

June 1993

TRANSPORTATION INFRASTRUCTURE

Oversight of Rental Rates for Highway Construction Equipment Is Inadequate



**Resources, Community, and
Economic Development Division**

B-252379

June 25, 1993

The Honorable Max S. Baucus
Chairman
The Honorable John H. Chafee
Ranking Minority Member
Committee on Environment and
Public Works
United States Senate

The Honorable Norman Y. Mineta
Chairman
The Honorable Bud Shuster
Ranking Minority Member
Committee on Public Works and
Transportation
House of Representatives

On federal-aid highway projects, unanticipated costs for equipment can arise as a result of work that was unforeseen at the time a highway construction contract was awarded. Data on the actual costs for equipment used for such additional, unanticipated work are usually not available, so the states and contractors generally use one of several published rental rate guides to determine these costs.¹ In using the guides to calculate rental rates, the states should ensure that these rates conform to the Federal Highway Administration's (FHWA) policy guidance on rental rates and to overall federal requirements for contracting costs.

Section 1093 of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 requires GAO to complete a study on the equipment rental rates the states use to reimburse contractors for unanticipated work on federal-aid highway projects. We agreed with the Senate Committee on Environment and Public Works and the House Committee on Public Works and Transportation to (1) identify the basis on which the states establish equipment rental rates, (2) assess whether the states are establishing rental rates that properly approximate the contractors' actual equipment costs, and (3) determine whether FHWA is adequately overseeing the way the states use the guides to establish their rental rates.

¹In this report, "states" refers to the 50 state highway or transportation departments and such departments in the District of Columbia and Puerto Rico.

Results in Brief

Of the 52 departments of transportation, 47 use a standard rate guide published by Dataquest, Inc., an independent company of the Dun and Bradstreet Corporation. Of the remaining five states, two use a U.S. Army Corps of Engineers' guide, one uses a guide published jointly by Dataquest and the Associated General Contractors of America, and the other two—Illinois and California—have developed their own rate guides. Illinois' guide is closely patterned after a Dataquest guide. California's guide, however, is not patterned after a standard rate guide. California's internal auditors found that the rates in this guide are excessive compared with those of standard rate guides and contain costs not allowed under federal requirements for contracting costs. California's department of transportation has already taken some steps to lower its rates and plans further reductions to bring them closer to those in other rate guides. However, after the planned reductions, California's rates will still be about 10 percent higher than the standard rates used by most states.

Of the 52 departments of transportation, 28 were establishing rental rates improperly because they did not follow all of FHWA's policy guidance on rental rates, did not adhere to some of the rate guides' methodologies, or did not fully recognize cost factors already accounted for in the rate guides. For example, six states made duplicate payments for overhead because they did not realize that overhead costs were already provided for in the rate guides they used. Furthermore, FHWA officials allowed federal funds to be used to pay these duplicate overhead costs because they were not familiar enough with standard rate guides to realize that duplicate payments were being made.

FHWA's management and oversight of how the states establish equipment rental rates has been inadequate. First, FHWA's rental rate guidance was not incorporated into highway program and policy manuals. As a result, some FHWA field officials we contacted could not even find copies of the guidance. In fact, FHWA field offices had approved state rental rates that clearly did not adhere to FHWA's policy guidance. Second, FHWA has not provided guidance on certain points, such as how the discounts that contractors receive when they purchase equipment should be treated in determining rates. Finally, FHWA field offices were generally unaware of the problems we identified because they do not systematically review the rental rates the states use as part of their contract reviews or overall management reviews of the state departments of transportation. FHWA's inattention has allowed many states to use rates that are contrary to the agency's policy guidance and to accepted rate-setting methodologies. The

states' use of these rates ultimately results in either higher equipment costs than allowed or inequitable treatment of contractors.

Background

Work unforeseen at the time a contract is awarded is often necessary to complete highway construction projects. In fiscal year 1991, unforeseen work resulted in an estimated \$135 million in equipment costs. Unanticipated work can arise, for example, if a state discovers during a construction project that a large drainage pipe is needed for a section of the highway. Data on the actual costs of equipment used for such additional, unanticipated work are usually not available, primarily because it is difficult to match the total cost of equipment over its life cycle with the costs incurred during the shorter periods the equipment is actually used on a particular construction project.

