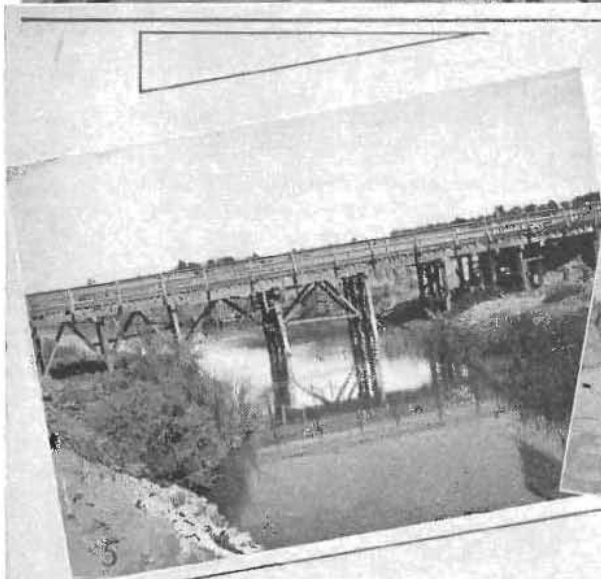
Bridges built in the outlying sections of the State, on roads that are lightly traveled, occasionally carry heavy loads of logs, mining machinery or various implements of husbandry. These bridges, although built of local materials and without any plans or designing outside of the native ingenuity and judgment of their builders, have successfully served their purpose in most cases.

When such roads are taken over by the State and the demand arises for their improvement—as it usually does—it often happens that the improvement of roadbed and surfacing changes the nature of its traffic and causes the bridges to become a serious hazard.

If all these low standard bridges were to have their allowable loading determined by applying the factors of safety used in modern bridge design, many roads or sections of roads would be practically closed to traffic.

In such cases the Bridge Department investigator has to take into consideration the matter of the actual nature of traffic using that road at the present time, or likely to use it in the near future. He investigates the physical condition of the materials in the bridge and considers how well they have stood up under the traffic. The danger to traffic in case the weakest members in the bridge should fail under load must also be considered. After taking these factors into account, he must determine a maximum load for which the structure will be legally posted if the

(Continued on page 14)



OLD BRIDGES FOR NEW—Examples of the 1235 bridges taken over by the State with Secondary Roads. 1—Old wooden structure across San Juan Creek between Santa Margarita and McKittrick 2—Cables and temporary bents prevent collapse of this bridge across Kern River at Isabella, posted for five tons. 3—Deterioration of this bridge on Route 149, Santa Barbara County, compelled posting for 10 tons. 4—Dilapidated bridge across Dark Gulch, Mendocino County. 5—Timber trestle across Alamo River near Brawley required addition of central “A” framed members. 6—Dilapidated timber trestle across Calloway Canal, on main Truck Route around Bakersfield.

Famous Death Valley Toll Road Purchased, Making It a Free Highway

By S. W. LOWDEN, Acting District Engineer.

THE State of California now owns the famous Death Valley toll road, which became a free highway in the State system with the filing of the deed of purchase and abolition of tolls on December 20, 1934.

The road extends from the foot of Darwin Wash across the Argus Mountains through Panamint Valley and over the Panamint Mountains by way of Towne's Pass to Stove Pipe Wells in Death Valley, a distance of approximately 31 miles. It thus provides a western gateway from Owens Valley into Death Valley.

It was constructed in 1926 by H. W. Eichbaum, a Death Valley pioneer resident, under a franchise granted him by the board of supervisors of Inyo County. The franchise was to be in perpetuity unless the county exercised an option to purchase.

ROAD TO BE IMPROVED

Shortly after the inclusion of the Death Valley routing in the State highway system in 1933, the California Highway Commission, with the thought of service to the traveling public uppermost in mind, started negotiations for the purchase of the Eichbaum toll road. After many delays and involved legal and financial questions, the negotiations were brought to a successful conclusion, title vested in the State.

It is anticipated that with present funds remaining intact, this recently acquired highway, which extends over a distance of 31 miles to the floor of Death Valley, will, within a reasonable time, be placed in a condition which will afford comfort and safety to the many travelers entering or leaving Death Valley by this route.

The fees for the use of the road have been \$2 per car and 50 cents per person. These charges were immediately abolished by the State when the title was filed and instructions were received from Assistant State Highway Engineer George T. McCoy to take possession of the road for the State and begin maintenance and improvement work. The road becomes a part of Route 127 in the State highway system and constitutes the westerly ap-

proach to the Death Valley National Monument, which is under the jurisdiction of the National Park Service.

ROAD CROSSES VALLEY

At Stove Pipe Wells Hotel, on the floor of the valley where the toll road ends, a connection is made with a road through Daylight Pass to the ghost towns of Rhyolite and Bullfrog and thence to Beatty and Tonopah, in Nevada.

State Route 127 bends southeast from Stove Pipe Wells to Death Valley Junction via Furnace Creek and thence south via Shoshone to a connection with State Route 31 (The Arrowhead Trail) at Baker.

A direct east-west road across the valley is thus provided for interstate traffic, and a wonderfully scenic, interesting loop trip through and across the valley is made possible for tourist traffic.

Approximately 2500 square miles of the territory known as the Death Valley area was included into the National Park system by presidential proclamation on February 11, 1933.

BED OF ANCIENT LAKE

Death Valley itself, located in the southeastern part of Inyo County, is the bed of a great ancient lake, enclosed on both east and west by high, precipitous ranges. The area of the valley floor is approximately 400 square miles, a considerable portion of which is below sea level, containing the lowest point on the North American continent. The term "Death Valley" is applied to the entire area, but Death Valley proper, until recently known as a region of dread, is only about 50 or 60 miles long. For more than 40 miles this sink is floored with a saline marsh from one to eight miles wide.

Water, mineralized, is close to the surface. There are a number of springs scattered over the valley, but most of the water holes are small, and the water usually charged with minerals, although considered safe for use. The springs commonly known as poison springs do not actually contain arsenic, but are charged with Epsom and other salts, and are fatal only because the victim, usually

(Continued on page 22)



DEATH VALLEY TOLL ROAD NOW FREE. Scenes on the famous Eichbaum Road recently purchased by the State. 1—View on section leading from Argus Range across Panamint Valley to Panamint Mountains in distance. 2—Leading from Townsend Pass into Death Valley, Funeral Range in the distance. 3—West entrance to toll road through Argus Mountains. 4—Crossing the Panamints. 5—In Townsend Pass.

State Completes N. R. A. Project on Sloat Boulevard in San Francisco

By COL. JNO. H. SKEGGS, District Engineer

INCLUDED in the 1933-35 budget allotment under major project allocation for construction and improvement of highways in incorporated cities, was a group of projects on Federal aid connections on Routes 2 and 68 in San Francisco.

An important member of the group was Sloat Boulevard, between the Great Highway and Skyline Boulevard, Route 55, and Nineteenth Avenue, Route 56. Sloat Boulevard ties in these two important outlets down the Peninsula with Routes 2 and 68 and into the city via city streets and boulevards with the major bridge projects now in course of construction.

The existing road was one of the first boulevard improvements made by the city of San Francisco over twenty years ago, and consisted of two 30-foot strips of concrete surfaced with asphalt, one on each side of a 35-foot unpaved private right of way of the Market Street Railway Company.

TRAFFIC COMPELLED IMPROVEMENT

As a main thoroughfare from the city to the beach, it was heavily traveled and the poor condition of the surface, together with the rapid building up of adjacent lands due to opening up of a large tract on the south, demanded improvement of surface and width, and also alignment between 39th and 44th Avenues where a sharp reverse curve was very hazardous.

As this project was financed principally from NRA funds, the Division of Highways advertised the project, using plans prepared by the city of San Francisco, and a local firm of contractors, being low bidders on the job, did the work under State supervision.

The right of way is 135 feet wide. Curbs were set back 8 feet on each side, reducing sidewalks from 20 feet to 12 feet. The 8-foot strips were paved with 8 inches of Portland cement concrete and the existing 30-foot strips were resurfaced with asphalt concrete with a minimum thickness of 2 inches.

LIGHTING SYSTEM MOVED

A complete lighting system had to be moved back to new lines, and a concrete bridge over a city boulevard between 36th and 37th Ave-

nues was widened. A considerable amount of sewer, sidewalk, and ornamental shrubbery adjustment was required.

Major contract items involved were: roadway excavation, 5103 cubic yards; crusher run base, 2606 cubic yards; asphalt concrete leveling and surface courses, 13,782 tons, and class "A" Portland cement concrete, 2900 cubic yards. The total cost, exclusive of engineering, was \$109,474.

The Portland cement concrete was dry-mixed at the aggregate plant and wet-mixed with a one-yard paver on the road. Concrete curbs and sidewalks were made with plant-mixed, transit agitated concrete. Asphalt concrete was finished with a 30-foot adapted paving machine, a surface roughness of slightly over 14 inches per mile being obtained.

CURVES ELIMINATED

The adjustment of alignment between 39th Avenue and 44th Avenue, where reverse curves of 1450 foot and 185 foot radii existed, was necessary to eliminate the dangerous condition at this location. The portion on 1450 foot radius was paved, and the portion on the new radius of 1500 feet, replacing the old 185 foot curve, is to be constructed by the city of San Francisco from its share of the one-quarter cent gas tax fund allocated to cities.

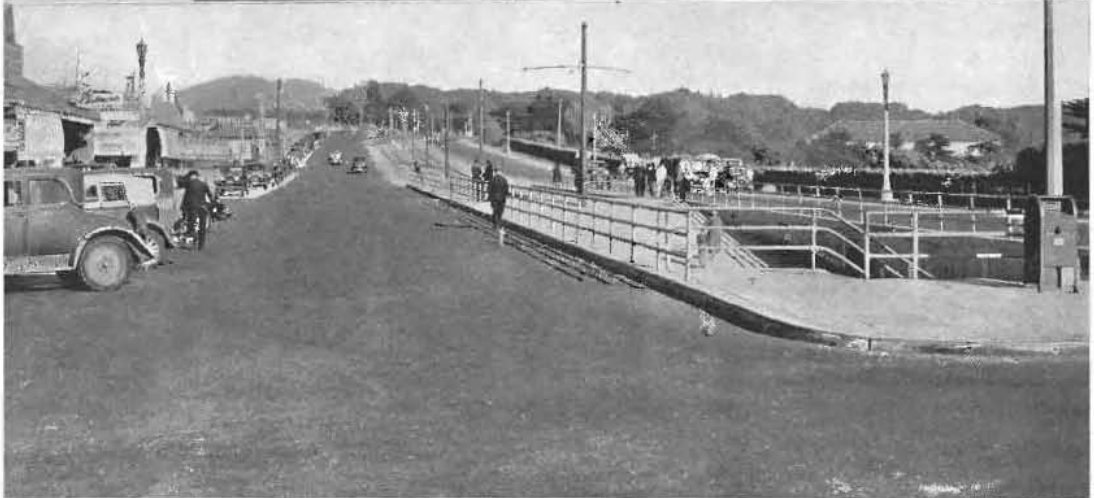
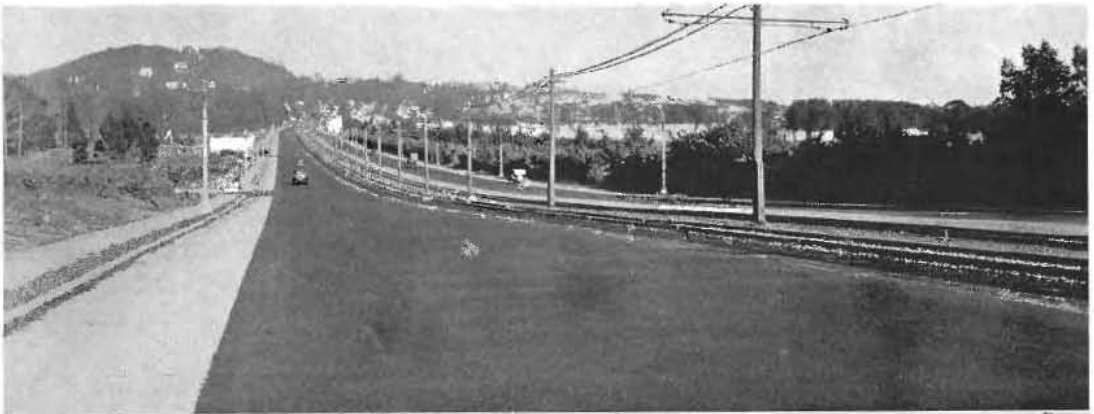
As a result of the work thus accomplished the new road is a splendid specimen of wide, smooth highway constructed on modern lines, and well fits this important boulevard link in the State Highway System.

ROMANS SIGNPOSTED HIGHWAYS

History records the fact that the ancient Romans signposted the Appian Way 2000 years ago. Some 20 centuries back, engineers of the Roman Empire placed a milestone every 1000 paces along the highways. Beyond 100 miles from Rome and in the provinces, these markers indicated the distance to the nearest principal town. The Appian Way is still traveled today.

Judge: "So your matrimonial life has been very unhappy! What was the trouble? Was it December married to May?"

Chloe Johnson: "Lan' sakes, no, jedge; it was Labor Day wedded to de Day of Rest."



SLOAT BOULEVARD IMPROVEMENT: 1—At top, general view showing 135 foot right of way with one-way traffic on either side of trolley tracks in the center. 2—North side of highway at point opposite Fleishhacker Zoo and pool showing subway entrance to Municipal Beach. 3—South side of Sloat Boulevard Improvement at Beach Subway opposite entrance to Fleishhacker Pool.

Zoning for Control of Building Along the California State Highway System

At the request of the American Association of State Highway Officials, the following article was prepared by Mr. C. C. Carleton as a paper to be read at the recent annual convention of the association in Santa Fe, New Mexico. It proved an outstanding paper that attracted widespread interest and comment and is presented here in its entirety with exception of the minor deletion of a report summarized in the context.

By C. C. CARLETON, Chief, Division of Contracts and Rights of Way

THE SCOPE of this paper will be confined to zoning and other regulatory procedure designed to contribute to the usefulness and attractiveness of roads and roadside settings. The writer was requested to relate his own experience with the legal problem of the control of roadside uses in connection with the development of the highway system of California, which further limits its range.

California has figured to a considerable extent in the evolution of anti-nuisance laws into our modern zoning legislation.* In several early California decisions relating to Chinese laundries the germ of the zoning idea was found and about that time there appeared ordinances restricting certain uses to certain districts and declaring that a business carried on in a district where that particular use was prohibited should be considered a nuisance.

In 1885 the city of Modesto passed the first municipal zoning or districting ordinance in the State. This related to the laundry business also and the constitutionality of the ordinance

was upheld by the State Supreme Court. (*In re Hong Kie*, 69 Cal. 149.)

There followed many city ordinances which have been sustained in a long line of California cases establishing the right of municipal authorities to restrict practically any kind of business, the operation of which might be a menace, harming public safety, sanitation or morals, or the public generally, within city boundaries. Prior to the hearing of the leading case of *Village of Euclid vs. Ambler Realty Company*, 272 U. S. 365, decided in 1926, and in which the principle of comprehensive zoning was sustained by the Supreme Court of the United States, two important decisions had been rendered by the California Supreme Court upholding the right of a city to establish and maintain residential districts under a comprehensive zoning scheme or plan, advancing many reasons in support of the zoning program and recognizing the idea that changed conditions called for changing laws. In one of

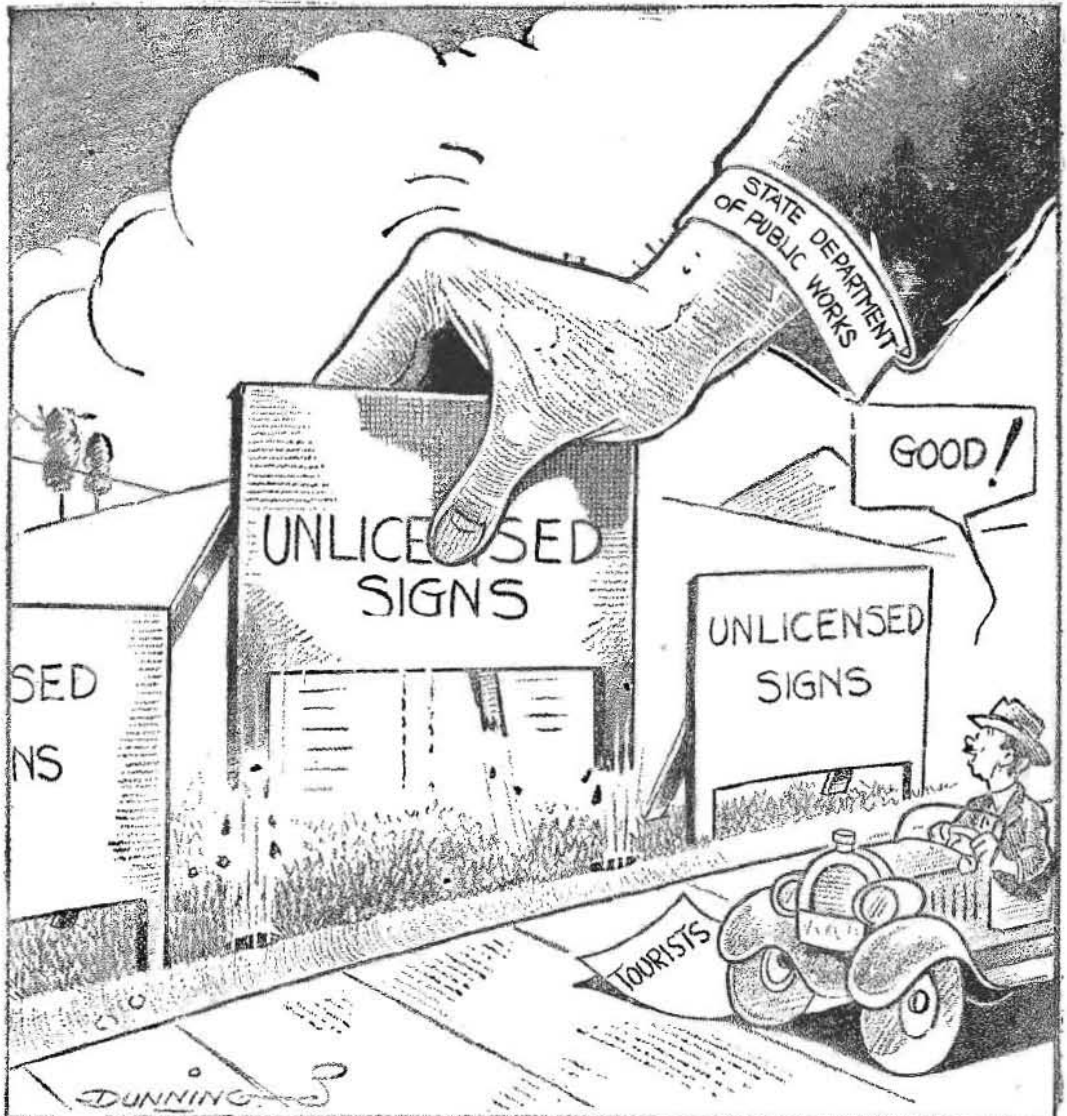


C. C. CARLETON

these cases (*Miller vs. Board of Public Works*, 195 Cal. 477), zoning is succinctly defined as follows:

* See "Zoning in the United States." Edited by W. L. Pollard, Los Angeles.