Usually, the state and the contractor successfully negotiate a price for unanticipated work and execute a supplemental agreement to the construction contract. In formulating the cost proposal for such additional work, the contractor may use standard rate guides to calculate the equipment costs. But the proposal also includes other related costs, such as those for materials and labor. State departments of transportation and FHWA generally evaluate and accept a contractor's proposal for unanticipated work on the basis of overall costs. They do not evaluate the equipment costs separately.

However, when negotiations on the cost of unanticipated work are unsuccessful, the work is performed under what the states generally refer to as force-account provisions.² Under the force-account method, the states use rental rate guides to determine how much to pay contractors for equipment. Among the standard guides used are the Rental Rate Blue Book, commonly referred to as the Blue Book, published by Dataquest, Inc., an independent company of the Dun and Bradstreet Corporation not affiliated with any construction industry groups; the Construction Equipment Ownership and Operating Expense Schedule, published by the Corps of Engineers; and the Contractors' Equipment Cost Guide, published jointly by Dataquest and the Associated General Contractors of America. These guides classify equipment costs into two overall categories: ownership costs and operating costs. Ownership costs generally include capital and major repair costs, depreciation, and

²In this report, we use the term "force account" as the state departments of transportation and FHWA use it in relation to unanticipated work—to describe construction work performed by contractors when no price has been agreed upon. However, the term typically refers to the use by a public agency or utility of its own personnel and equipment for construction work.

equipment-related overhead. Operating costs include the costs of fuel, lubricants, and routine maintenance and repairs. The standard guides publish separate rates for ownership and operating costs. The states combine these rates to calculate the rental rates paid for each type of equipment.

As previously mentioned, particular reliance is placed on rate guides when the contracting parties are unable to agree on the costs for unanticipated work. About \$7 million in equipment costs for federal-aid highway construction resulted from this situation in fiscal year 1991. Even when the states and contractors agree on overall costs for unanticipated work, they may use rate guides as the basis for determining equipment costs. About \$128 million in equipment costs resulted from this situation in fiscal year 1991. Thus, equipment costs for unanticipated work in fiscal year 1991 totaled about \$135 million.

FHWA allows the states to use the standard rate guide of their choice or develop their own rental rate guides. However, any rental rates the states establish for contractor-owned equipment must adhere to the cost principles set out in the Federal Acquisition Regulation (FAR), as codified in chapter 48, part 31.105, of the Code of Federal Regulations. According to an official in the Office of Fiscal Services at FHWA headquarters, the Secretary of Transportation established the principles in 48 C.F.R. part 31 as the applicable cost principles when common grant management rules—49 C.F.R. 18—were issued in March 1988. Before that, this official said, the Office of Management and Budget's (OMB) Circular No. A-87 was considered the governing federal cost principle for the states' use of equipment rental rates because the U.S. Department of Transportation's (DOT) regulations contained no direct reference to the application of the FAR's principles. Provisions in OMB Circular No. A-87 still apply when the state departments of transportation use the rate guides to determine reimbursement when their own equipment is used on federal-aid highway projects.

Under the cost principles in the FAR, equipment rental charges are limited to actual costs, when available. When the actual costs cannot be determined, the FAR allows the states to specify the use of a particular rate guide containing predetermined rates. However, the rates the states use cannot contain any costs that are otherwise unallowable under the cost principles in the FAR that apply to equipment charges. For example, the predetermined rates that state departments of transportation use for

federal-aid highway projects must be adjusted to remove replacement costs and unallowable interest costs.

When it established overall policies for the use of rental rates, FHWA also issued policy guidance for the states to use in calculating these rates. This policy guidance indicates when federal funding is permitted and establishes limits for specific costs, such as the cost of equipment on standby. These limits are set to better ensure that the rates the states establish using the rate guides approximate actual costs.