YANK THEM UP!



Courtesy of Sacramento Union

ZONING DEFINED

"In its original and primary sense, zoning is simply the division of a city into districts and the prescription and application of different regulations in each district when regulations are divided into two classes: (1) Those which regulate the height or bulk of buildings within certain designated districts, in other words, those regulations which have to do with structural and architectural designs of the buildings; and (2) those which prescribe the use to which buildings within certain designated districts may be put."

The celebrated Euclid Village, Ohio, case demonstrating the friendly attitude of the United States Supreme Court toward comprehensive urban zoning

was the first encouragement to our State highway authorities that zoning might some day be a potent force in the protection of the scenic values of public highways.

During the eight years which have passed since that memorable decision considerable progress has been made in California in expanding zoning legislation to regulate situations outside of city limits, and more specifically, to bring about effective roadside control.

SLOW PROGRESS MADE

Many millions of dollars were being expended in the construction of modern highways throughout the State, but despite numberless conferences of earnest, public spirited citizens and organizations interested in the aesthetic phases of highway development, slow

(Continued on page 16)

Hornitos, "Ghost" Town Without a City Official, Gets \$70 Gasoline Tax Share

By R. E. PIERCE, District Engineer, District X

HORNITOS, another of the near "ghost" towns, in Mariposa County, occupies a rather unique status among California cities. This town and the town of San Joaquin, in Fresno County, are the only incorporated cities in the State having no officials.

Hornitos enjoys the further distinction of being the only incorporated city in Mariposa County, and also the only incorporated city in District X not on a State highway. Yet the city is entitled to a share of the $\frac{1}{4}$ -cent gasoline tax and the dearth of officials was discovered when the Division of Highways sought to arrange payment to the city.

The town of Hornitos was first incorporated by act of the Legislature approved April 8, 1861. The act was repealed by the statute approved March 19, 1868, and two years later the town was reincorporated by act of the Legislature approved March 29, 1870.

ONCE HAD TRUSTEES

The statute provided that the officers should consist of three trustees constituting a board of trustees, one trustee to be elected as president, one as treasurer, and one as clerk. The trustees were elected annually and the compensation was fixed at \$1.00 per annum. But no trustees hold office today.

Hornitos, Spanish for "Little Ovens," retains the original buildings, in practically the same condition as during the mining days. One of these is the Masonic lodge building where meetings are still held.

According to tradition, the famous bandit Joaquin Murietta here made his escape from a posse by using a tunnel under the main street, passing from a building on one side of the street to the ruins of another on the opposite side of the street. The tunnel is still in good condition and the building is still standing.

In Hornitos is a plaza, unique among California mining towns, and probably due to the early Spanish influence.

RUINS TO BE PRESERVED

A building, now in ruins, housed the mercantile establishment of Ghirardelli, since famous as a chocolate manufacturer in San

Francisco. This building site has been purchased by the Ghirardelli heirs, and will be preserved by them.

Mr. Cavagnaro, who was born and raised in Hornitos and who runs a store which has been in operation since early mining days, states that one of the principal reasons for the decline of Hornitos was the advent of the railroad. Freight originally coming by team from Stockton, for distribution through the southern mines area, was diverted to the railroad, reducing the business of the town.

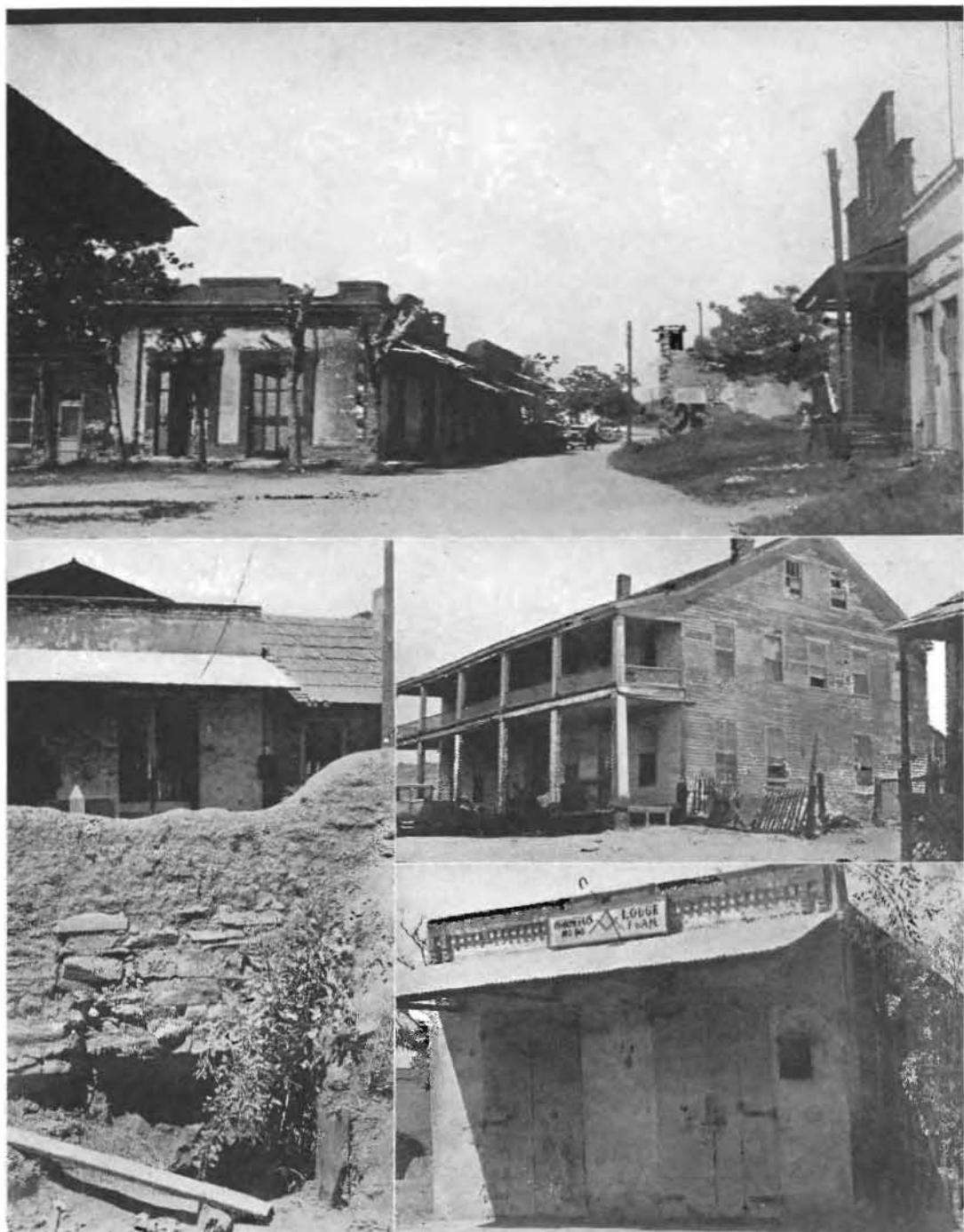
Owing to the fact that Hornitos is an incorporated city, and in spite of having no city government, the law entitles it to a share of the $\frac{1}{4}$ -cent gasoline tax allocation, which, based upon the last Federal census, is estimated to amount to about \$70 for the present biennium. As there are no city officials with whom to consult, it is proposed to expend the money for oiling the main street to eliminate the dust.

An automobile tour, inaugurated by the chambers of commerce of Mariposa and Turlock a short time ago for the purpose of booming the road from Turlock via Snelling, Merced Falls, and Hornitos to Mariposa, had a get-together luncheon at Bear Valley on the Mother Lode Highway. Considerable time was spent by the group who formed the caravan, in a tour of Hornitos, where the above interesting facts were related by J. W. Collins, county supervisor and life-long resident of Hornitos and the immediate neighborhood.

ROAD CONSTRUCTION MAKING RAPID PROGRESS IN MEXICO

Under the stimulus of Federal Aid, road building in Mexico has taken long strides forward during the last year and a half, according to a recent U. S. Commerce department report. During 19 months up to August 1 last, construction in 23 Mexican states and two territories has resulted as follows: Dry season road, 1429 miles; all-season road (gravel surfaced), 574 miles; paved, 44.2 miles. Cost of the program to Federal and State governments (half by each) amounted to 11,500,000 pesos.

Too many 20-mile-an-hour minds are driving autos at a 60-mile clip.—*The Safe Driver.*



HORNITOS (LITTLE OVENS), once a hot town of the Mother Lode country and a hideout of the famous bandit, Joaquin Murietta, is now a very ghostly "ghost city." The top picture shows a bit of the town plaza in the foreground and a view along the main street lined with ruins of once busy mercantile establishments and homes. There is a tunnel under this street said to have been used by Murietta in escaping from possemen who had cornered him in a house. House and tunnel are shown at lower left. The big hotel where General Grant once stopped and the old Masonic Lodge building, still used, are also shown.

Gas Tax Continues Down Trend. Loss of \$664,597 for November

CONTINUING a decline that began early in the summer the California gasoline tax for November shows a loss of \$664,597 compared with November of 1933.

In spite of the ideal weather conditions, improved roads and normal summer and fall prices, sales of gasoline have been decreasing steadily since May of last year with the exception of the month of October, which showed an increase of \$240,039. Assessments levied by the Board of Equalization show the following decreases as compared with the corresponding months of 1933:

June	\$269,643
July	323,239
August	157,350
September	161,328
November	664,597
Total decrease.....	\$1,576,157

The assessments for November showed the sharpest rate of decrease experienced thus far in the assessments for the calendar year 1934. The total assessment was \$3,227,105.78 as compared with \$3,891,703.17 for November of 1933, a decrease of \$664,597.39 or 17.07 per cent. With only the returns for December to come it appears that the total assessments for 1934 will fall slightly below the figure for 1933 with a probable total for the year of \$39,000,000.

Approximately 10 per cent of the gross assessments are required to make legal refunds and to cover collection expense so that the net revenue from the gas tax for 1934 will probably be slightly under \$36,000,000. Of this amount the proceeds of one cent or \$12,000,000 goes to the counties for roads and streets and the remainder is allocated to the Division of Highways for maintaining and constructing State highways with the reservation, however, that the equivalent of one-fourth cent or approximately \$3,000,000 be expended on roads and streets within municipalities.

Food for Thought

California has developed a State highway system of remarkable excellence. This State boasts some of the best roadways in the United States or in the world. The values of these improved highways and the benefits which they bestow upon the State should be considered carefully by all.—*Porterville Recorder.*

80 Mile Three-lane Highway Will Link L. A. and San Joaquin

THE completion within the next six months of the north section relocation of the Ridge Route through Grapevine Canyon in Kern County will give the State highway system a three-lane pavement all the way from Los Angeles to San Joaquin Valley, a distance of 80 miles, with the exception of a five mile gap between Fort Tejon and the Los Angeles County line. Provision for the completion of the construction of this gap is made in the next biennial budget.

In the construction of the 5.22 miles now under contract between Fort Tejon and a point one mile north of Grapevine Station, the first 3.7 miles was entirely completed with its 30 foot Portland cement concrete pavement last October. This section eliminated the famous Grapevine Grade with its series of dangerous hairpin curves that long impeded traffic between Los Angeles and San Joaquin Valley.

The contractors have already moved more than half of the 375,000 yards of dirt that must be handled in grading the remaining 1.5 miles and are expected to finish paving by next July.

In spite of the fact that this very heavy grading work crosses and recrosses the existing pavement there is no interference to traffic because of a very complete system of detour roads that has been provided.

All detours are surfaced with oil treated rock mixed in an asphaltic concrete plant, before any traffic goes on the detour. At the conclusion of the contract this surfacing rock will be used in the construction of shoulders along the pavement.

GAS TAX EVADER PUNISHED

The first test of Indiana's gasoline tax law, which provides punishment under the embezzlement statute for failure to return to the State the gasoline taxes collected from motorists, has resulted in conviction of one offender and a maximum sentence of from one to five years imprisonment and a fine of \$500.

The State charged him with having failed to pay \$318.08 in gasoline taxes which he allegedly collected from motorists during the month of August, 1933. A circuit court jury recommended imposition of the full legal penalty.

She—And you'd rather stay here with me than go to that gala occasion at the Ritzmore?

He—Why certainly. You're equal to any occasion.



NO "DEATH CURVES" HERE. Views of the completed 3½ mile improvement of the northern section of the famous Ridge Route show that the former dangerous curves and narrow roadway have been replaced by a fine, safe three-lane modern highway. This canyon, which is the main pass between Los Angeles and the San Joaquin Valley, carries not only the State Highway, but also transmission lines of two power companies, three gas pipelines from Kettleman Hills to Los Angeles and pipelines of two large oil companies. All these utilities had to be constructed and rearranged to avoid interference with the new highway.

1235 Bridge Structures Taken Over

(Continued from page 2)

money for reconstructing the bridge is limited or not available.

MANY FACTORS INVOLVED

Very often minor repairs can be made to the structure at a relatively small cost which will permit a higher load limit. It will thus be seen that the final decision is the result of a consideration of many factors such as the most economical procedure, the available finances and the minimum of inconvenience and risk to the traveling public.

Of course, it is practically impossible for any investigator to know exactly what value can be placed on the strength of the various materials in a bridge structure, especially after a long period of use under unfavorable or unknown conditions. Decision, therefore, must be based largely on previous experience with materials under somewhat similar conditions, and judgment must decide between a load limit which will assure the safety of the bridge and still not place undue restrictions on the traffic which is using the road.

WHY BRIDGES ARE POSTED

Very often a bridge posted for a certain load limit will have carried a much heavier load in the past, but on the other hand, bridges have failed under lighter loads than have been regularly using them. Very often unusual local roughness of surface may cause heavy impact or set up an unusual amount of vibration and this will result in a failure which would not have occurred otherwise even under a much heavier load. Such facts must be taken into consideration when posting bridges.

Following an act of the 1933 Legislature, the highway mileage was increased about 6780 miles beginning August, 1933, which added a very large number of low standard structures to the State highway system. Due to conditions connected with the general depression which preceded the taking over of the bridges, the counties had cut their expenditures for maintenance to a minimum, so that in many cases it was necessary for the highway department to act immediately, in order to prevent accidents from structural failures.

On a total of approximately 14,135 miles of State highways there are about 3450

bridges and grade separations, of which 1235 were taken over with the highways that were added in August, 1933. It may also be of interest to state that there are a total of 1155 grade crossings on the highway system, 605 of which were acquired in August, 1933. These crossings require considerable investigation and study in order to reduce the hazard they produce which may be done by improving the local line and grade, increasing the protection, or by constructing a grade separation. At least 30 per cent of the bridges acquired from the counties were in such a condition that immediate repairs and improvements were found to be necessary.

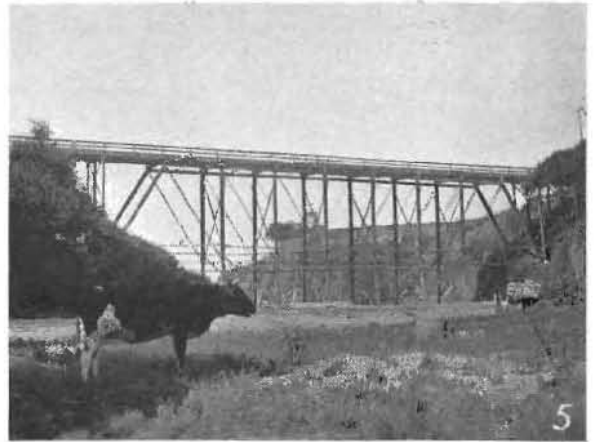
Lacking finances to do this, the alternative was to post them for a reduced load limit. An example of a large bridge too weak for legal loads, and in fact a matter of deep concern under any kind of traffic, is shown in the photo of the bridge over Jughandle Creek, a deep ravine on the Mendocino Coast Highway. Rebuilding or even making major repairs to such bridges can not be accomplished at this time as all available funds have been budgeted to necessary specific projects.

SERIOUS PROBLEM PRESENTED

Just what to do with these structures until reconstruction funds become available calls for considerable thought and concern on the part of those charged with their safety. There are also innumerable small bridges, usually of the timber trestle type, which need immediate repairs or improvements and even though the structures are small, their hazards are very real and it is desirable in many cases to either rebuild or materially remodel them. While such structures are individually small, the total amount of funds required for the necessary work on all of them is rather formidable.

However, since the legislative act of 1933, we have engaged in temporary repairs to inadequate structures included in this additional State highway mileage and it will be our endeavor to continue this work commensurate with available funds. Even with the expenditure of funds as provided there will remain a large number of structures which must be posted for a reduced legal load limit.

(Continued on page 18)



TYPICAL OF BRIDGE DETERIORATION to system was the high span across Jughandle Creek on the Mendocino shoreline coast road shown in the three top pictures. It was a combination of wood and steel deck truss structure with bad lower chord joints seriously weakened by rusting by adding strengthening supports. Pictures 1 and 2 show the old timber trestle on Route 101 between Dixon and the Rio Vista-Fairfield road before and

the danger point when taken into the secondary system. The State has made temporary repairs of the metal. Pictures 4 and 5 show the old timber trestle on Route 101 between Dixon and the Rio Vista-Fairfield road before and after being taken over by the State.

California Planning Act Passed in '29

(Continued from page 9)

progress was being made in protecting roadside beauty.

About the only accomplishments in this behalf prior to the passage of the California Planning Act of 1929 were those which were voluntary in their nature. For example, the activity of the Save-the-Redwoods League and the Redwood Empire Association, which resulted in the preservation of the giant redwoods along the now renowned Redwood Highway in northwestern California.

Ugly and ramshackle refreshment stands, auto camps, service stations, auto wrecking yards, and other structures of a commercial nature, sprang up along the newly improved highways, which not only detracted from the full enjoyment of the use of the thoroughfares by the traveling public but, through their overbuilding and unsightliness, caused resultant loss of business to their proprietors. Advertising signs spread like the "lice of Egypt."

LEGISLATIVE ACT PASSED

The writer will undertake briefly to report the progress that has been made in the past five years to promote greater roadside beauty and more beneficial use of the adjacent property itself.

Five years ago, as the result of the efforts of those forward looking enthusiasts interested in adequate planning and zoning procedure and to remedy unpleasing and unprofitable conditions outside of as well as inside of municipalities, the Legislature passed the California Planning Act (Act 5211b, Deering's General Laws of California).

This act provided the means of effectuating in the planning field the right to the full exercise of the police power which California counties possess. California, desiring that full local authority should be exercised by the municipalities and the political subdivisions of the State, embodied this principle in her present Constitution upon its adoption in 1879 in the following language:

"Any county, city, town, or township may make and enforce within its limits all such local, police, sanitary and other regulations as are not in conflict with general laws."

PLANNING COMMISSIONS AUTHORIZED

The California Planning Act provides that any city, city and county, or county, may adopt and establish an official master plan of said city, city and county, or county. Such plan is declared by the act to be established to conserve and promote the public health, safety and general welfare.

The legislative body of each city, or city and county, may, and of each county shall, create a planning commission.

It may be stated here that the Legislature of California has not delegated zoning powers to the State highway authorities, themselves, but these authorities collaborate in the affairs of the city and county planning commissions where State highway planning and beautification are involved. The result has been a more intelligent correlation of local and State highways, the fostering of a

spirit of mutual helpfulness in road and county matters in various political units, the increase of community amenities and an added impetus to the vitally important planning commission idea itself.

The principal problems involved have been the development of plans for an efficient system of roads which will adequately serve both through and local traffic, and which will combine safety and attractiveness with service.

REGIONAL PLANNING DISTRICTS

The California Planning Act also authorizes the formation of regional planning districts and the creation for such districts of regional planning commissions. Any regional planning district may include both incorporated and unincorporated territory and may include all or portions of one or more counties, but it must include all of any regular county voting precinct, any portion of which precinct it includes; except that no regional planning district shall be formed for territory consisting of all of one county only. The powers and duties of any such regional planning commission correspond to those provided for city and county planning commissions.

The California Planning Act further requires that the procedure set up in the Zoning Enabling Act (Act 994, Deering's General Laws of California) for cities shall be used in zoning. Thus is defined the manner of exercising in zoning the police power constitutionally residing in all counties of the State.

The function of the planning commission is to make all necessary studies, to prepare the zoning plan and conduct hearings thereon, and to recommend the plan to the board of supervisors. The planning commission has no independent authority, being purely advisory.

PROTECTING SCENIC VALUE

While county zoning has been based thus far largely upon the same principles as zoning by a city government, county zoning has the opportunity of a broader application than city zoning.

A number of municipal and county zoning and building setback ordinances have now been adopted for the purpose of protecting scenic values and to regulate the uses of land adjacent to traffic thoroughfares.

Mr. Hugh Pomeroy, a well known planning authority, states, "The latter two, standing alone, might be considered as encroaching too far upon the still largely forbidden domain of regulation for aesthetic purposes; but with the background of a functional analysis of the entire county, in regard to which they are formulated, they assume a definite and broader relationship to the public welfare."

INVOLVES SIGN CONTROL

The same authority states "Regulation of the uses of land adjacent to highways might appear to be 'ribbon' zoning; but related to a county land use plan, it becomes part of a comprehensive whole. * * *"

County zoning in this broader application may be the means of solving the increasingly vexing

Zoning Decisions Show Judicial Drift

(Continued from preceding page)

problem faced by this motor vehicle age in the condition whereby roadside signs prey upon the traffic of highways, and roadside commercial uses mire themselves in the slough of their own unattractiveness.

The California Planning Act gives to the counties of California the means of using in the field of zoning the police power with which they are vested. Thereby a major land use plan of the county may provide the background for zoning, for those regulatory measures which involve the public welfare in the protection of scenic areas and in the regulation of roadside land uses, and for the application of standards of subdivision control consistent with the type of area involved. And thereby a functional analysis of the county may guide the design of the entire county plan.

Some statements concerning zoning made by the court in the rather recent California case of *Smith vs. Collison* (119 Cal. App. 180) may be of interest as indicating the present-day drift of judicial thought in this State:

"Zoning is the division into districts of certain areas with regulatory prescription applied to the land or buildings. The regulations must have reference to and be in the interest of the public, such as the preservation of the peace, safety, morals, health, comfort and convenience of the public generally. Comprehensive zoning is regulation with forethought to a uniform plan or design to restrict construction and development reasonably and with fairness to each district within the jurisdiction of the duly empowered legislative body.

Changing conditions necessitate changed regulations. A comprehensive plan of zoning does not mean permanent regulation. Extensions, curtailments and modifications are all a part of comprehensive zoning. A zoning plan can not be made in a day. Emergency enactments and prior regulatory measures are as much a part of a comprehensive plan as if embodied in the general zoning law provided that they were duly and regularly passed by a legislative body in contemplation of a general zoning law and prove to be reasonably related to the general plan and for the better welfare of the public. To hold otherwise would result in assisting evaders of a contemplated uniform zoning plan to destroy the very purpose of its enactment.

Zoning is inherent in the police power. The doctrine of comprehensive zoning has been sustained by the Supreme Court of this State, but when there has been an arbitrary and discriminatory exercise of police power, or when the ordinance in question has no relation to public health, general welfare or safety, morals or protection of the community, or where there is an unreasonable restriction, the courts will interfere."

Quite noteworthy has been the progress of marginal zoning along California's thoroughfares, resulting in

the advancement of the best interests both of the adjacent property and of the use and appearance of the protected highways.

The police power is being invoked to deal with some of the problems arising from the profound change in conditions of rural life resulting from the motorization of travel which has reached its present extent largely within the past decade. Land uses in rural areas bear a distinctly different relationship to the public welfare when they take their character from streams of traffic which is extraneous in origin to the rural area than when they derive it from purely rural conditions.

MARGINAL LAND USES

The claim that the police power is distinctly limited in its application in rural areas as distinguished from urban areas does not apply in the consideration of highway marginal uses. The marginal land uses which are proposed to be regulated along a highway through a rural area are uses arising almost solely because of the existence of traffic on the highway. There is thus set up along traffic thoroughfares a land use condition which is a distinct phase of the entire regional land use structure.

The nature of this condition is far more nearly a projection of urban than a part of rural conditions. This fact is becoming generally recognized, not only in the planning function of government but in the entire field of legislation dealing with modern traffic and modern traffic thoroughfares.

The ordinances adopted in California have usually been backed by public sentiment and are being increasingly supported by public opinion. In addition, the owners of the property subject to the regulations are giving them increasing support. There is little evidence of a feeling that the regulations are unduly interfering with property rights, there apparently being recognition of the public interest which is involved, that is, that the use of property marginal to a highway is intimately related to the functioning of the highway.

NOW "SETTLED LAW"

The validity of urban zoning is now safely within that haven called "settled law." Roadside zoning is obviously for human betterment. That being so, it is easily predictable that courts will come to recognize its specific constitutionality just as definitely as they have urban zoning.

To use the words of the court in *People vs. Sterling*, 220 N. Y. Supp. 315, "We have reached the point in the development of the police power where an aesthetic purpose needs but little assistance from a practical one in order to withstand an attack on constitutional grounds." In *State vs. Houghton*, 144 Minn. 13, 176 N. W. 150, the court stated: "It is time that courts recognize the aesthetic as a factor in life. Beauty and fitness enhance values in public and private structures."

As was observed by the court in the case of *Perlmutter vs. Greene*, 259 N. Y. 327, upholding the action of the State Superintendent of Public Works of New York in erecting a screen in front of a billboard on abutting property at a dangerous curve, to

(Continued on page 19)

CALIFORNIA HIGHWAYS AND PUBLIC WORKS

Official journal of the Division of Highways of the Department of Public Works, State of California; published for the information of the members of the department and the citizens of California.

Editors of newspapers and others are privileged to use matter contained herein. Cuts will be gladly loaned upon request.

EARL LEE KELLY.....Director
JOHN W. HOWE.....Editor

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Vol. 13 JANUARY, 1935 No. 1

ANOTHER U. S. WARNING

An article released for publication by the U. S. Department of Agriculture under date of December 28, 1934, reads as follows:

"Apportionment of \$125,000,000 for Federal aid to the states in highway construction in the fiscal year beginning July 1, 1935, marked the resumption of the old policy of Federal highway aid. The apportionment was made by Henry A. Wallace, Secretary of Agriculture, on December 27 under the authorization contained in the Hayden-Cartwright Act of June 18, 1934.

"Secretary Wallace, in making the apportionment, called attention to the possibility of reduction of a State's apportionment through the operation of the provision in the Hayden-Cartwright Act relative to the diversion of gasoline taxes and other taxes on motorists. The act provides that Federal aid for a State's highway shall be reduced unless the State uses for highways at least the amounts provided by law on June 18, 1934, for that purpose from the State's gasoline and motor vehicle taxes and other special taxes on motor vehicle owners."

THE PROVISION OF THE HAYDEN-CARTWRIGHT ACT REFERRED TO FURTHER SAYS ANY DIVERSION OF GAS TAX REVENUES FOR OTHER THAN ROAD PURPOSES SUBJECTS THE STATE TO A LOSS OF ONE-THIRD OF FEDERAL AID FUNDS WHICH IN THE CASE OF CALIFORNIA WOULD MEAN A LOSS OF APPROXIMATELY THREE MILLION DOLLARS FOR THE NEXT BIENNIUM.

"I only say what I know."

"Ah, one of those big, strong, silent men!"

12,500 R.R. Crossings at Grade on State Highway System

(Continued from page 14)

A rough estimate of the funds needed to replace or reconstruct all bridges on the State highway system that are below the standard required for safely carrying legal loads is around \$3,000,000. To bring the condition of all bridges on the State system up to modern standards of strength and serviceability for traffic would require an expenditure in the neighborhood of \$10,000,000, depending, of course, on the amount of relocation necessary to conform to final highway location and alignment.

12,500 GRADE CROSSINGS

This does not include the large number of cases on new highway construction or where reasonably satisfactory structures have to be abandoned on account of reconstructing the highways on proper alignment which the existing bridge locations will not fit.

In the case of railroad grade crossing separations, the amount of money that would be spent in separating the 12,500-odd crossings is a matter of several hundreds of millions of dollars for construction costs alone.

When the new secondary highways were taken over in August, 1933, it was soon evident that the necessary funds and an organization would have to be set up to investigate all the bridge structures on these roads, and to recommend repairs or maximum safe load limits for posting.

As the mileage of the highway system increases, with no increase in funds for State highway purposes, the cost of maintenance and minor improvements also rises and less money is, therefore, available for new construction. If additional funds are not available for new construction, and it is necessary to maintain the old structures in use, it then becomes more imperative that the work of checking the condition of existing low standard structures be carried on to assure their safety and to maintain them to the limit of their service life.

Customer—I am returning this barometer; it seems to be out of order.

Shopkeeper—What is the trouble, madam?

Customer—One day it says one thing, and the next day it says something altogether different!

In the good old-fashioned days, muses Robert, a felon was something a carpenter had on his thumb.

Outdoor Advertising Act Upheld

(Continued from page 17)

prevent the attention of motorists from being diverted from the road, "Beauty may not be Queen, but she is not an outcast beyond the pale of protection or respect. She may at least shelter herself under the wing of safety, morality or decency." (See *Arthur vs. Virkler*, 258 N. Y. Supp. 886, citing the *Perlmutter* case and defining "Aesthetics"; also, Annotation on Zoning, 86 A. L. R. 659; also *State vs. Kievman*, 88 A. L. R. 962.)

SIGN CONTROL RECOGNIZED

It is reassuring that the fundamental law to pass statutes and ordinances to regulate and restrict billboards and land uses under the police powers was expressly recognized by Justice Roberts in the opinion of the United States Supreme Court in the *New York Milk Law* case decided this year. (291 U. S. 502.) To quote Justice Roberts:

"The court has repeatedly sustained curtailment of enjoyment of private property, in the public interest. The owner's rights may be subordinated to the needs of other private owners whose pursuits are vital to the paramount interests of the community.

The State may control the use of property in various ways; may prohibit advertising billboards except of a prescribed size and location, or their use for certain kinds of advertising; may in certain circumstances authorize encroachments by party walls in cities; may fix the height of buildings, the character of materials, and methods of construction, the adjoining area which must be left open, and may exclude from residential sections offensive trades, industries, and structures likely injuriously to affect the public health or safety; or may establish zones within which certain types of buildings or businesses are permitted and others excluded."

LEGISLATIVE COMMITTEE APPOINTED

The Legislature of California at its session of 1929 appointed a Joint Assembly and Senate Committee on the Scenic Preservation of State Highways to investigate and make recommendations concerning the possibility of regulating and controlling the locations and standards of construction of gasoline stations, hot dog stands, advertising signs and other structures of a commercial nature along scenic roads and highways, and such committee duly made its report to the 1931 Legislature. * * *

This special study was the forerunner of the action of the 1933 Legislature in passing the comprehensive Outdoor Advertising Act (Chapter 341, Stats. Cal., 1933).

This act regulates and licenses outdoor advertising signs and structures outside of the limits of incorporated cities.

All signs or structures, with certain exceptions, within 300 feet of intersections are prohibited, as well as all signs and structures that are in an unsafe condition, in drainage channels, or obstructing the view of approaching vehicles for a distance of 500 feet. The act provides that any signs or structures that come within the above violations are public nuisances, and according to the

wording of the Civil Code of California, no notice is necessary for the removal of public nuisances. However, in view of the fact that the act provides for a ten days' notice to the owner of the property upon which violations exist, this procedure is being followed. In May, 1934, Judge Fitzpatrick of the Superior Court of the City and County of San Francisco, decided that the Outdoor Advertising Act is constitutional.

CONSTITUTIONALITY UPHELD

The act was attacked in court by an outdoor advertising company, alleging that the act was unconstitutional on the ground that it imposes double taxation and deprives persons of their property without due process of law. Both of these points were held to be untenable. An appeal is now pending from the decision of the lower court.

In rendering the decision, Judge Fitzpatrick dissolved the restraining order placed upon the Department of Public Works against the enforcement of the provisions of the Outdoor Advertising Act. Therefore, the decision now permits its full enforcement and a campaign is under way whereby about four thousand nonconforming signs are being removed from private property. The act protects the public officials in entering upon private property to remove illegal signs by the following provision:

"For the purpose of removing or destroying any advertising structure or sign placed or maintained in violation of the provisions of this act, the director or his authorized agent may enter upon private property without incurring any liability therefor."

Recognizing local zoning ordinances, the Outdoor Advertising Act further provides:

"It is the intention of the Legislature to occupy the whole field of such regulation by the provisions of this act; provided, however, that nothing in this act shall be deemed to prohibit enforcement of any or all of the provisions hereof by persons designated so to act by appropriate ordinances duly adopted by any county of this State; provided, further, that nothing herein shall be deemed to prohibit the passage by any county of reasonable land use or zoning regulations affecting the placing and/or maintenance of advertising structures or signs in accordance with the provisions of Statutes of 1929, page 1805 (California Planning Act), or any amendment thereto."

EXERCISE OF POLICE POWER

California's planning act is an exercise of the police power to prescribe the designs of buildings or the use of property; its Outdoor Advertising Act is an exercise of the police power to regulate and license persons engaged in the business of outdoor advertising and all persons erecting or maintaining advertising signs and structures.

Through the medium of the legislation herein reviewed California is making very noticeable headway against tendencies which, had they been unarrested, would have much more seriously blemished the beauty of its thoroughfares and much more greatly diminished the desirability of the adjacent properties.

Bay Bridge Construction Progress Reported With Schedule for 1935

By C. H. PURCELL, Chief Engineer, San Francisco-Oakland Bay Bridge

THE following is a report on the progress of construction of the San Francisco-Oakland Bay Bridge for the years 1933 and 1934, together with a schedule of expected construction for 1935 and filed with Governor Frank F. Merriam by State Director of Public Works Earl Lee Kelly:

Progress of Construction

FROM GROUND BREAKING, JULY 9, 1933,
TO JANUARY 1, 1935

	July 9 to December 31, 1933	January 1 to December 31, 1934
Money spent in construction.....	\$6,000,000	\$16,500,000
Concrete placed.....	110,000 cubic yards	440,000 cubic yards
San Francisco cable anchorage (concrete).....	25% completed	50% completed
Anchorage steel.....	50% fabricated	All fabricated and 86% erected
Steel, West Bay towers.....	Fabrication of two towers started	Fabrication complete
Cable wire.....	25% drawn	84% drawn 66% completed 65% delivered
East Bay steel superstructure.....		50% fabricated 52% delivered 25% erected
Peak of men at work.....	2100	5953
Piers.....	1 complete and 12 under construction	49 completed
Yerba Buena Island tunnel.....	Approach excavations completed	Three pilot tunnels bored full length and outer walls raised to full height. Concrete wall lining started
Yerba Buena anchorage.....	Excavation completed	Concrete complete ready for erection of steel cable bents
West Bay tower erection.....		Towers W-2, W-3, and W-6 erected, Tower W-5 25% erected
Concrete center anchorage.....	Caisson anchored at site	Under water work complete and superstructure raised to 207 feet above water
East Bay substructure.....	Six piers started	All piers (43) complete
Erection, East Bay superstructure.....		Thirteen 288-foot spans and six towers erected
Yerba Buena Island superstructure.....		One span erected

Schedule of Construction for 1935

The following is the schedule for completion of work during the year 1935 on the San Francisco-Oakland Bay Bridge:

San Francisco automobile approach ramps—
To be 65 per cent completed.

West Bay suspension bridge—

Catwalk to be started March 1.

Cable spinning to be started April 1.

Suspended structure, San Francisco to center anchorage, 50 per cent placed.



C. H. PURCELL

Cable spinning completed for twin suspension bridges during 1935.

Vehicle tunnel through island to be completed.

Viaduct over east side of island to be completed.

East Bay superstructure to be completed except for 576 feet of suspended span at center of 1400-foot cantilever span.