FHWA's policy guidance on rental rates is also linked to the cost methodologies of the rate guides the states may elect to use. For example, a standard guide such as the Blue Book, which bases equipment costs on national averages, includes certain adjustments to the rates to account for differences in local costs and working conditions. For instance, adjustments may be needed to reflect higher equipment costs if working seasons are shortened because of inclement weather. FHWA's policy guidance implicitly endorses these adjustments. Making these adjustments ensures that the rental rates reflect local costs as closely as possible. Even though FHWA's guidance is implicit, the states must follow the basic methodology in the rate guides to fulfill FHWA's overall policy of ensuring that rates approximate actual costs.

States Generally Base Rental Rates on Standard Rate Guides

Almost all the states use one of the standard rate guides. Of the 52 state departments of transportation, 47 use the Blue Book published by Dataquest. Of the remaining five states, two use the Corps of Engineers' guide, one uses the Contractors' Equipment Cost Guide, and the other two—Illinois and California—have developed their own rate guides. Illinois' guide is closely patterned after the Blue Book, but California's guide is not patterned after a standard rate guide.

The rental rates used by the California transportation department (Caltrans) significantly exceed the Blue Book's rates. As a result, excessive charges have been incurred for equipment rental. FHWA officials noted that the Blue Book's rates are the maximum allowed for federal-aid highway funding; Caltrans' rates are thus contrary to this policy. FHWA officials explained that the policy on maximum permissible rates was established in January 1988 because FHWA considered that the Blue Book's methodology covered all eligible equipment costs. However, analyses by Caltrans' internal auditors showed that Caltrans' rates exceeded the Blue Book's rates by an average of 36 percent for 18 pieces of equipment

analyzed. The analysis showed that for the 9-month period from June 1989 to March 1990, Caltrans paid contractors over \$2 million more using its rates than it would have paid using the Blue Book's rates. Officials in Caltrans' construction division agreed that the higher rates were not justified, and they are taking steps to reduce the rates.

The internal audit, completed June 30, 1992, further disclosed that Caltrans' methodology for determining rental rates included unallowable and excessive costs because it (1) used the current list price (or replacement cost) rather than the original purchase price to calculate depreciation costs and (2) allowed significantly more major repair and overhaul costs than the Blue Book does.

An engineer in Caltrans' Verification Section—the section that administers the rate system—said that within the last 3 years, Caltrans has reduced its rates for major overhaul and repair by about 15 percent, bringing these rates closer to the Blue Book's rates and the contractors' actual costs. The Chief of the Verification Section said that with the publication of its next rate guide in July 1993, Caltrans plans to further reduce its rates. Even with the planned changes, however, Caltrans' estimates show that the rates will still be about 10 percent higher than the Blue Book's rates and thus will not fully adhere to FHWA's policy on maximum permissible rates. The Section Chief said that Caltrans' goal is to further reduce major repair and overhaul costs to bring the rates closer to the Blue Book's rates.

In addition to including rates that exceed the Blue Book's rates, Caltrans' rental rate guide includes equipment depreciation costs that are unallowable under the FAR's cost principles. Caltrans' guide allows equipment costs to be determined by using current retail costs—the equivalent of replacement costs. Under the FAR's principles, replacement costs may not be used to determine equipment costs. As a result, portions of the equipment ownership costs that Caltrans has paid to contractors may be subject to recovery by FHWA. It was not feasible for us to determine the precise amount of overpayment. But available data indicate that the state may have overpaid contractors by several million dollars since 1986, when FHWA determined that the higher depreciation costs associated with replacement costs were ineligible and issued policy guidance requiring states to comply with the federal cost principles that disallow the use of replacement costs. (See app. I for additional details on California's methodology for calculating equipment rental rates.)