East Bay approaches to be 50 per cent completed.

Contracts to be let in 1935—

East Bay automobile distribution structure ramps and viaducts.

Cypress Street approach.

San Pablo Avenue crossing and approach.

Interurban Railway system construction.

Administration Building and Toll Plaza.

Bridge Lighting.

Son—Dad, did you ever meet a girl who combined the attributes of beauty, charm and intelligence?

Father—Yeah, but darn it, I sobered up the following morning.



AN IMPRESSIVE PREVIEW of a section of the San Francisco-Oakland Bay Bridge just east of Yerba Buena Island, to be built during the first half of 1935, is presented in this drawing by Artist Nusé. A concrete viaduct extends from the tunnel mouth to a large concrete pier YB-1. Steel truss spans connect this pier with the huge concrete Anchor Pier E-1, that holds the anchor arm for the heavy cantilever span that will extend easterly from Pier E-2 shown at extreme right of picture.

Highway from U. S. to Panama Feasible

A highway more than 3200 miles long, connecting the southern boundary of the United States with the Panama Canal Zone and traversing Mexico and Central America, is pictured in engineering and economic terms in an official government report just issued under the title, "The Proposed Inter-American Highway," by the Bureau of Public Roads, U. S. Department of Agriculture.

The termini of the Inter-American highway are Nuevo Laredo in Mexico, just across the Rio Grande from Laredo, Texas, and Panama City, Republic of Panama. While the report describes the highway as "proposed," it is in fact already well on the way to realization, for of its total length approximately 40 per cent is now open to year-round traffic and an additional 27 per cent is good or fair in dry weather. To establish connections between the sections of road already built and to modernize existing highway where necessary is the task confronting the five Central American republics, Panama, and Mexico.

SURVEYED BY GOVERNMENT

The Bureau of Public Roads report is based upon a careful reconnaissance survey in Central America, during which the American engineers covered hundreds of miles of territory. Extensive aerial photography helped the engineers select the most practicable route. That a through highway between the United States and Panama is "entirely feasible from an engineering point of view" is the conclusion of the engineers.

Making a fool of ourselves is only giving nature an encore.

Water Authority Gives Hyatt Instructions

At a meeting of the Water Project Authority of California recently held in Sacramento, the following resolutions were unanimously adopted.

"That the Executive Officer of the Water Project Authority, Edward Hyatt, be instructed and directed to devote as much of his time and attention in Washington, D. C., and elsewhere, as he may determine to be necessary for the purpose of securing early Federal assistance in financing the Central Valley Project."

"That the Authority believes the Central Valley Project Act to be fundamentally sound and workable and recommends no amendments except those necessary to comply with Federal requirements."

150,000 ROAD SIGNS IN SOUTH

More than 150,000 sign markers guide motorists on roads in the southland, according to a report from the Automobile Club of Southern California. These include half a hundred types, warning drivers of road dips, curves, crossings or other hazards, and giving distances and directions to nearest towns and principal destinations along routes at every crossroad.

"Did you know that I had taken up story-writing as a career?"

"No. Sold anything yet?"

"Yes; my watch, my saxophone and my overcoat."
—*Barksdale News.*

Death Valley Made More Accessible

(Continued from page 4)

weakened in condition, drinks their water without moderation.

The area of greatest general attraction, however, is the two parallel mountain ranges on the east and west sides of the valley floor, of comparatively recent formation. They rise precipitously from elevations actually below sea level to heights of considerably more than a mile of vertical upthrust. The ranges on the east, known as the Grapevine and Amargosa ranges, are built of layer upon layer of stratified rocks of many colors. This is particularly noticeable in the vicinity of Furnace Creek.

HIGH MOUNTAIN PEAKS

The Panamint Range on the west, while not so colorful in formation, shows the greater uplift, and contains a number of high and prominent peaks, among which Telescope Peak, with an elevation of 11,045 feet, dominates the entire range.

The terrific erosion from thousands of years of local cloudbursts has honeycombed the valley facades with a continuous series of deep gorges and canyons of grotesquely beautiful formations and vivid colorings not surpassed in any other area. The alluvium has been carried down in a series of deltas or fans, some so steep as to be difficult of ascent and others sloping up gently on such moderate grades as to be easily traveled with an automobile.

Among those of the latter class are the fan at the mouth of Titus Canyon, over which the road to Scotty's Castle is constructed, and the Emigrant Wash, lying between Stovepipe Wells and Towne's Pass, through which the Eichbaum toll road is built, and through which a portion of the ill-fated Jayhawk party of emigrants, trapped on the valley floor in 1849, escaped to enter the equally great dangers of Panamint Sink.

The beds of evaporated salts and other minerals are of great depth, test holes having been sunk to 1000 feet below the floor of the valley and still being in salts. Although the valley is rich in many kinds of minerals, it is the extensive borax deposits which have so far given it a commercial importance.

50,000 VISITORS EXPECTED

Death Valley is rapidly coming into prominence and increasing numbers of visitors are attracted by the ideal winter climate, the many natural interests, and a certain amount of curiosity. It is estimated that 21,500 people entered the park during the winter season 1933-1934.

With the dissemination of information relative to road improvements being performed by the State Highway Department and National Park Service, 50,000 visitors can be expected during the coming season.

Well equipped hotels in different sections of the valley and on the approach roads provide accommodations and recreational advantages for tourist travel. The National Park Service has developed a public automobile camp near Furnace Creek, with modern conveniences, and they have also prepared and keep up simpler camps at Bennett's Wells, Triangle Springs, Mesquite Springs and Emigrant Springs. Water supplies have been developed at different points throughout the valley, either flowing or equipped with hand pumps.

UNIQUE SCENIC VIEW

In spite of the ruggedness of the mountains, there are several high points that can be reached by automobile, and the views from these points are unsurpassed, taking in the lowest point in America and at the same time the serrated, snow capped peak of Mt. Whitney, highest point in the United States. Many of the canyons that have been eroded through the mountain walls are easy of access by roads constructed up their beds, and contain many beautiful and interesting features.

The location of Death Valley makes it increasingly important as a traffic artery and through route to Las Vegas. Also, its easy accessibility to the Boulder Dam area makes it probable that with better road conditions, much of the Las Vegas recreational traffic will pass that way.

ROAD DEVELOPMENT PLANNED

Considerable improvement has already been made by two CCC camps established in the valley the past season, and by State maintenance forces, and at present there is a network of traversable roads in the valley aggregating 500 miles, all of which reach points of interest or are on some well established route. The National Park Service is now planning for the further development of the area, including the establishment of checking stations, dwellings, headquarters and museum buildings, improvement of camp grounds, and an extensive road program.

The approach roads to the east and west are under the State secondary system, placed there by legislative act in August, 1933. The year that has elapsed has witnessed extensive improvement, and with a continuation of the present program, the trip through the valley can be made with ease and even comfort.

The southeastern entrance via Baker and Shoshone is rapidly being brought to an excellent condition. To the west, the entrance over State Route 127 from Lone Pine via Keeler and Darwin is through many points of interest. The traveler passes along the shores of Owens Lake, now a dry bed of highly mineralized waste from which chemicals are obtained by the manufacturing plants at Keeler, but which in comparatively recent years was covered with crystal clear water through which plowed steamers of size, carrying lead and silver bullion like cordwood from the Cerro Gordo mine that still can be seen on the mountains to the northeast.

STRIKING VOLCANIC FEATURES

Through Darwin, a pioneer mining settlement, with its smelter and mines awaiting the return of prosperity, the traveler is taken through the Darwin Wash, where the action of nature's volcanic forces is seen on every hand. Passing near the Darwin Falls, the route descends over the old toll road to the Panamint Sink with its sand dunes and, under certain weather conditions, wierd mirages over the valley floor.

Climbing from Panamint Valley, the road winds its way through the forbidding Panamint Range and Emigrant Wash passing strikingly colorful formations as it descends to the floor of Death Valley.

Budget Loses \$1,750,000 of Fee Funds

(Continued from page 1)

tion of the highway transportation tax, which has already been mentioned, will cut off about \$750,000 for the biennial period. The provision to make all transfer fees available to the Department of Motor Vehicles causes a further reduction of about \$1,000,000 for the biennium. Legislative enactment in 1933 providing for the pro rata support of General Fund departments, such as the Controller, Attorney General, Department of Finance, increases the administration costs of the Division approximately \$500,000 for the two-year period. The quarter of a cent allocation from gas tax revenues to be expended within municipalities comes out of the State's share of the gas tax. The State has also taken over and is administering, without increase of its revenues, some 6800 miles of roads added to the State highway system in 1933.

FEDERAL AID APPORTIONMENT

In addition to these state-raised revenues the Federal Congress has made available in the adoption of the Hayden-Cartwright Act, in June, 1934, Federal aid funds for expendi-

State must be earned. The State performs the work on contracts based on plans approved by the Federal government and collects Federal aid moneys after completion of the work and in accordance with previously agreed participation.

The estimated revenues of \$61,393,459.70 for the 87th and 88th fiscal years are available for and must cover all purposes included under the administration of State highways. From these revenues provisions must be made not only for the construction and improvement of the roads, but also for the cost of preliminary and construction engineering, rights of way, betterments and minor improvements on secondary highways, joint highway district expenditures, administration, maintenance of the State highways and of roads in State parks, the allocation to cities, and finally the establishment of a contingency for emergency repairs occasioned by floods and slides and to cover unforeseen expenditures.

ALLOCATION OF MONEYS

In the distribution of the available revenues the law provides that the cost of adminis-

STATE HIGHWAY BUDGET INCLUDING FEDERAL AID FOR 87th AND 88th BIENNIUM

Estimates of Revenues

Gas tax.....	\$46,500,000	
Motor vehicle Fees.....	5,308,000	
Federal Aid (Hayden-Cartwright Act, 1934).....	9,585,459	
Total.....	\$61,393,459	

Allocation

Administration.....	\$2,558,459	
Maintenance.....	15,215,500	
Cities— $\frac{1}{4}$ cent allocation.....	5,812,500	
Construction and improvements.....	37,807,000	
Total.....	\$61,393,459	

ture on a designated and established Federal aid system.

Of the \$125,000,000 appropriation for the fiscal years 1936 and 1937, it is estimated that the apportionment to California for such purposes is \$9,585,459.70.

The Federal aid system is limited to 7 per cent of the public road mileage in the State and is constituted principally of State highways. Federal aid apportionments to the

tration and general maintenance shall be first set aside before allocation of moneys is made to the north and south county groups and to primary and secondary highways. The State highway budget has been prepared in accordance with these provisions. The allocation of moneys is shown in the accompanying tabulation. For administration \$2,558,459.70 was set up; for maintenance \$15,215,500. The next amount set

(Continued on page 24)

How North and South Share Funds

(Continued from page 23)

aside is the quarter of a cent allocation to cities of \$5,812,500. This latter amount is distributed and expended within the cities in accordance with legal provisions on the basis of the proportionate population of the city to the total population of the cities in the State. Deducting these three above-mentioned amounts from the total of \$61,393,459.70 leaves for all other purposes, including construction and improvements, \$37,807,000.

and south group of counties and produces \$9,451,750 for each county group, or a total of \$18,903,500.

The total amounts available therefore for the north group of counties on both primary and secondary highways is \$19,735,254 and for the southern group of counties \$18,071,746.

The detail of the allocation for primary and secondary highways, north and south,

ALLOCATION, CONSTRUCTION AND IMPROVEMENT OF HIGHWAYS

Primary North 54.4% of 50%-----	\$10,283,504	
Primary South 45.6% of 50%-----	8,619,996	
Total primary-----		\$18,903,500
Secondary North 50% of 50%-----	9,451,750	
Secondary South 50% of 50%-----	9,451,750	
Total secondary-----		\$18,903,500
Grand total-----		\$37,807,000
Primary North-----	\$10,283,504	
Secondary North-----	9,451,750	
Total North-----		\$19,735,254
Primary South-----	\$8,619,996	
Secondary South-----	9,451,750	
Total South-----		\$18,071,746
Grand total-----		\$37,807,000

This latter amount, by provision of the Breed Act and its subsequent amendments, is allocated 50 per cent to primary roads and 50 per cent to secondary roads. The primary allocation of 50 per cent is then divided between the north and south county groups on the basis of primary mileage in each group, which the Commission found to be 54.4 per cent in the northerly group of counties and 45.6 per cent in the southerly group. This percentage is based on a primary mileage of 2,477.98 miles in the north counties and 2,076.05 miles in the south counties. This division of primary funds produces for the northern counties \$10,283,504 and for the southern counties \$8,619,996, making a total of \$18,903,500 for primary highways.

The 50 per cent allocated to secondary roads is divided equally between the north

is also shown in tabulation on next page. The amounts of the various items included in this detail are estimated from and based on the cost for such work in previous bienniums. These items consist of (1) preliminary engineering; (2) construction engineering; (3) rights of way; (4) betterments and minor improvements; (5) joint highway districts; (6) contingencies, approximately 5 per cent of the major project allocation; and (7) amounts available for major projects for construction and improvement.

The total amount for major projects in the north group of counties is \$14,046,300, and for the south \$12,452,680 or, \$26,498,980 for the State. Chapter 767 of the 1933 Statutes provides for a limited flexibility to be exercised between the allocations to primary and secondary highways and the Com-

New Budget \$8,742,459 Less Than Old

(Continued from preceding page)

mission found it necessary to make adjustment between the allocated expenditures on primary and secondary highways in each group. The total setup for the various items listed above, however, in each group of counties equals the allocation to each group, as previously explained.

The budget for the current biennium, the 85th and 86th fiscal years, totaled \$70,136,000. This budget included \$16,000,000 of Federal

to eliminate from their program of projects many which were very urgent, important, and highly desirable.

This situation, however, was somewhat relieved by the second Federal emergency appropriation for the 1935 fiscal year made by the Federal government under the Hayden-Cartwright Act. The apportionment to California from this appropriation amounted to \$7,932,206. Although this appropriation

DETAIL OF ALLOCATION FOR CONSTRUCTION AND IMPROVEMENT

	North		South	
	Primary	Secondary	Primary	Secondary
1. Preliminary engineering	\$205,520	\$296,270	\$206,555	\$356,825
2. Construction engineering	411,050	305,300	413,110	572,170
3. Rights of way	587,225	654,220	472,125	735,646
4. Betterments and minor improvements	500,000	1,800,000	400,000	1,800,000
5. Joint highway districts		283,220		0
6. Contingencies	379,679	266,470	281,075	381,560
7. Major projects	9,892,500	4,153,800	5,620,500	6,832,180
Totals	\$11,975,974	\$7,759,280	\$7,393,365	\$10,678,381

RECAPITULATION

Primary North	\$11,975,974	
Secondary North	7,759,280	
Total North		\$19,735,254
Primary South	\$7,393,365	
Secondary South	10,678,381	
Total South		\$18,071,746
Grand total		\$37,807,000

aid emergency appropriation made in 1933. The next biennial budget, for the 87th and 88th fiscal years, totals \$61,393,459.70, which is \$8,742,540.30 less than the current budget. This shortage of some eight and three-quarter million dollars, in addition to the fixed charges established by the Legislature, created a decided difficulty in meeting the requirements for improvement on State highways in the north county group. To meet the reduced amount available for construction and improvement it meant that the Commission had

was made available a short time before the regular State highway biennial budget was adopted, the Highway Commission was able to anticipate this shortage of funds and to make allocation to projects contemplated for improvements in the next biennium by including them in a program to be paid for from the Federal emergency appropriation.

PROJECTS TABULATED

The program of major project allocations for the next biennial period should therefore

(Continued on page 26)

Primary Project Allocations for North

(Continued from page 25)

be considered in connection with the program of Federal emergency funds for the 1935 fiscal year. The projects included in the regular State biennial budget program and in the Federal program of 1935 apportionment are shown in accompanying tabulations. See pages 26 to 35. A tabulation is also shown, by counties, of the total allocation in each county from both programs, which shows a total of \$34,757,021 for construction, recon-

struction and improvement on the State highway system. This total practically equals the amount set up in the current biennium for similar purposes.

Limitation of funds, definite appropriations and commitments made by the Legislature, the necessity of bringing to completion projects in which already large investments have been made in order to realize on these investments, and make the roads usable, all con-

DETAIL OF MAJOR PROJECT ALLOCATION FOR CONSTRUCTION OF HIGHWAYS— PRIMARY NORTH

County	Route	Location	Approximate mileage	Nature of improvement	Proposed expenditures, 87th and 88th fiscal years	
					Detail	Total
Humboldt	1	Salmon Creek to Bucksport	7.3	Grading and surfacing	\$165,000	
Mendocino	1	Outlet Creek to Ryan Creek	1.9	Grading and surfacing	195,000	
Humboldt	1	Trinidad to McNeil	2.1	Grading and surfacing	125,000	
Mendocino	1	Eleven Oaks Road to Willits	0.8	Grading, surfacing and bridge	60,000	
Humboldt	1	City of Eureka		Grading and surfacing	60,000	
Tehama	29	Route 3 to 1.5 miles east of Dales	13.8	Surfacing	175,000	
Tehama	3	Southern Boundary to Red Bluff (portions)		Grading and shoulders	100,000	
Butte-Plumas	21	Jarboe Gap to Keddie (portions)		Tunnel construction and oiling	117,000	
Plumas	21	Storrie to Belden		Grading	155,000	
Butte-Plumas	21	Jarboe Gap to Roek Creek (portions)		Grading	520,000	
Shasta-Lassen	28	Fall River Mills to Hillside	18.0	Surfacing	67,500	
Shasta	3	China Gulch and Olney Creek bridges and approaches		Bridges and approaches	52,000	
Shasta	20	Near Old Shasta to Redding	3.0	Grading and surfacing	130,000	
Shasta	28	1.5 miles east of Bella Vista to Diddy Hill (portions)	5	Grading and surfacing	130,000	
Butte	3	Biggs Road to Chico	19.0	Grading and surfacing	95,000	
Yolo-Colusa	7	Dunnigan to Arbuckle	8.9	Grading and surfacing	180,000	
Yolo	6	East end of Causeway to M Street Subway	3.5	Grading and paving	170,000	
Yuba	3	Morrison Crossing to Marysville	9.0	Grading and paving	235,000	
Yuba	25	Downville Road (portions)		Grading and surfacing	75,000	
Nevada-Sierra	38	Floriston to State Line	5.0	Grading and surfacing	50,000	
Sacramento	3	Sacramento to American River	0.3	Grading and paving	50,000	
Sutter	3	In Yuba City		Grading and paving	25,000	
San Francisco-Alameda	5-68-69	San Francisco to Oakland		Grading, paving and bridges	3,300,000	
Santa Cruz	5	Scotts Valley to 1 mile north of Santa Cruz	3.9	Grading and surfacing	220,000	
Santa Clara	68	Santa Clara-Alviseo Road to San Jose; Guadalupe River	3.7	Grading, paving and bridge	425,000	
Marin	1	Waldo to Golden Gate Bridge		Grading, paving and bridge	1,000,000	
Marin	1	Through San Rafael		Grading	200,000	
Monterey	2	Bradley to 5 miles south of San Ardo, Haines Creek	6.8	Grading, paving and bridge	335,000	
Monterey	2	Soledad to Gonzales	8.0	Grading and paving	158,000	
Monterey	2	Thompson Gulch		Grading and surfacing	27,000	
Monterey	2	Southern Pacific grade separation in Salinas		Structure	260,000	
Fresno	4	South limits Selma to ¼ mile north of north limits	2.0	Grading and paving	120,000	
Fresno	4	Fresno to Ashlan Avenue	4.0	Grading and paving	275,000	
Kings	10	1.5 miles east of Hanford to Hanford	1.5	Grading and paving	60,000	
Solano-Napa	7-8	Vallejo-Benicia Road to Cordelia	9.8	Grading, paving and surfacing	330,000	
Solano	7	3.5 miles north of Fairfield to 0.6 miles south Vacaville, Alamo Creek	4.0	Grading, paving and bridge	200,000	
Stanislaus	4	Turlock to Esmar	6.0	Resurfacing	50,000	
Total, Primary North						\$9,892,500

Primary Project Allocations for South

(Continued from preceding page)

tributed to the difficulty of preparing an adequate program and made it impossible to meet the many requests for improvement referred to the Commission. Many worthy projects could not be included and had to be

deferred for future consideration. The projects finally included in the program, therefore, represent the essential and most needed. Practically every county in the State is included in the program.