Many States Establish Rental Rates Improperly

FHWA provides policy guidance and approves rate guides to help ensure that the states use rental rates that fairly approximate the contractors' actual costs of owning and operating equipment. However, we found that 28 states were calculating rental rates improperly for a variety of reasons. These reasons included not using a rate guide's methodology properly or not following some of FHWA's policy guidance. Specifically, some states have not (1) prevented duplicate reimbursement for overhead costs for equipment, (2) recognized equipment discounts the contractors received at the time of purchase, and (3) limited rates for equipment that is on standby or idle to the level stated in FHWA's guidance. Some states are also either using improper methodology or not following FHWA's policy guidance on how to adjust rental rates for standard regional cost differences, mobilization costs, and short-term equipment use. (These issues are discussed in app. II.) When the states do not properly adjust rates, contractors are either paid more than FHWA allows or not paid enough to cover all of their eligible equipment costs.

States Pay Duplicate Overhead Costs

Of the 52 departments of transportation, 10 were adding payments for overhead costs that either directly or potentially duplicated overhead costs already included in the standard rental rates. Of these 10 states, 6 were paying the contractors amounts 5 to 15 percent higher than the Blue Book's rates to cover equipment-related overhead costs. The overhead payments made by these six states are duplicate payments because the Blue Book's rates provide allowances for equipment overhead, including costs for insurance, property taxes, storage, licenses, and record-keeping. State transportation officials in these states were often unaware that overhead costs were already recognized in the rates published in the guides. Furthermore, FHWA's division offices in the six states were allowing federal funds to be used to pay duplicate overhead costs because they were not familiar enough with the Blue Book's method for establishing rates to know that the states were duplicating these costs.

Four other states were potentially duplicating equipment overhead costs included in the Blue Book's rates because they were adding from 10 to 15 percent for unspecified overhead and profit. These states do not separate the amounts allocated for profit and overhead, and officials could not identify the costs covered by the additional overhead rate. FHWA division offices had also approved federal funding for these additional overhead costs without ensuring that they were not duplicating the overhead costs included in the published rates.

State Rental Rates Do Not Reflect Discounts Received by Contractors

Equipment purchasers commonly receive discounts on manufacturers' list prices, but the states generally are not adjusting rental rates to reflect these discounts. Three states use rate guides that adjust rates for discounts. The Corps of Engineers applies an average 7.5-percent discount rate (15 percent for highway trucks) in calculating the rates in its guide. The Contractors' Equipment Cost Guide incorporates discounts ranging from about 2 to 15 percent in its rates, depending on the type of equipment.

However, 47 of the 52 departments of transportation use the Blue Book, which does not incorporate discounts in its published rates. In lieu of directly including discounts, the Blue Book instructs users on how to adjust rates to compensate for discounts. We discussed this provision with 24 states and found that none of them were making the adjustments for discounts. Generally, state highway officials said they were not adjusting rates for discounts because they were not aware of the provisions in the Blue Book for making such adjustments. Also, the Blue Book's methodology requires that data on discounts for equipment be obtained from the contractors, which some state officials considered too difficult to do. FHWA's policy guidance does not mention the use of adjustments for discounts. Because FHWA accepts both those rate guides that adjust list prices for discounts and those that do not, it has not consistently implemented its policy of requiring rental rates to approximate actual equipment costs.

State transportation officials in the 24 states we contacted generally contended that if the rates need to be adjusted for discounts, the rate guide publishers should gather the data for inclusion in their rates. Dataquest, the publisher of the Blue Book, currently collects some discount data when it surveys contractors, and Dataquest officials said that average discounts by equipment type and geographical region could be developed as a guide for the states to use in adjusting rental rates. However, Dataquest officials said that they would have to gather and analyze more data before including discounts in the Blue Book's rates. In addition, Dataquest officials said that it would be difficult to accurately estimate equipment discounts. Nevertheless, these officials also recognize that discounts are common and that failure to include them in rate calculations leads to artificially high equipment rental rates.

States Treat Compensation for Standby Equipment Differently

Of the 52 departments of transportation, 11 were deviating from federal policy guidance on standby rates. In a policy guidance memorandum issued by FHWA headquarters to its regional offices on November 7, 1988,

federal funding was restricted to 50 percent of the ownership rate for equipment that is on standby or idle at the project site.³ As FHWA noted, the rates in the standard guides are generally based on usage and time. Since there is no wear and tear on the equipment during idle time, most rates in the guides need to be modified to eliminate any usage costs while the equipment is on standby. Furthermore, FHWA noted that when the courts have ruled on contractors' claims for standby costs, they have normally reduced the published ownership rental rates by 50 percent. However, the American Road and Transportation Builders Association (ARTBA), which represents construction contractors, disagrees with FHWA's position and believes the standby rates should be based on the method illustrated in the Blue Book.⁴ Appendix III contains a more detailed discussion of ARTBA's and FHWA's positions on standby rates.

Seven of the 11 states were paying standby rates ranging from 75 to 100 percent of ownership rates. Three other states were paying variable standby rates totaling over 50 percent of ownership costs because they were including all depreciation costs. In addition, under California's scale for standby rates, contractors were paid from 10 to 70 percent of the ownership rates, depending on the type of equipment.

State officials generally said they were paying more than FHWA allows because they were unaware of FHWA's policy. FHWA division officials responsible for 7 of the 11 states said they were approving federal funding for the higher levels because they were unaware of the restrictions. However, FHWA division officials in the other four states were limiting federal financial participation to the 50-percent standby rate and making the states responsible for compensation above this rate.

FHWA's Management of States' Use of Rental Rates Has Been Inadequate

FHWA field offices—specifically, FHWA division offices in the states—have contributed directly to the problems we identified by approving state rate-setting procedures that did not adhere to FHWA's policies. FHWA's overall policy on rental rates is based on the principle that rates should approximate the contractors' actual costs of owning and operating equipment. However, FHWA has not ensured that the rates that the states actually pay follow this principle, for three primary reasons.

³Ownership costs generally include capital and major repair costs, depreciation, and equipment-related overhead.

⁴Because there is no industry standard for calculating standby rates, the Blue Book includes an example to illustrate one method of calculating these rates. Under this method, all depreciation costs are included. However, the guide alerts the states that FHWA does not allow federal funding for standby rates that exceed 50 percent of the ownership rates.

First, FHWA's policy guidance on rental rates is not included in highway program and policy manuals. As a result, some FHWA division officials we contacted were not familiar with the policy guidance, and others could not even find copies of the guidance. FHWA issued its policy guidance on equipment rental rates following a DOT Inspector General's audit in 1986. This audit found that the states were using rental rates that did not comply with federal cost principles because of inadequate management oversight by FHWA. FHWA issued the policy guidance to its regional and division offices in a series of memorandums over a period of about 2 years ending in November 1988. However, the guidance was not formally incorporated into FHWA's highway policy manuals. Partly because of the ad hoc manner in which the guidance was disseminated, 8 of 38 FHWA division offices that we contacted on this issue were unable to locate the guidance. Also, in several instances FHWA division officials seemed unclear about the intent of the policy guidance and the way they were to apply it in evaluating the states' policies and practices in using rental rate guides.

Second, the policy guidance that FHWA issued does not cover certain areas that directly affect the way rental rates are calculated. For example, as previously discussed, FHWA has not developed policy guidance on discounts that contractors receive when purchasing equipment. Also, as discussed in appendix II, FHWA has not provided clear guidance on making adjustments to account for cost differences in different geographic regions and climates.

Third, FHWA's division offices do not, as part of their contract reviews or overall management reviews of state departments of transportation, systematically review the rental rates the states use. Through its guidance on rental rates, FHWA establishes a general oversight role for its division offices. FHWA division officials said they generally fulfill this responsibility by reviewing and approving the states' highway construction specifications, which contain policies and procedures for using equipment rental rates. However, these reviews of specifications rarely focus on the rental rate provisions. As pointed out earlier, FHWA division officials were often unaware that the states were not following FHWA's policies and had even approved procedures some states used to establish rental rates that did not conform to FHWA's policies. Furthermore, the management reviews that FHWA division offices perform periodically of state departments of transportation focus on major programmatic areas, such as highway design and construction, and rarely address equipment rental rates.