DETAIL OF MAJOR PROJECT ALLOCATION FOR CONSTRUCTION OF HIGHWAYS— PRIMARY SOUTH

County	Route	Location	Approximate mileage	Nature of improvement	Proposed expenditures, 87th and 88th fiscal years	
					Detail	Total
Santa Barbara	2	Tajiguas Creek to Arroyo Quemado and Arroyo Hondo to 1 1/4 miles west	2.0	Grading and paving	\$137,000	
Santa Barbara	2	Arroyo Quemado to Arroyo Hondo	1.2	Grading and paving	60,000	
Santa Barbara	2	1 mile north of Rincon Creek to Carpinteria	1.6	Grading and paving	85,000	
Santa Barbara	2	Carpinteria Creek		Bridge	40,000	
Santa Barbara	2	Richfield tower to Santa Maria River	1.5	Grading and paving	65,000	
Kern	4	Los Angeles County Line to Fort Tejon	5.2	Grading and paving	400,000	
Kern	4	Famosa grade separation and approaches	1.5	Grading, paving, structure	145,000	
Tulare	10	Yokohl to Lemon Cove	5.0	Grading and surfacing	150,000	
Los Angeles	9	Verduga Road to Flintbridge Country Club	1.4	Grading and paving	150,000	
Ventura	2	Conejo Grade; Conejo Creek	7.0	Grading, paving, bridge	550,000	
Los Angeles	4	Newhall Tunnel		Grading	100,000	
Los Angeles-Ventura	2	Calabasas to Conejo Grade		Grading and paving	200,000	
Los Angeles	9	Sooville Avenue to Big Tujunga Wash	2.0	Grading and paving	85,000	
Los Angeles	9	Big Tujunga Wash, N. and S. Channels		Grading and bridges	90,000	
Ventura	60	Big Sycamore line change and bridge	1.0	Grading, paving, bridge	150,000	
Ventura	60	Oxnard to Hueneme Road	4.9	Grading and paving	73,000	
Orange	60	Seal Beach to Huntington Beach	6.1	Grading and resurfacing	54,000	
Orange	60	Huntington Beach to Newport Beach	4.2	Grading and resurfacing	38,000	
Los Angeles	23	Lancaster to North Boundary	10.0	Pavement widening	50,000	
Los Angeles-Ventura	60	Encinal Canyon to Little Sycamore	5.7	Grading and paving	268,000	
Los Angeles-Ventura	60	Arroyo Sequit and Little Sycamore Creeks		Widening bridges	22,000	
Los Angeles	60	Santa Fe Railroad Yards, grade separation in Wilmington		Structure	475,000	
Los Angeles	4	Tujunga Wash		Bridge	225,000	
Los Angeles	4	Truman Street through San Fernando	1.4	Grading and paving	92,000	
Los Angeles	60	State St., Lime St. to Stanley Ave.	1.2	Grading and paving	50,000	
Los Angeles	2-4-60	Routes 2, 4 and 60 in City		Grading, paving, structures	132,000	
Riverside	26	North Boundary to west limits of Beaumont	1.5	Grading and paving	77,000	
San Bernardino-Riverside	19	Ontario to Riverside	15.0	Grading and surfaced shoulders	40,000	
San Bernardino	26	Santa Ana River to Redlands, Mission Storm Drain	5.5	Grading and paving	111,000	
San Bernardino	58	In Barstow		Grading and surfacing	35,000	
San Bernardino	58	Ludlow to 20 miles east of Amboy (portions)		Grading, bridges, drainage	20,000	
Inyo	23	Big Pine to Keough Hot Springs	8.0	Grading and surfacing	150,000	
Mono	23	2.2 miles south of Rush Creek to 2.7 miles south of Mono Inn	7.5	Grading and surfacing	125,000	
Mono	23	4 miles to 1.3 miles south of Coleville	2.7	Grading and surfacing	34,000	
Mono	23	Conway Summit to Bodie Road	3.0	Grading and surfacing	53,500	
Kern	23	Mojave to 10 miles north	10.0	Surfacing	15,000	
Mono	23	Mattly Ranch to Leeving	2.2	Surfacing	10,000	
Inyo	23	Vicinity Evans Ranch	0.7	Grading and surfacing	16,000	
San Diego	2	Del Mar to Encinitas; Del Mar grade separation	6.3	Grading, paving, structure	272,000	
San Diego	2	Oceanside to Las Flores underpass	8.0	Grading and paving	444,000	
Riverside	26	County Line to Avenue 62	9.0	Storm protection, drainage	78,000	
Imperial	26	3 miles west of Westmoreland to Trifolium Canal	4.0	Resurfacing	48,000	
San Diego	12	El Cajon Avenue		Paving	200,000	
Total, Primary South						\$5,620,500
Total Primary						\$15,513,000

DETAIL OF MAJOR PROJECT ALLOCATION FOR CONSTRUCTION OF HIGHWAYS— SECONDARY NORTH

County	Route	Location	Approximate mileage	Nature of improvement	Proposed expenditures, 87th and 88th fiscal years	
					Detail	Total
Del Norte	71	0.7 mile south State Line to 0.5 mile north Winton Corner	5.1	Grading and surfacing	\$140,000	
Mendocino	48	Clew Creek and Oaks line change	1.7	Grading and surfacing	43,000	
Lake	15	Upper Lake to Rasmussen Ranch	1.2	Grading and surfacing	68,000	
Modoc	28	Alturas to Cedarville (portions)		Grading and surfacing	75,000	
Siskiyou	46	Klamath River Road (portions)		Grading	100,000	
Trinity	20	Trinity River Road (portions)		Grading	100,000	
El Dorado	11	Kyburz to Strawberry	9.0	Surfacing	115,000	
El Dorado	11	Echo Creek and Little Truckee River		Bridges	25,000	
Sacramento	11	Isleton to Sacramento	33.0	Grading and surfacing	80,000	
Butte	45	Westerly Boundary to Biggs Road	7.7	Surfacing	15,000	
El Dorado	11	Oglesby Canyon	1.0	Surfacing	13,000	
Contra Costa	75	Oakland to Walnut Creek (portions)	5.0	Grading and surfacing	325,000	
Sonoma	104	Cotati to Sebastopol		Grading and surfacing	75,000	
Napa	104	Sears Point Road		Purchase	41,800	
Alameda-Contra Costa	69	Ashby Ave. to San Pablo Ave.	5.4	Grading and paving	550,000	
Monterey	10	Lewis Creek to Priest Valley	1.2	Grading	30,000	
Monterey	58	Partington's Canyon to Post's Summit	6.5	Grading and surfacing	622,000	
Monterey	58	Torre Canyon		Bridge	67,000	
Monterey	58	Post's Summit to Big Sur	2.3	Grading and surfacing	78,000	
Monterey	55	Couviat Gulch		Bridge	27,000	
Monterey	55	Molera's Ranch to 1.6 miles southerly	1.6	Grading and surfacing	81,000	
San Benito	119	Pinnacles Park to Hollister (portions)		Grading and surfacing	100,000	
Fresno	41	Kings River Canyon		Grading	300,000	
Madera	125	Kelshaw to Coarsegold	8.0	Grading and surfacing	230,000	
Kings	10	Hanford westerly	2.5	Grading and paving	40,000	
Napa	7	1 mile north Carquinez Bridge to Vallejo-Benicia Road	1.4	Paving	75,000	
Tuolumne	13	Sullivan Creek to Pooley's (portions)	3.5	Grading and surfacing	100,000	
San Joaquin	53	Potato Slough Bridge and approaches, west of Terminus	0.4	Draw bridge, grading, surfacing	150,000	
Solano	7	In City of Benicia		Grading and surfacing	10,000	
		Prison Labor Camps		Grading	478,000	
Total, Secondary North						\$4,153,80

DETAIL OF MAJOR PROJECT ALLOCATION FOR CONSTRUCTION OF HIGHWAYS— SECONDARY SOUTH

County	Route	Location	Approximate mileage	Nature of improvement	Proposed expenditures, 87th and 88th fiscal years	
					Detail	Total
San Luis Obispo	125	Cholame to Kern County Line	7.5	Grading and surfacing	\$217,000	
San Luis Obispo	125	Cholame Creek		Bridge	23,000	
Santa Barbara	80	Santa Barbara Ave. to Los Olivos and Alamo Pintado Creek	5.7	Grading, surfacing, bridge	141,000	
Kern	58	Seivert to Bear Mountain Ranch	14.0	Surfacing	45,000	
Tulare	129	1 mile south to 1 mile north of Lindsay	3.0	Grading and paving	150,000	
Kern	58	Tehachapi to Mojave (portions)		Grading and surfacing	125,000	
Kern	139	4 miles south of Shafter northerly 2.5 miles	2.5	Grading and surfacing	75,000	
Kern	142	Kern River Bridge and approaches	1.0	Bridge, grading, surfacing	75,000	
Kern	141	3 bridges, Oak St. route		Bridges	30,000	
Kern	58	3 bridges, east of McKittrick and of junction Route 139		Bridges	32,000	
Los Angeles	26	Rio Honda		Bridge	135,000	
Ventura	138	San Antonio Creek Bridge and approaches		Bridge, grading, surfacing	35,000	
Los Angeles	168	Union Pacific subway at Telegraph Road		Pumping system	5,000	
Los Angeles	168	Cerrito Ave., Los Angeles St. to Artesia St.	2.0	Grading and paving	75,000	
Orange	176	Carolina Ave. to Santa Ana River (portions)				
		Pacific Electric grade separation	3.4	Grading, surfacing, structures	110,000	
Orange	174	Manchester Ave., Anaheim to Miraflores	1.3	Grading and paving	48,000	
Los Angeles	166	San Gabriel River		Bridge	70,000	
Los Angeles	61	Red Box to Mt. Islip (portions)		Grading and surfacing	300,000	

DETAIL OF MAJOR PROJECT ALLOCATION FOR CONSTRUCTION OF HIGHWAYS—
SECONDARY SOUTH—Continued

County	Route	Location	Approximate mileage	Nature of improvement	Proposed expenditures, 87th and 88th fiscal years	
					Detail	Total
Los Angeles	158	Sepulveda Blvd., Culver City to Centinella Ave.	1.2	Grading and paving	\$85,000	
Los Angeles	186	Route 170 to Route 171, through Santa Fe Springs	1.4	Grading and paving	100,000	
Orange	43	Santa Ana Canyon Road, Gypsum Creek to County Line	2.6	Grading and paving	150,000	
Los Angeles	62	Coldbrook Camp to Ranger Station	7.0	Grading	40,000	
Ventura	153	Camarilla to Oxnard (portions)		Grading and paving	100,000	
Ventura	79	Sespe Ranch to Fillmore and at Piru		Grading and paving	180,000	
Orange	175	Southeast of Placentia	1.0	Grading and paving	36,000	
Orange	179	Santa Ana River		Bridge	42,000	
Los Angeles	62	Glendora Ave. over Walnut Creek		Bridge	10,000	
Ventura	9	Somis to Saticoy	6.3	Grading and shoulders	53,000	
Los Angeles	167	Los Angeles River on Atlantic Blvd.		Bridge	135,000	
Orange	183	Santa Ana River, Bolsa Ave.		Bridge	42,000	
Los Angeles	168	Rosemead Ave., Whittier Blvd. to Foothill Blvd. (portions), Rio Honda River	10.0	Grading, paving, bridge	350,000	
Los Angeles	172	Third St. at city limits to San Gabriel Blvd.	6.5	Grading and paving	440,000	
Los Angeles	158	Sepulveda Blvd. (portions)		Grading, paving, structures	250,000	
Los Angeles	162	Santa Monica Blvd., Beverly Hills to Seward		Grading, paving, structures	200,000	
Los Angeles	162	Santa Monica Blvd., Heath to Sepulveda		Grading, paving, structures	350,000	
Los Angeles	165	Figueroa St. (portions)		Grading, paving, structures	481,930	
Los Angeles	172	Fourth St., Indiana to Fresno		Grading and paving	50,000	
Los Angeles	173	Tenth St. (portions)		Grading and paving	250,000	
Riverside	19	Box Springs to Theodore St.	8.9	Grading and surfacing	167,000	
Riverside	19	Beaumont to Bad Lands, grade separation	2.3	Grading, surfacing, structure	73,000	
Riverside	194	Junction Routes 194 and 19 to new connection	2.5	Grading and surfacing	39,000	
San Bernardino	26	East limits of Colton to Waterman Ave., Santa Ana River	1.9	Grading, paving, bridge	330,000	
San Bernardino	190	Indian Creek Wash		Bridge	10,000	
San Bernardino	191	Dip on Verdement Cutoff		Bridge	10,000	
Riverside	77	Santa Ana River (Prado)		Bridge	21,000	
San Bernardino	77	Pomona (Garey Ave.) to Merrill Ave.	4.0	Grading and surfacing	66,000	
Riverside	77	San Jacinto River at Elnore		Bridge	25,000	
Riverside	78	Temecula Creek Bridge Mile Post 72.3		Bridge	10,000	
San Bernardino	59	Route 43 to north of Arrowhead Dam (portions)	7.5	Grading and surfacing	75,000	
San Bernardino	188	Mt. Anderson to Camp Seeley	3.0	Grading and surfacing	40,000	
Mono	96	Bridgeport to 3 miles east of Walker River Dam	6.0	Grading and surfacing	15,000	
Mono	40	Route 23 to Tioga Summit (portions)		Grading and surfacing	15,000	
Inyo	128	Death Valley Junction to State Line	7.3	Grading and surfacing	9,000	
Inyo	127	6 miles west of Darwin to Panamint Sink	18.0	Grading and surfacing	25,000	
Mono	13	Route 23 to Sonora Summit (portions)		Grading and surfacing	13,000	
Kern	145	Searle to Randsburg	6.7	Grading and surfacing	8,000	
Mono	95	Near Coleville to State Line	11.3	Grading and surfacing	15,000	
Inyo	127	Eichbaum Toll Road		Purchase	18,900	
Inyo	76	Lake Sabrina to Bishop	18.0	Grading	20,000	
Inyo-Mono	76	Route 23 to 20 miles north	20.0	Grading and surfacing	38,000	
Kern	57	Weldon to Onyx (portions)		Grading and surfacing	8,000	
Kern	57	8 miles west of Freeman to 18 miles east	9.8	Grading and surfacing	22,500	
Riverside	64	Ehrenberg Bridge		Principal and interest	50,850	
Imperial	187	Holtville to Brawley (portions)		Resurfacing	104,000	
San Diego	77	Lake Hodges to Escondido	3.1	Grading and resurfacing	85,000	
Riverside	187	Mecca to Route 26 (portions)		Grading and surfacing	25,000	
Riverside	64	10 miles west of Indio to Indio	10.0	Grading, surfacing, bridge	140,000	
Imperial	202	Calexico to Highline Canal, Alamo River and Highline Canal	12.9	Grading, surfacing bridges	100,000	
Imperial	187	Brawley to Calipatria (portions)		Grading and surfacing	75,000	
Imperial	201	East Heber to East Brawley (portions)		Grading and surfacing	50,000	
Riverside	146	Palo Verde to Route 64	17.5	Grading and surfacing	50,000	
San Diego	198	San Vicente Creek		Bridge	23,000	
San Diego	195	Pauma Creek and approaches		Bridge and grading	20,000	
Total, Secondary South						\$8,832,180
Total Secondary						\$10,985,980
Grand total, Primary and Secondary						\$28,498,980