The situation in California also illustrates the effects of inadequate FHWA oversight. On December 5, 1986, a few months after DOT's Inspector General had reported that some standard rate guides used by other states included unallowable costs, the FHWA Division Administrator responsible for California requested that Caltrans review its rates to determine whether they complied with federal cost principles. In its response, Caltrans did not disclose any areas of noncompliance with federal cost principles. However, following a subsequent analysis that it performed in early 1989 at the request of the Division Administrator, Caltrans reported to the FHWA division office in California that its rates did not comply with the federal requirement that replacement costs be eliminated in determining equipment depreciation. In this correspondence, Caltrans indicated that its methodology was under further study and could be changed in the next revision to its rate guide.

The FHWA division office continued to raise the issue of compliance with federal cost principles until, in early 1991, the Division Administrator asked Caltrans to perform an internal audit to respond directly to FHWA's concerns. Caltrans complied, and its June 30, 1992, audit report confirmed that the concerns FHWA had initially raised in 1986 were valid.

According to the Assistant Division Administrator, after the internal audit was completed, FHWA informed Caltrans that it would have to accept federal cost principles and follow FHWA's policies for establishing rental rates that were no higher than the Blue Book's rates. The Assistant Division Administrator said that Caltrans had agreed to change its rates to bring them closer to those in the Blue Book and into compliance with federal cost principles on replacement costs. However, it took FHWA's management over 6 years to take decisive action toward resolving Caltrans' rental rate problems. The Assistant Division Administrator said that the division office did not take action more quickly because of (1) the relatively low priority of rental rates in FHWA's oversight of state highway program activities; (2) the unavailability of FHWA staff to review, in detail, the state's application of rental rates; and (3) Caltrans' continued assurances, in response to FHWA's questions, that the state's rate structure either complied with federal requirements or could be made to comply in upcoming revisions to the rate guide.

Five other states have changed or plan to change their policies on rental rates as a result of our questioning during this review why they were not adhering to FHWA's policies. For example, one state revised its policy on standby rates so that it now pays 50 percent of the ownership rate, as

allowed by FHWA, rather than 100 percent. Another state changed its method of calculating rates for short-term equipment use to adhere to FHWA's policy.

Conclusions

The states, with the exception of California, establish equipment rental rates based on methodologies and information contained in standard rate guides. Caltrans recently took steps toward correcting some of the problems with its rental rates and is proposing additional changes that will become effective in 1993.

FHWA's policy for equipment rental rates is based on the underlying principle that rates should approximate the contractors' costs of owning and operating equipment. Although reaching a consensus on what fairly and reasonably constitutes the contractors' costs may be difficult, achieving such a goal is undermined when states deviate from FHWA's policy guidance and basic rate-setting methodology. As a result of such deviations, either equipment costs may be too high or contractors may not be fairly reimbursed for their costs.

FHWA developed policy guidance in response to the DOT Inspector General's 1986 finding that FHWA's management oversight of rental rates used by state departments of transportation was inadequate. However, FHWA headquarters issued the guidance in an ad hoc manner. As a result, some division officials we interviewed did not understand parts of the guidance and others were not even able to find it. Incorporating the policy guidance into official policy manuals or other documents that division officials use to oversee state highway construction activities could help to ensure that division officials are aware of and understand FHWA's requirements for rental rates.

FHWA is not ensuring that states are carrying out its policies on rental rates. As a result, FHWA loses opportunities to reduce equipment costs and creates an impression that "anything goes" when using equipment rental rates. Many of the instances we found of the states not adhering to policy guidance could have been avoided if FHWA had compared the states' rental rate policies and procedures with federal requirements and policies and with the cost methodologies in the accepted standard rate guides.

Recommendations

We recommend that the Secretary of Transportation require the Administrator of FHWA to

- require all state departments of transportation to establish rental rates in accordance with FHWA's policies and with federal cost principles;
- direct Caltrans to comply with the cost principles in the FAR within fiscal year 1993 and, if this does not occur, seek recovery of unallowable costs that result from Caltrans' use of replacement costs to calculate equipment depreciation;
- establish a requirement that the states use rental rates that take into account any discounts the contractors have received on the list price in calculating equipment rental rates for federal-aid highway projects, and work with the states and rate guide publishers to develop discount rates to fulfill this requirement;
- incorporate federal policies and guidance on equipment rental rates into highway policy manuals to ensure that field personnel have the guidance readily available when needed; and
- require FHWA field offices, as part of their contract reviews or general management reviews, to periodically review how the state departments of transportation are applying rental rates to ensure that the states adhere to federal policies and cost requirements.