PROGRAM OF 1935 FEDERAL AID APPORTIONMENT FOR NORTHERN COUNTIES

Route	Location	Length, miles	Improvement	Amount
ALAMEDA COUNTY				
5	Oakland—38th and Moss Avenue; Market to Webster.....	0.7	Grading and paving.....	\$115,000
5	Hayward—S. city limits to B Street.....	0.8	Grading and paving.....	25,000
5-14	Oakland-Emeryville—Grade separation San Francisco-Oakland Bay Bridge Approach.....		Structure.....	175,000
	Total Alameda County.....			\$315,000
ALPINE COUNTY				
24	State line to 2.5 miles west.....	2.6	Grading and surfacing.....	\$33,000
	Total Alpine County.....			\$33,000
AMADOR COUNTY				
34	Jackson to Martell.....	1.5	Grading and surfacing.....	\$55,000
	Total Amador County.....			\$55,000
DEL NORTE COUNTY				
1	Oregon Mt. Summit to state line.....	4.2	Surfacing.....	\$61,000
	Total Del Norte County.....			\$61,000
FRESNO COUNTY				
4	Selma to Fowler Switch Canal.....	1.0	Grading and paving.....	\$64,600
41	Kings River bridge and approaches near Centerville.....		Grading, surfacing, structure.....	80,000
	Total Fresno County.....			\$144,600
GLENN COUNTY				
7	Willows to Orland.....	15.0	Grading and shoulders.....	\$75,000
	Total Glenn County.....			\$75,000
HUMBOLDT COUNTY				
56	Fernbridge to Ferndale.....	5.8	Shoulders, curve correction.....	\$13,000
	Total Humboldt County.....			\$13,000
LAKE COUNTY				
15	Rasmussen Ranch to Manila Ranch.....	2.5	Grading and surfacing.....	\$95,000
	Total Lake County.....			\$95,000
LASSEN COUNTY				
29	State line to Route 21 (see Sierra County).....	5.8	Grading and surfacing.....	\$77,000
29	Through Susanville.....	0.8	Resurfacing.....	8,100
	Total Lassen County.....			\$85,100
MADERA COUNTY				
125	Coarsegold to Hawkins School.....	7.9	Grading.....	\$240,000
	Coarsegold to Oakhurst.....		Surfacing.....	
4	Madera—through city.....	1.3	Grading, paving, structure.....	85,000
	Total Madera County.....			\$325,000
MENDOCINO COUNTY				
1	Red Mt. Creek bridge and approaches.....	0.3	Grading, surfacing, structure.....	\$65,000
1	McCoy Creek bridge and approaches.....	0.2	Grading, surfacing, structure.....	22,000
1	Willits—Main Street; Broadus Cr. to N. W. P. R.R. and at Monroe Street.....	0.5	Grading and surfacing.....	8,200
1	Ukiah—State Street; Mill Street to N. city limits.....	0.8	Resurfacing.....	7,500
	Total Mendocino County.....			\$122,800
MERCED COUNTY				
	Merced—through city.....	1.4	Widening and resurfacing.....	\$47,000
	Total Merced County.....			\$47,000
MODOC COUNTY				
Feeder Rd.	Tule Lake Road; C. N. R. R. northeasterly.....	4±	Grading and surfacing.....	\$75,000
	Total Modoc County.....			\$75,000

**PROGRAM OF 1935 FEDERAL AID APPORTIONMENT
FOR NORTHERN COUNTIES—Continued**

Route	Location	Length, miles	Improvement	Amount
MONTEREY COUNTY				
56	Limekiln Creek Bridge.....		Bridge.....	\$40,000
56	Vicente Creek Bridge.....		Bridge.....	48,000
56	Big Creek Bridge.....		Bridge.....	90,000
56	Burns Creek Bridge.....		Bridge.....	75,000
56	Mal Paso Creek Bridge.....		Bridge.....	40,000
	Total Monterey County.....			\$293,000
NEVADA COUNTY				
17	Through Grass Valley (portions).....	0.5	Resurfacing.....	\$5,000
	Total Nevada County.....			\$5,000
PLUMAS COUNTY				
21	Rock Creek to Storrie.....	2.5	Grading.....	\$195,000
21	North Fork Feather River; bridges at Tobin, Storrie and Rock Creek.....		Bridges.....	200,000
	Total Plumas County.....			\$401,000
SACRAMENTO COUNTY				
3	North Sacramento to Ben Ail.....	1.4	Landscaping.....	\$7,500
3	American River Bridge near Sacramento.....		Landscaping.....	200
4	Cocumnes River Bridge to McConnell.....	0.3	Landscaping.....	500
100	Steamboat Slough to Ryde.....	3.0	Grading and surfacing.....	30,000
	Total Sacramento County.....			\$38,200
SAN BENITO COUNTY				
22	Route 2 to San Juan Bautista.....	3.5	Grading and surfacing.....	\$73,000
	Rocks Road, San Juan to Prunedale Cutoff.....		Landscaping.....	5,000
	Total San Benito County.....			\$78,000
SAN JOAQUIN COUNTY				
5	French Camp to Stockton.....	3.6	Grading and paving.....	\$114,000
Feeder Rd.	Fresno Ave. grade separation, Santa Fe Railroad south of Stockton.....			20,000
	Total San Joaquin County.....			\$134,000
SAN MATEO COUNTY				
68	South San Francisco Subway, S. P. R. R.....		Structure.....	\$190,000
2	Daly City—Mission Street; Colma to junction San Jose Avenue.....	1.2	Grading and paving.....	187,000
2	San Mateo—3d Avenue to Crystal Springs Road; San Mateo Creek Bridge.....	0.2	Grading, paving, structure.....	35,000
105	Skyline Blvd. to Half Moon Bay.....	2.7	Grading and surfacing.....	178,000
56	Skyline Blvd. to junction Alemany and Junipero Serra Blvds.....	1.6	Grading and paving.....	150,000
	Total San Mateo County.....			\$740,000
SANTA CLARA COUNTY				
68	Agnew grade separation, S. P. R. R.....		Structure.....	\$200,000
Feeder Rd.	4th Street extension; N. city limits San Jose to Bay Shore Blvd.....	1.2	Grading and paving.....	128,000
	4th Street extension; N. city limits San Jose to Bay Shore Blvd.....	1.2	Grading and paving.....	128,000
	Total Santa Clara County.....			\$328,000
SHASTA COUNTY				
3	North approach Sacramento River Bridge at Redding.....		Grading, paving, structure.....	\$53,000
3	South approach Sacramento River Bridge at Redding.....		Grading, paving, structure.....	83,000
20	Redding—overhead crossing S. P. R. E. on Eureka Way and approaches.....		Grading, paving, structure.....	40,000
	Total Shasta County.....			\$176,000
SIERRA COUNTY				
29	State line to Route 21 (see Lassen County).....	3.2	Grading and surfacing.....	\$43,000
25	Yuba River at Downville; bridge and approaches.....		Grading, paving, structure.....	35,000
	Total Sierra County.....			\$78,000
SISKIYOU COUNTY				
72	Pineland easterly.....	10±	Grading.....	\$150,000
	Total Siskiyou County.....			\$150,000

**PROGRAM OF 1935 FEDERAL AID APPORTIONMENTS
FOR NORTHERN COUNTIES—Continued**

Route	Location	Length, miles	Improvement	Amount
SOLANO COUNTY				
7	Cordelia subway.....		Landscaping.....	\$750
7	Fairfield—through city.....	0.7	Resurfacing.....	25,000
Feeder Rd.	Liberty Island Road: Cache Slough northerly.....	2.0	Grading and surfacing.....	10,000
	Total Solano County.....			\$35,750
SONOMA COUNTY				
1	Santa Rosa—Mendocino Street: N. city limits to 4th Street.....	1.0	Grading and paving.....	\$75,000
	Total Sonoma County.....			\$75,000
STANISLAUS COUNTY				
110	San Joaquin River Bridge, Maze Road.....		Bridge and approaches.....	\$100,000
	Total Stanislaus County.....			\$100,000
SUTTER COUNTY				
15	Yuba City—Colusa Avenue: Route 3 to West city limits.....	0.5	Widening, shoulders, drainage.....	\$2,500
87	Robbins to 2.3 miles south.....	2.5	Surfacing.....	30,000
	Total Sutter County.....			\$32,500
TEHAMA COUNTY				
3	Subway line change at Red Bluff.....		Grading and surfacing.....	\$20,000
	Total Tehama County.....			\$20,000
YOLO COUNTY				
6	M Street subway to Sacramento River bridge.....	0.4	Landscaping.....	\$20,000
7	Woodland—East Street: South city limits to Main Street.....	0.5	Grading and paving.....	35,000
	Total Yolo County.....			\$55,000
YUBA COUNTY				
3	Widening 7 bridges: Dry Creek, Best Slough, Kimball Creek, Reed Creek, Hutchinson Creek, Branches Reed Creek.....		Widening bridges.....	\$50,000
15	Marysville—Subway to East city limits.....	1.0	Grading and surfacing.....	5,000
	Total Yuba County.....			\$55,000

PROGRAM OF 1935 FEDERAL AID APPORTIONMENT FOR SOUTHERN COUNTIES

Route	Location	Length, miles	Improvement	Amount
IMPERIAL COUNTY				
27	Highline Canal to East Side Sand Hills.....	27.5	Oiled shoulders.....	\$50,000
187	Alamo River Bridge east of Brawley.....		Bridge.....	24,000
26	Bridge 0.7 mile west of Calexico.....		Bridge.....	5,000
	Total Imperial County.....			\$79,000
INYO COUNTY				
23	Near North county line.....	0.5	Grading and surfacing.....	\$15,000
23	Near Tinemaha.....	2.0	Grading and surfacing.....	18,000
	Total Inyo County.....			\$33,000
KERN COUNTY				
4	Pierce Road to Tank Farm.....	2.2	Landscaping.....	\$655
4	Delano grade separation S. P. R. R. and approaches.....	1.0	Grading and paving.....	130,000
140	Pumping Plant easterly.....	3.0	Grading and surfacing.....	50,000
	Total Kern County.....			\$180,655
LOS ANGELES COUNTY				
4	Oak Glenn to Saugus.....	4.4	Grading and paving.....	\$98,500
9	5 bridges over Flood Control channels.....		Bridges.....	60,000
60	Las Flores to Winters Canyon: Carbon Canyon Bridge and widen Malibu Creek Bridge.....	3.4	Grading and paving.....	173,000
26	Monterey Park to Mt. View.....	5.2	Grading, surfacing, curbs.....	125,000

**PROGRAM OF 1935 FEDERAL AID APPORTIONMENT
FOR SOUTHERN COUNTIES—Continued**

Route	Location	Length, miles	Improvement	Amount
LOS ANGELES COUNTY—Continued				
60	Long Beach—State Street; Loma Avenue to Hathaway Avenue.....	0.5	Grading and paving.....	\$60,500
60	Santa Monica—California Street Incline to Colorado Street.....	0.8	Grading and paving.....	124,000
26	Monterey Park—Garvey Avenue through city.....	1.6	Grading and paving.....	46,000
4	Los Angeles—Marengo Street; Soto Street to Mission Road.....	1.0	Grading and paving.....	35,000
4	Los Angeles—Marengo Street; overhead structure, Pacific Electric Railway.....		Structure.....	110,000
4	Los Angeles—San Fernando Road near Cascades.....		Structure.....	20,000
2	Los Angeles—Sunset Boulevard; Figueroa to Hillhurst Avenue.....	3.2	Resurfacing.....	60,000
60	Santa Monica—Tunnel under Colorado and Ocean Avenue.....		Structure.....	255,000
60	Santa Monica—Ocean Avenue to Lincoln Avenue.....	0.6	Grading and paving.....	75,000
60	Los Angeles—O and Streets; Wilmington Boulevard to Alameda Street.....	2.0	Grading and paving.....	150,000
60	Long Beach, Signal Hill—State Street; Stanley Avenue to Loma Avenue.....	0.7	Grading and paving.....	60,000
60	Los Angeles, Santa Monica—Channel Road to California Street Incline.....	1.0	Landscaping.....	8,900
168	Cerritos Avenue; State Street to Los Angeles Street.....	4.0	Grading and paving.....	132,000
	Total Los Angeles County.....			\$1,592,900
MONO COUNTY				
23	Bodie Road to Point Ranch.....	3.1	Grading and surfacing.....	\$45,000
	Total Mono County.....			\$45,000
ORANGE COUNTY				
174	Manchester Avenue; Buena Park to Anaheim.....	5.2	Grading and paving.....	\$169,000
181	Glassell Avenue; Seventeenth Street to Fairhaven Avenue.....	1.0	Grading and paving.....	50,000
	Total Orange County.....			\$219,000
RIVERSIDE COUNTY				
26	Beaumont to Cabazon.....	1.0	Eliminate dips.....	\$58,000
26	Banning to Whitewater.....	16.5	Grading, pavement, structure.....	150,000
64	4 miles W. Shavers Summit to Shavers Summit.....	4.0	Grading and surfacing.....	112,000
77	San Jacinto River Bridge S. of Elsinore.....		Bridge.....	25,000
	Total Riverside County.....			\$345,000
SAN BERNARDINO COUNTY				
26	Riverside Avenue to Colton.....	3.5	Grading and paving.....	\$115,000
25	Pomona to Ontario.....	2.4	Landscaping.....	620
43	Subway Santa Fe R. R. S. of Colton and approaches.....		Grading, pavement, structure.....	70,000
26	Colton—I Street through city.....	1.4	Grading and paving.....	145,000
26	Ontario—A Street; San Antonio Avenue to east city limits.....	1.6	Widening and paving.....	35,000
9	San Bernardino—Mt. Vernon Avenue Viaduct.....	0.4	Landscaping.....	2,080
	Total San Bernardino County.....			\$367,700
SAN DIEGO COUNTY				
2	Encinitas to Oceanside.....	10.0	Landscaping.....	\$6,500
12	El Cajon—Main Street; Chambers Street to east city limits.....	0.7	Grading and paving.....	40,000
2	Oceanside—Wisconsin Street to 8th Street.....	1.0	Resurfacing.....	15,000
2	Oceanside—In Oceanside.....	0.2	Landscaping.....	500
198	Through "Narrows" east of Julian.....	1.5	Grading and surfacing.....	30,000
200	Potrero Grade (portions).....	3 ±	Grading.....	50,000
Feeder Rd.	Lake Hodges Road.....	8.5	Grading and surfacing.....	75,000
	Total San Diego County.....			\$217,000
SANTA BARBARA COUNTY				
2	Nojoqui Grade.....	3.7	Grading and paving.....	\$447,000
2	Elwood overhead and approaches.....	0.9	Landscaping.....	280
2	West city limits Santa Barbara to Hollister Avenue.....	2.1	Landscaping.....	1,500
2	Solomon Canyon Slope Experiment.....	0.1	Landscaping.....	5,000
2	Through Santa Barbara.....	3.8	Landscaping.....	11,250
	Total Santa Barbara County.....			\$465,030
TULARE COUNTY				
4	Tulare—J and K Streets through city.....	1.0	Grading and paving.....	\$48,000
134	Tulare to Lindsay.....	6.0	Resurfacing and widen.....	25,000
	Total Tulare County.....			\$73,000
VENTURA COUNTY				
2	Mussel Shoal to Santa Barbara County line.....	3.6	Grading and paving.....	\$240,000
2	Ventura to Mussel Shoal.....	8.5	Landscaping.....	4,000
9	Harmon Canyon (2 miles east of Route 2).....		Culvert, fill and surfacing.....	35,000
	Total Ventura County.....			\$279,000

SUMMARY OF ALL PROJECT ALLOCATIONS—BY COUNTIES

Northern Counties

County	S. H. Funds 87th and 88th fiscal year	U. S. Funds 1935 allotment	County total
Alameda.....	\$2,065,000	\$315,000	\$2,380,000
Alpine.....		33,000	33,000
Amador.....		55,000	55,000
Butte.....	630,000		630,000
Colusa.....	65,000		65,000
Contra Costa.....	460,000		460,000
Del Norte.....	140,000	61,000	201,000
El Dorado.....	153,000		153,000
Fresno.....	695,000	144,800	839,800
Glenn.....		75,000	75,000
Humboldt.....	350,000	18,000	368,000
Kings.....	100,000		100,000
Lake.....	68,000	95,000	163,000
Lassen.....	38,500	85,100	123,600
Madera.....	230,000	325,000	555,000
Marin.....	1,200,000		1,200,000
Mendocino.....	299,000	122,800	421,800
Merced.....		47,000	47,000
Modoc.....	75,000	75,000	150,000
Monterey.....	1,685,000	293,000	1,978,000
Napa.....	116,800		116,800
Nevada.....		5,000	5,000
Plumas.....	272,000	401,000	673,000
Sacramento.....	130,000	38,200	168,200
San Benito.....	100,000	78,000	178,000
San Francisco.....	1,650,000		1,650,000
San Joaquin.....	150,000	134,000	284,000
San Mateo.....		740,000	740,000
Santa Clara.....	425,000	328,000	753,000
Santa Cruz.....	220,000		220,000
Shasta.....	341,000	176,000	517,000
Sierra.....	50,000	78,000	128,000
Siskiyou.....	100,000	150,000	250,000
Solano.....	540,000	35,750	575,750
Sonoma.....	75,000	75,000	150,000
Stanislaus.....	50,000	100,000	150,000
Sutter.....	25,000	32,500	57,500
Tehama.....	275,000	20,000	295,000
Trinity.....	100,000		100,000
Tuolumne.....	100,000		100,000
Yolo.....	285,000	55,000	340,000
Yuba.....	310,000	55,000	365,000
Prison labor camps.....	478,000		478,000
Totals.....	\$14,046,300	\$4,240,950	\$18,287,250

SUMMARY OF ALL PROJECT ALLOCATIONS—BY COUNTIES—Continued

Southern Counties

County	S. H. Funds 87th and 88th fiscal year	U. S. Funds 1935 allotment	County total
Imperial.....	\$377,000	\$79,000	\$456,000
Inyo.....	256,000	33,000	289,000
Kern.....	980,500	180,655	1,161,155
Los Angeles.....	5,225,930	1,592,900	6,818,830
Mono.....	301,400	45,000	346,400
Orange.....	520,000	219,000	739,000
Riverside.....	782,850	345,000	1,127,850
San Bernardino.....	710,000	367,700	1,077,700
San Diego.....	1,044,000	217,000	1,261,000
San Luis Obispo.....	240,000		240,000
Santa Barbara.....	534,000	465,000	999,000
Tulare.....	300,000	73,000	373,000
Ventura.....	1,181,000	279,000	1,460,000
Totals.....	\$12,452,680	\$3,896,285	\$16,348,965

SUMMARY OF TOTALS

	S. H. Funds 87th and 88th fiscal year	U. S. Funds 1935 allotment	Total
Northern counties.....	\$14,046,300	\$4,240,959	\$18,287,259
Southern counties.....	12,452,680	3,896,285	16,348,965
*U. S. Funds.....		120,806	120,806
Grand totals.....	\$26,498,980	\$8,258,041	\$34,757,021

*Federal funds allotted to grade crossing protection not yet distributed to individual projects.

Prevailing Wage Rate Suit Decision Permits Projects to Proceed

THE SUPREME COURT of California, on December 26, 1934, rendered an important decision in a test mandamus proceeding instituted by the Southern California Roads Company, as petitioner, against the Board of Public Works of the City of Los Angeles, as defendant.

The city board refused to execute a contract with the petitioner upon the ground that neither the notice inviting bids for the improvement of Sepulveda Boulevard from National Boulevard to Venice Boulevard, in the City of Los Angeles, nor the draft of the proposed contract specified the general prevailing rate per diem wages in the City of Los Angeles for each craft or type of workman needed to perform the contract.

The section of city street involved was made a part of the secondary State highway system by the Legislature of 1933. The State Department of Public Works, as authorized by law, had entered into a cooperative agreement with the City of Los Angeles whereby the city agreed to handle the construction of this and certain other units of State highways, within the municipal boundaries by direct city contract.

The cost of these improvements was to be provided by the State and the work was to be subject to the approval of the State Department of Public Works.

The successful bidder sought a writ of mandate to compel the execution of the contract, contending that the improvement of Sepulveda Boulevard was a "municipal affair" and that in the performance of such work under the proposed city contract it was not subject to the Public Works Wage Rate Act of 1931.

If, therefore, the contemplated work was a "municipal affair," as this term is used in the Constitution, the Public Works Wage Rate Act, being a general law, would not be applicable to the contract providing for such employment.

However, the Supreme Court ruled that under the existing circumstances the improvement of the street was not a "municipal affair" but was an affair in which the State had a direct and vital interest.

The court denied the petition of the Southern California Roads Company, and, according to the press the City Board of Public Works has since ordered this contract and several similar contracts, affected by the decision, canceled and the proposed improvements are to be readvertised for new bids.

Every Sixth Person in California Dependent on Use of Highways

AUTOMOTIVE, petroleum, and other trades connected with highway transportation provide jobs and wages for one out of every six persons employed in wholesale, retail, and service trades in the State of California. This statement, based on recently completed Census Bureau figures for the year 1933, was made by the National Highway Users Conference.

Among other things, the Conference analysis shows:

Out of a total of 131,167 wholesale, retail, and service establishments that operated in 1933 in California, 26,530, or approximately one-fifth were wholly dependent on motor transport.

Of the total pay roll of \$400,140,000 for all wholesale, retail, and service trades, \$70,106,000 or 17.5 per cent, accrued from automotive, petroleum and allied trades.

The total volume of sales for all wholesale, retail, and service business in the State amounted to \$4,115,389,000, of which \$714,500,000 represented purchases by motor vehicle owners of all classes.

"These figures," said Roy F. Britton, Director of the National Highway Users Conference, "enable us for the first time to get a clear and accurate conception of the contribution of the highway transportation industries to the economic welfare of the State.

"Except for the continued needs of the motoring public, every fifth business house or service establishment in California would close; every sixth person employed in the wholesale, retail, or service trades would lose his job; and more than one-sixth of the business pay roll of the State would dry up instantly."

Highway Bids and Awards for Nov.-Dec.

COLUSA COUNTY—Street widening in town of Williams, 7th St. from F St. to D St., and E St. from 8th to 6th St., District III, Route 7-15, Sec. Wms. P. F. Bender, Sacramento, \$6,450; Carl R. Fiedler, Sacramento, \$5,882; John Carcano, San Rafael, \$3,472; Y. C. Soda, Oakland, \$4,241; Lee J. Immel, Berkeley, \$3,943. Contract awarded to Albany Cement Contractors, Inc., Albany, \$3,455.00.

CONTRA COSTA COUNTY—Construct R. C. pedestrian subway, Tenth and Black Diamond Streets, at Pittsburg, District IV, Route 75, Section Pit. Independent Construction Co., Ltd., Oakland, \$5,114; A. Soda & Son, Oakland, \$5,985; Alfred T. Howe, Santa Rosa, \$6,112; Oliver S. Almie, San Francisco, \$5,164; Theodor Johanns, San Francisco, \$6,214; Albany Cement Contractors, Inc., Albany, \$5,543; J. J. Ongaro & A. H. Siemer, San Anselmo, \$5,311; Bundesen & Lauritzen, Pittsburg, \$5,580; John Carcano, San Rafael, \$5,620. Contract awarded to Lee J. Immel, Berkeley, \$4,891.00.

FRESNO COUNTY—Steel beam bridge across Kings River with concrete deck, 1½ miles east of Centerville, 1-70', 2-63' and 2-62' spans on concrete piers and abutments. About 1.2 miles roadway approaches to be graded and surfaced with bituminous treated crushed gravel or stone, District VI, Route 41, Section S. Fredrickson & Watson Construction Co., Fredrickson Bros., Oakland, \$85,757; Bodenhamer Construction Co., Oakland, \$69,919; C. W. Caletti & Co., San Rafael, \$73,813. Contract awarded to Wm. C. Horn Company, Pomona, \$66,813.74.

FRESNO COUNTY—Between Selma & Fowler Switch Canal, about 1 mile to be graded and paved with asphalt concrete, Dist. VI, Rt. 4, Sec. A. Valley Paving and Const. Co., Fresno, \$58,164. Contract awarded to Union Paving Co., San Francisco, \$57,634.40.

KERN COUNTY—Under grade crossing at Union Ave., Bakersfield, under A. T. & S. Fe R. R., 2 concrete abutments with wing walls and steel plate girder span. Approaches, 0.26 mile to be graded and paved with Portland cement concrete, Dist. VI, Rt. 4, Sec. Bld. Sharp & Fellows Const. Co., Los Angeles \$71,393; Oscar Oberg, Los Angeles, \$71,633; Griffith Company, Los Angeles \$72,012; Fredrickson & Watson Const. Co., Fredrickson Bros., Oakland, \$82,457; M. B. McGowan, Inc., San Francisco, \$86,968. Contract awarded to Rocca & Co., San Rafael, \$68,617.50.

KERN COUNTY—Between one mile east of Taft and one-half mile west of Taft, about 1.6 miles to be graded and surfaced with bituminous treated crushed gravel or stone, District VI, Route 138, Section A and Taft. Fredrickson & Watson Construction Co., Fredrickson Bros., Oakland, \$45,915; C. O. Sparks, Los Angeles, \$48,240; Griffith Company, Los Angeles, \$48,345; L. A. Brisco, Arroyo Grande, \$49,896. Contract awarded to D. O. C. Construction Co., Robert D. Patterson, Santa Barbara, \$39,873.45.

LASSEN-SIERRA COUNTIES—About 2.8 miles north of Junction Routes 21 & 29 and Nevada State line, about 10.5 miles to be graded and oiled, District II, Route 29, Section E, A. Dodge Construction, Inc., Fallon, Nev., \$100,124; Marrison Knudsen Co., Los Angeles, \$96,893; A. Teichert & Son, Sacramento, \$99,681; Isbell Construction Co., Carson City, Nev., \$107,301; Peninsula Paving Co., San Francisco, \$98,829; George Pollock Co., Sacramento, \$88,783; Fredrickson & Watson Co., Fredrickson Bros., Oakland, \$91,663. Contract awarded to Harms Bros., Sacramento, \$82,884.50.

LOS ANGELES COUNTY—In Long Beach, between Pacific Avenue and Olive Ave., about 0.6 mile, to be graded and paved with asphalt concrete, District VII, Rt. 60, Sec. L.Ech. Sully Miller Const. Co., Long Beach, \$40,787; Oswald Bros., Los Angeles, \$42,117.75; Los Angeles Paving Co., Inc., Los Angeles, \$44,844.75. Contract awarded to Griffith Co., Los Angeles, \$38,522.50.

LOS ANGELES COUNTY—Between Newhall Tunnel and Saugus, about 4.4 miles to be graded and paved with asphalt concrete, Dist. VII, Rt. 4, Sec. E. Southwest Paving Co., Los Angeles, \$92,601; Griffith Co., Los Angeles, \$93,362; George R. Curtis Paving Co., Los Angeles, \$97,670; P. J. Akmadzich, Los Angeles, \$111,133. Contract awarded to Oswald Bros., Los Angeles, \$85,504.90.

LOS ANGELES COUNTY. Between Los Angeles City Pumping Plant and West Channel Road, about 0.3 mile to be graded and paved with asphalt concrete, District VII, Route 60, Section B. C. O. Sparks, Los Angeles, \$7,636; H. E. Cox & Son, Pasadena, \$8,386; L. A. Paving Co., Los Angeles, \$9,888. Contract awarded to Griffith Co., Los Angeles, \$8,350.20.

MONTEREY COUNTY—On Munras Ave., Abrego St., and Fremont St., in the City of Monterey, about 1.4 miles, bituminous surface treatment to be applied, District V, Routes 55 & 117, Section Mon. Granite Const. Co., Ltd., Watsonville, Cal., \$7,667; Tiffany Const. Co., San Jose, \$7,295; Force Const. Co., Oakland, \$10,935; J. L. Conner, Monterey, \$9,589; Leo F. Piazza, San Jose, \$8,961; Walter B. Roselip, San Luis Obispo \$7,829. Contract awarded to L. A. Brisco, Arroyo Grande, \$6,795.70.

MONTEREY COUNTY—Steel bridge with concrete deck across Burns Creek, 46 miles south of Monterey, District V, Route 56, Section D. Harry J. Oser, San Francisco, \$68,537; Bodenhamer Const. Co., Oakland, \$67,065; Fredrickson & Watson Construction Co., & Fredrickson Bros., Oakland, \$74,675; C. W. Caletti & Co., San Rafael, \$69,449; E. A. Hawkins & Co., San Francisco, \$69,756; M. B. McGowan, Inc., San Francisco, \$68,074; Neves & Harp, Santa Clara, \$72,322. Contract awarded to R. R. Bishop, Long Beach, \$64,014.50.

ORANGE COUNTY—Between 0.4 mile east of Peralta School and Gypsum Creek about 3.4 mile to be graded and paved with Portland cement concrete, Dist. VII, Route 43, Sec. B. Basich Bros., Torrance, \$172,061; J. E. Haddock, Ltd., Pasadena, \$199,811; Sander Pearson, C. O. Sparks & Mundo Eng. Co., Los Angeles, \$184,383; J. L. McClain, Los Angeles, \$169,655; Oswald Bros., Los Angeles, \$173,246; Daley Corp., San Diego, \$187,285. Contract awarded to Sharp & Fellows Const. Co., Los Angeles, \$165,487.70.

PLUMAS COUNTY—Bridge across North Fork Feather River at Tobin—One 290' through structural truss span, 2-35' concrete box abutments, District II, Route 21, Section A. C. W. Caletti & Co., San Rafael, \$74,681; Portland Bridge Co., Portland, Oregon, \$83,686; M. B. McGowan, Inc., San Francisco, \$73,691; J. H. Pomeroy & Co., Inc., San Francisco, \$84,952. Contract awarded to Rocca & Co., San Rafael, \$69,469.

SACRAMENTO COUNTY—Repair two bridges near Walnut Grove, one across Georgiana Slough, one across N. Fork Mokelumne River, Dist. X, Rt. 53, Sec. B. Healy Tibbitts Const. Co., San Francisco, \$11,963; Bundesen & Lauritzen, Pittsburg, \$12,024; Ben C. Gerwick, Inc., San Francisco, \$12,417; M. A. Jenkins, Sacramento, \$12,439. Contract awarded to Christian A. Lauritzen, Antioch, \$11,769.70.

SAN BENITO COUNTY—Between Route 2 and San Juan Bautista, about 2.6 miles to be graded and surfaced with crushed run base and oil treated crushed run surfacing, District V, Route 22, Section C. & S.J.B. Peninsula Paving Company, San Francisco, \$61,536; Earl W. Heple & L. A. Brisco, San Jose, \$64,438; Tiffany Construction Co., San Jose, \$62,964; Bodenhamer Const. Co., Condules Const. Co., Oakland & Piedmont, \$82,730; Union Paving Co., San Francisco, \$63,119; Healey Moore Co., Oakland, \$77,781; J. L. Conner, Monterey, \$64,636; J. E. Haddock, Ltd., Pasadena, \$76,058. Contract awarded to A. J. Raisch, \$56,930.50.

SAN BERNARDINO AND RIVERSIDE COUNTIES. Between Calimesa and Banning, about 12.3 miles in length bituminous surface treatment to be applied to shoulders, District VIII, Route 26, Section A-A&B. Match Bros., Elsinore, \$5,927; E. L. Yeager San Bernardino, \$4,990; C. O. Sparks, Los Angeles, \$5,461; H. E. Cox & Son, Pasadena, \$5,291. Contract awarded to Geo. Gardner & Sons, Redlands, \$4,502.90.

SAN DIEGO COUNTY—Between Military Reservation and Canon Street about 1.9 miles to be graded and surfaced with bituminous macadam on crusher run base, District XI, Route 12, Section S.D. B. G. Carroll, San Diego, \$47,405; Walter Trepte, San Diego, \$53,647; Griffith Co., Los Angeles, \$56,383. Contract awarded to V. R. Dennis Construction Co., San Diego, \$43,862.00.

SAN MATEO COUNTY—Between Huron Street and San Pedro Avenue, in Daly City, about 1.7 miles to be

Highway Bids and Awards for November and December, 1934

(Continued from preceding page)

graded and paved with asphalt concrete. District IV, Route 2, Section D.L.C. Pacific States Construction Company, San Francisco, \$207,528; Eaton and Smith, San Francisco, \$213,225; Hanrahan Wilcox Corporation, San Francisco, \$214,538; Fredrickson & Watson Construction Co., Fredrickson Bros., Oakland, \$218,451; The Fay Improvement Company, San Francisco, \$228,917; Chas. L. Harney, San Francisco, \$229,637; A. H. Raisch, San Francisco, \$209,874. Contract awarded to Union Paving Company, San Francisco, \$201,813.00.

SAN MATEO COUNTY—Between 3 miles east of Half Moon Bay and Summit, about 2.7 miles to be graded and surfaced with crushed run base and bituminous surface treatment applied, District IV, Route 105 & 55, Section A.B.C. Granfield, Farrar & Carlin, San Francisco, \$155,177; Fredrickson & Watson Construction Co., Fredrickson Bros., Oakland, \$163,111; Peninsular Paving Company, San Francisco, \$165,653; Bodenhamer Const. Co., Contoules Const. Co., Oakland, \$187,728; N. M. Ball & Harms Bros., Berkeley, \$189,140; A. Teichert & Son, Sacramento, \$199,367. Contract awarded to Mitty Bros. Construction Co., Los Angeles, \$149,865.00.

SANTA BARBARA COUNTY—Between Gaviota Creek & Nojoqui Creek. About 2.8 miles to be graded and paved with Portland cement concrete. Dist. V, Rt. 2, Sec. E.D. Sharp and Fellows Contracting Co., Los Angeles, \$408,032; J. L. McClain, Los Angeles, \$448,743; Gibbons & Reed Company, Burbank, \$389,123; Peninsula Paving Company, San Francisco, \$401,610; Fredrickson & Watson Construction Co., Fredrickson Bros., Oakland, \$396,826; A. Teichert & Son, Inc., Sacramento, \$441,991; Basich Brothers, Torrance, \$423,917; Sander Pearson Co., Sparks & Mundo Eng. Co., Los Angeles, \$376,780; J. E. Haddock, Ltd., Pasadena, \$378,866. Contract awarded to Hanrahan-Wilcox Corporation, San Francisco, \$375,983.25.

SOLANO COUNTY—Between Liberty Island Ferry and point 2 miles northerly about 2.0 miles to be surfaced with untreated crushed gravel or stone. District X Section—Liberty Island Road. Tiffany Const. Co., San Jose, \$9,308; Hayward Bldg. Material Co. Hayward, \$8,580; Ransom E. McCarty, Stockton, \$9,100; Lee J. Immel, Berkeley, \$8,528. Contract awarded to Henry Grimoldi, Napa, \$8,008.

SUTTER COUNTY—Steel and concrete superstructure and parts of abutments of bridge across Tisdale Weir between Knights Landing and Meridian, consisting of 28-39'-0" and two 45'-9 1/2" spans. District III, Route Feeder Highway. Lord & Bishop, Sacramento, \$28,040; E. A. Hawkins & Co., San Francisco, \$28,367; M. B. McGowan, Inc., San Francisco, \$28,987; A. T. Howe, Santa Rosa, \$29,030; Albert H. Siemer and Frank J. Main, San Anselmo, \$29,376.00; C. W. Caletti & Co., San Rafael, \$29,703; Fredrickson & Watson Construction Co., Fredrickson Bros., Oakland, \$32,344. Contract awarded to P. F. Bender, North Sacramento, \$27,023.00.

SUTTER COUNTY—Between 3 miles north of Knights Landing & Robbins, about 2.3 miles to be surfaced with crushed run base. District III, Route 87, Section A. J. B. Reeves, Sacramento, \$24,795; Pacific States Construction Co., San Francisco, \$24,975; E. A. Forde, San Anselmo, \$25,104; Hemstreet & Bell, Marysville, \$25,319; Lee J. Immel, Berkeley, \$25,887; Tiffany Construction Co., San Jose, \$29,935; Southern California Roads Company, \$34,045. Contract awarded to A. Teichert & Son, Inc., Sacramento, \$23,917.75.

TULARE COUNTY—In City of Tulare, about 1 mile to be graded and paved with asphalt concrete. District VI, Route 4, Section Tul. A. J. Raisch, San Jose, \$48,461; Union Paving Co., San Francisco, \$43,702; Stewart & Nuss, Inc., & John Jurkovich, Fresno, \$49,303; A. Teichert & Son, Inc., Sacramento, \$47,898; Valley Paving & Const. Co., Fresno, \$36,658; Southern California Roads Co., Los Angeles, \$44,677; Griffith Co., Los Angeles, \$42,680; Hanrahan-Wilcox Corp., San Francisco, \$46,334. Contract awarded to Basich Bros., Torrance, \$34,202.50.

Modern girl's philosophy: Nobody loves a flat man.

Elimination of Grade Crossings Urged by Bay Magazine Editor

The present hazard at some 240,000 existing grade crossings of which only 30,000 are in some measure protected, will become a much more serious problem with the advent of high-speed trains which are gradually tending to replace the heavier and slower-moving steam propelled rolling stock.

Records show that there are about 2,000 fatalities yearly with three times as many injured by reason of accidents at grade crossing. Based on the value of a life to the State and insurance settlements a vital loss exceeding \$80,000,000 occurs yearly.

Surely such a toll of life and monetary worth is worth the effort and money spent in a program of grade-crossing eliminations. To remove all highway-railroad crossings would entail about \$2,400,000,000 and in the present national emergency it may be possible to allocate \$1,400,000,000 from public works appropriations for these projects.

Grades can be separated at the most dangerous crossings and warning signals installed at the intermediate group. To round out such a complete program elimination of the minor crossings by closing obsolete county and other roads, which in a great percentage of cases is the cheapest, is also necessary.

Grade crossing removals constitute a type of public works project that can be undertaken with a minimum amount of delay and red tape and, figuratively speaking, can be started on a minute's notice.

Let's remove the grade crossing—a relic of the horse and buggy days.—*Western Construction News.*

"Father" of Gas Tax Speaks

One of the sponsors of the original State gasoline tax, levied by Oregon in 1919, C. C. Chapman, editor of "The Oregon Voter," recently delivered an address in which he opposed diversion of gasoline tax revenues to other than highway purposes as a violation of a trust, and a breach of fair dealing with the public. He warned that all advantages of the gasoline tax plan of highway financing would be lost if the revenue were used for other purposes.

Mr. Chapman long has been interested in the development of highways, and was founder and chairman of the executive committee of the Oregon Roads and Development Association. With his associates he devised not only the gasoline tax method of financing State highways, but the idea of using revenue from other motor vehicle taxes, such as registration fees, for highway purposes. This idea, like that of gasoline taxation, now has spread to every State.



Reclamation projects employing S.E.R.A. labor under the direction of the Division of Water Resources provided 29,271 man-hours of work during the past month making a total of 100,662 man-hours of relief labor utilized to date on flood control work. Plans and specifications for enlargement of O'Shaughnessy Dam submitted by the city of San Francisco were approved and an application was received for appropriation of water from San Luis Rey River in San Diego County for irrigation of 9500 acres at a cost of \$1,000,000.

News from irrigation districts, adjudications and other activities of the division are presented in the monthly report of the State Engineer as follows:

FLOOD CONTROL AND RECLAMATION

The several S.E.R.A. relief projects sponsored by the State Reclamation Board and this division, under the direction of this division, continued with the work of clearing flood channels. During this period a total of 29,271 man-hours of relief labor was utilized. The total man-hours of relief labor worked to date is as follows:

	Man-hours
Federal Transient Service, Upper Sutter By-pass	6,408
Federal Transient Service, Tisdale By-pass	720
Federal Transient Service, Lower Sutter By-pass	14,818
S.E.R.A. Project No. 35-B14-27, American River	35,318
S.E.R.A. Project No. 58-B14-15, Feather River above Marysville	27,740
S.E.R.A. Project No. 58-B13-35, Feather River south of Marysville	1,756
S.E.R.A. Project 57-B14-4, Sacramento By-pass	6,528
S.E.R.A. Project No. 35-B14-40, Mokelumne River	7,376
Total	100,662

During the period December 1st to 15th, an average of 288 men has been employed. In the same period the maximum number of men has been 461 and the minimum 134. Tools and facilities must be provided for the maximum number. It is expected that the

average number working hereafter will be approximately 400.

Mokelumne River.

The clearing on the Mokelumne River By-pass was completed on November 27th under the relief project noted above, a total of 7376 man-hours having been employed. This work, together with previous work under CWA in both Sacramento and San Joaquin counties, completely clears the flood channel from Beason Ferry to New Lope Landing.

DAMS

During the month the following applications have been filed:

1. Application for approval of plans and specifications for the construction of the Mad River dam by the City of Eureka in Humboldt County. The dam is to be an arch structure 115 feet in height, to store 19,000 acre-feet, and estimated to cost \$220,000.

2. Application for the repair of the South Lake Ranch dam belonging to the San Jose Water Works, located in the Santa Clara Valley. The application covers drainage of and additions to the fill.

3. Application for the alteration of the Phoenix dam, belonging to the Pacific Gas and Electric Company, located in Tuolumne County, was received December 13, 1934. The work proposed consists of the installation of upstream control works on the outlet conduit.

The application for the repair of the South Lake Ranch dam was approved on December 13, 1934.

Application for approval of the plans and specifications for the enlargement of the O'Shaughnessy dam, submitted by the City of San Francisco, was approved on November 22, 1934.

Construction is under way on the Vasona dam of the Santa Clara Valley Water Conservation District and is progressing satisfactorily.

Work on the placing of additional rock fill and timber facing on the San Gabriel No. 2 dam of the Los Angeles County Flood Control District is under way.

The main fill on the El Capitan dam has been completed and the spillway for the same is complete. Work on the lining of the outlet tunnel is under way.

Construction on San Gabriel Dam No. 1 is principally limited to the work in the cut-off trench as the Los Angeles County Flood Control District is considering submission of plans showing an altered design.

Big Canyon Creek dam in El Dorado County has been completed with the exception of minor cleaning up, etc.

The work on the enlargement of Williamson dam, which has been discontinued for some time, has now

Stream Flows Increased by Storms

(Continued from preceding page)

been resumed with a large construction force and it is expected that the work will be completed shortly.

The Orinda dam enlargement is complete except for the placing of a roadway surface on the fill.

Repairs to the Antioch dam are well under way. The work is being done as an S.E.R.A. project.

The usual inspections of maintenance to observe the condition of structures prior to the run-off season have been carried on in addition to the inspections of construction and repair work.

SACRAMENTO-SAN JOAQUIN WATER SUPERVISOR

Except for maintenance of a few salinity stations and the Delta tide gages, the work under this project during the past month has all been in the office on the compilation of the 1933 and 1934 Water Supervisor reports. These reports will comprise the complete record of the diversions, stream flow, and return flow, throughout the Sacramento-San Joaquin territory and the upper Bay and Delta salinity investigations.

During the past month the flow of the Sacramento River at Sacramento has varied from about 8000 second-feet to a maximum of about 25,000 second-feet, resulting from the storm in the latter part of November. The salinity at all Delta stations has dropped to below 50 parts of chlorine per 100,000 and the sampling is being continued at only the sixteen stations on the upper Bay and in the Delta which are maintained permanently.

WATER RIGHTS

Thirty-seven applications to appropriate water were received during November, 11 were denied and 12 were approved. In the same period 14 permits were revoked and 8 passed to license.

Among the more important applications received during the month was one by Fallbrook Irrigation District seeking to appropriate from San Luis Rey River in San Diego County at a cost of \$1,000,000 for the irrigation of 9500 acres and 8 applications by Nevada Irrigation District seeking to appropriate from Yuba and Bear rivers and tributaries in Nevada and Placer counties.

TOPOGRAPHIC MAPPING

In connection with the cooperative topographic mapping program carried on by the Division and the U. S. Geological Survey some progress was made during November in connection with control surveys in western Tehama and Butte counties.

The final sheet of the Coal Oil Canyon Quadrangle in Kern County is now available. This quadrangle was surveyed in 1931 and covers an area centering in and around the General Petroleum Corporation's Emigdio Pumping Station. The scale is 1:31,680, and the contour interval is 5 and 25 feet.

Final sheets of the Llano Quadrangle and advance sheets of the Hughes Lake, Bear Trap Canyon, Gorman and Black Mountain quadrangles in Los Angeles County are now available. This work was done by the U. S. Geological Survey in cooperation with Los Angeles County.

WATER RESOURCES

Report on the Mojave River Investigation was completed and will be available for distribution shortly after the first of the year. Although there have been several reports on phases of the Mojave River situation, this is the first in which the river is dealt with as a whole.

IRRIGATION DISTRICTS AND SECURITIES COMMISSION

During the month field examinations and reports were made on certain projects for which approval of expenditures had been requested by the following districts.

West Side—The proposed concrete lining of 5456 lineal feet of main and lateral canals to stop seepage and prevent the waterlogging of adjacent lands.

Citrus Heights—Replacement of one-half mile of 12-inch main service pipe line to supply increasing demands for water in a subdivided section at the north end of the district.

CENTRAL VALLEY WATER PROJECT

A meeting of the Water Project Authority of California was held in the office of the Attorney General, Sacramento, at 11.00 a.m. Chairman Earl Lee Kelly, Director of Public Works, presided.

A progress report was rendered by the Executive Officer on the status of the project and the Public Works Administration application before the Federal government; on recent Federal reports—H. R. Document, No. 395, and Natural Resources Board Report; on field investigation on economic aspects by Natural Resources Board; on necessity of adequate and competent representation in Washington, of need for cooperative assistance and effort on the part of the people of California, the Congressional representatives and the State Legislature and of the necessity for providing adequate funds for such purposes.

State Systems Total 382,668 Miles, With 32 per cent Pavement

DURING the past calendar year the State system mileage was increased 10,007 miles according to a report of the American Association of State Highway officials.

The total mileage on State Systems the first of this year was 382,668 miles. Pavements of all kinds are 112,941, being over 32 per cent of the total mileage. This is a gain of over 2 per cent from last year's reported gain. The remaining types of construction on the entire system with percentages are: Treated and low cost mix, 18 per cent (68,702 miles); untreated gravel and macadam, 25 per cent (97,150 miles); sand, clay or other types, 3 per cent (14,454 miles).

There are still remaining earth or unimproved mileages of 22 per cent. This is a gain of but 3 per cent in all classes of improved mileages over the total of last year, despite the fact that the increased mileage added to the system is not so great as that of 1932.

Owing to the increased mileage of unimproved roads added to the State systems the average percentage of dustless or better roads has decreased 1 per cent and now stands at 49 per cent of the total instead of 50 per cent last year. The average surfaced mileage of the State systems for the entire country is now 79 per cent. There is but one State 100 per cent dustless or better, although one is 99 per cent and one is 90 per cent. There are three States between 80 and 90 per cent and six States between 70 and 80 per cent. The other side of the picture shows that there are still nine States less than 25 per cent so improved.

Counting all surfaced mileages we find there are six States entirely out of the mud stage, and twelve more between 90 and 97 per cent so situated. Likewise, there are eleven States between 80 and 90 per cent surfaced. This is a big advance over last year in obtaining some kind of surfacing. Then there were but nine States with the entire system surfaced, now there are twenty-nine States with the entire system surfaced although some of it is but sand.

"Your car is at the door!"
"I know. I hear it knocking."

In Memoriam

WESLEY COOPER, employed for more than twelve years as an equipment operator by the Division of Highways, died on December 1, at his home in Grass Valley after a long illness.

Mr. Cooper was first employed driving truck on the test road in the vicinity of Pittsburg. From that assignment he was sent to Amador County in 1922, and subsequently was transferred to various locations in District III.

He was one of the large number of quiet, undemonstrative men whose faithful, conscientious efforts in every assignment exemplify the spirit of the maintenance forces in the field. His helpful attitude toward his fellow employees made him many friends.

He was born in Indiana and was 49 years of age at the time of his death. He is survived by his wife, Mrs. Maud Cooper.

Mr. Cooper served for three years in the United States regular army in the aviation corps and was stationed at Mather Field in Sacramento.

GASOLINE TAXES HAVE JUMPED 22,500 PER CENT IN 15 YEARS

Gasoline taxes per vehicle have jumped 22,500 per cent in the United States in the past fifteen years, and license fees have risen 48 per cent during the same period. These facts are shown by figures covering these taxes from 1919 to 1934.

In 1919, the first year of the gasoline tax, there were 7,565,446 motor vehicles on the roads, and the average annual gasoline tax paid by each was 13 cents. The average amount paid for license fees was \$8.55. In 1933, 23,827,290 motor vehicles paid an average of \$12.67 in license fees and more than twice as much more, \$29.35, in gasoline taxes.

Dr. F. G. Crawford of Syracuse University recently stated that if gasoline taxes were paid all at once, like license fees, motorists would rebel at the size of the tax.

AUTO TRAFFIC INTO CANADA

Approximately 3,100,000 automobiles crossed the border into Canada during 1933, according to a report reaching the Automobile Club of southern California. This was the largest volume of tourist auto traffic across any international boundary ever recorded.

"When you go auto riding do you act quickly in a traffic emergency?"

"No, my wife stutters."

"Darling," asked the dumb bride making out the daily budget, "should the light bill be charged to 'current expenses'?"

STATE OF CALIFORNIA
Department of Public Works

Headquarters: Public Works Building, Eleventh and P Sts., Sacramento

FRANK F. MERRIAM.....Governor
EARL LEE KELLY.....Director
JUSTUS CRAEMER.....Assistant Director
EDWARD J. NERON.....Deputy Director

DIVISION OF HIGHWAYS

CALIFORNIA HIGHWAY COMMISSION

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TIMOTHY A. REARDON, San Francisco
PHILIP A. STANTON, Anaheim
FRANK A. TETLEY, Riverside
DR. W. W. BARHAM, Yreka
C. H. PURCELL, State Highway Engineer, Sacramento
JULIEN D. ROUSSEL, Secretary

HEADQUARTERS STAFF, SACRAMENTO

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R. H. WILSON, Office Engineer
T. E. STANTON, Materials and Research Engineer
FRED J. GRUMM, Engineer of Surveys and Plans
C. S. POPE, Construction Engineer
T. H. DENNIS, Maintenance Engineer
F. W. PANHORST (Acting), Bridge Engineer
L. V. CAMPBELL, Engineer of City and Cooperative Projects
R. H. STALNAKER, Equipment Engineer
E. R. HIGGINS, Comptroller

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R. E. PIERCE, District X, Stockton
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General Headquarters, Public Works Building,
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J. J. HALEY, Jr., Administrative Assistant
HAROLD CONKLING, Deputy in Charge Water Rights

A. D. EDMONSTON, Deputy in Charge Water Resources Investigation
R. L. JONES, Deputy in Charge Flood Control and Reclamation
GEORGE W. HAWLEY, Deputy in Charge Dams
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A. N. BURCH, Irrigation Investigations
H. M. STAFFORD, Sacramento-San Joaquin Water Supervisor
GORDON ZANDER, Adjudication, Water Distribution

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HEADQUARTERS

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C. H. KROMER, Principal Structural Engineer
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J. W. DUTTON, Principal Engineer, General Construction
W. H. ROCKINGHAM, Principal Mechanical and Electrical Engineer

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CLARENCE W. MORRIS, Attorney, San Francisco
FRANK B. DURKEE, General Right of Way Agent
C. R. MONTGOMERY, General Right of Way Agent



DIVISION OF PORTS

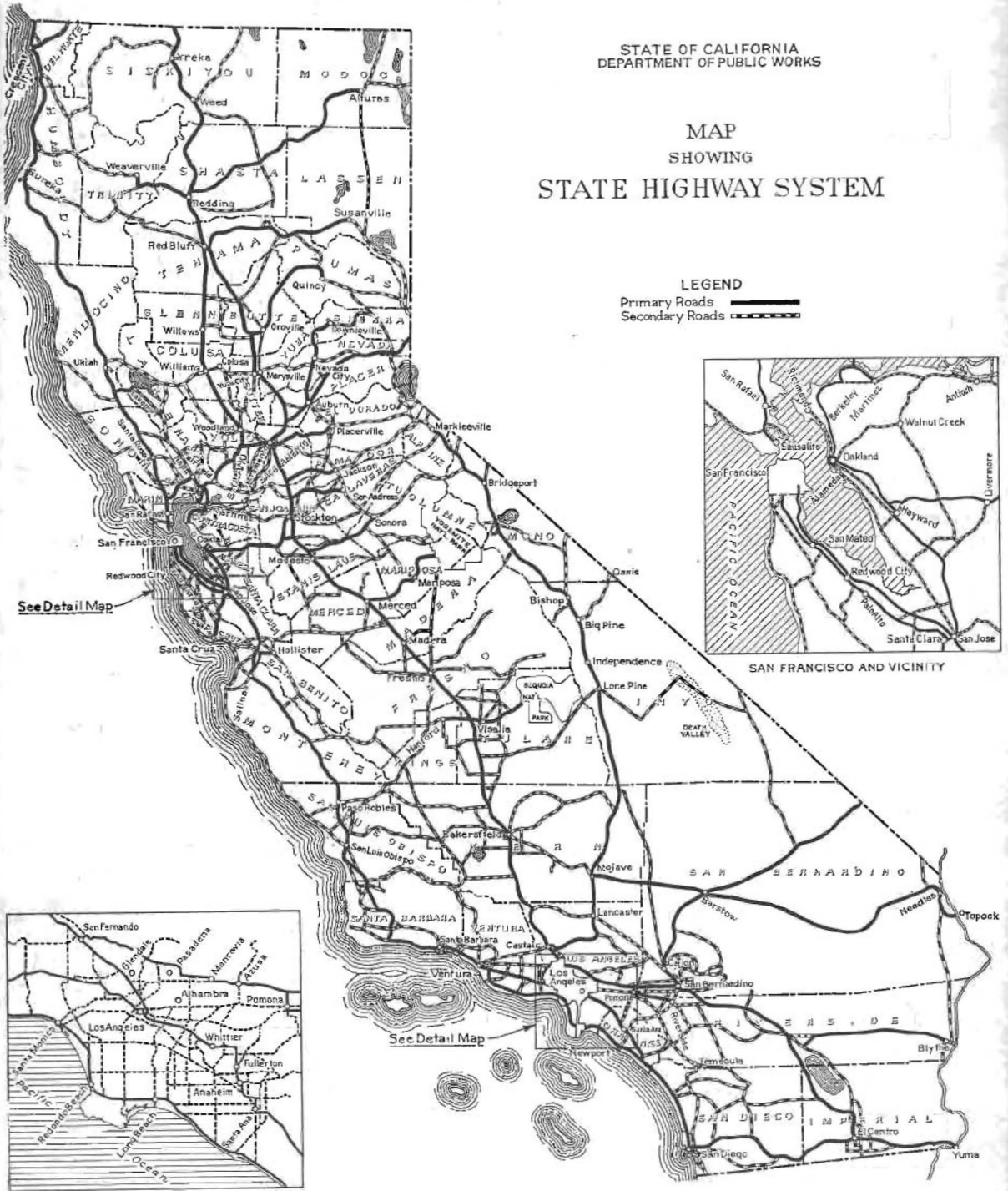
Port of Eureka—William Clark, Sr., Surveyor
Port of San Jose—Not appointed

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

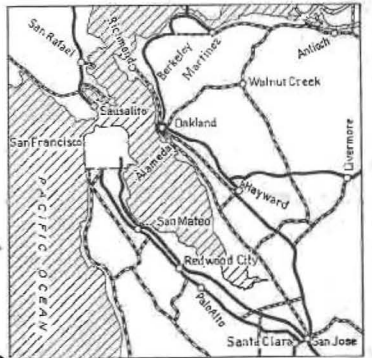
MAP SHOWING STATE HIGHWAY SYSTEM

LEGEND

Primary Roads 
Secondary Roads 



See Detail Map



SAN FRANCISCO AND VICINITY



LOS ANGELES AND VICINITY

See Detail Map