Agency Comments and Our Evaluation

DOT generally agreed with our overall conclusion that improvements are needed in FHWA's management and oversight of the states' use of equipment rental rates. DOT stated that actions are already under way to enhance FHWA's management and oversight of this aspect of the federal-aid highway program. DOT concurred with three of our recommendations to strengthen FHWA's oversight of equipment rental rates. Specifically, DOT agreed to take steps to ensure that the states' rental rates are in accordance with FHWA's policies and with federal cost principles. DOT also agreed with the recommendation that federal policies and guidance on equipment rental rates be incorporated into highway program manuals and stated that this action was under way. In addition, DOT agreed that FHWA field offices should periodically review how the states are applying rental rates.

However, DOT disagreed with our recommendations on (1) recovering funds ineligible for federal reimbursement from Caltrans and (2) recognizing equipment discounts in calculating rental rates.

Concerning a recommendation in our draft report that funds be recovered from Caltrans, DOT commented that such an action would be neither appropriate nor feasible. As discussed below, we have modified this recommendation. DOT's principal argument was that California's rental rate

guide was used with the full knowledge and approval of the FHWA Division Administrator for California. While we take issue with the contention that the rate guide was used with FHWA's full knowledge and approval, we believe that FHWA's lack of effective oversight contributed to the lack of timely resolution of an identified problem in California. Since DOT has agreed to ensure that FHWA institute corrective measures to bring the states into compliance with federal cost requirements for rental rates in the future, we have modified our recommendation to indicate that recovery of the funds that Caltrans overpaid to the contractors is necessary only if Caltrans does not expedite the changes needed to satisfy the federal requirements on the use of replacement costs. However, we believe that in the future, when a state does not voluntarily comply with any federal cost requirement, FHWA should act quickly and decisively to correct the problem and to recover unallowable costs.

In its comments on our recommendation that discounts be recognized in calculating rates, DOT stated that since the Blue Book has not incorporated discount adjustments in its published rates, it would be counterproductive for the states, on a case-by-case basis, to obtain data on the original purchase price from the contractors and verify this information.

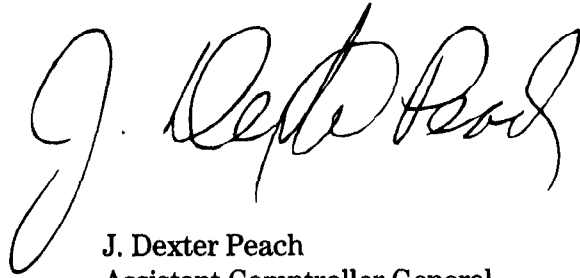
In making our recommendation, we did not intend that the states obtain data on the original purchase price from the contractors. Instead, we intended that the states be required to use rental rate guides that recognize equipment discounts. Two alternatives for recognizing discounts are noted in our report. First, average discounts by equipment type and geographical region could be developed as a guide for the states' use in adjusting rental rates. Second, overall flat-rate discounts could be employed; for example, the Corps of Engineers' rate guide applies an average 7.5-percent discount rate (15 percent for highway trucks).

We made some other changes to respond to DOT's comments on the technical accuracy of our report. DOT's comments are reproduced in appendix IV along with our more detailed response to the comments.

Our review covered 52 departments of transportation in the 50 states, the District of Columbia, and Puerto Rico. We conducted our review from April 1992 to January 1993 in accordance with generally accepted government auditing standards. Appendix V contains a detailed explanation of our scope and methodology.

We are sending copies of this report to the Secretary of Transportation; the Administrator, FHWA; and other interested parties. We will make copies available to others on request.

Our work was performed under the direction of Kenneth M. Mead, Director of Transportation Issues, who can be reached on (202) 512-2834. Other major contributors to this report are listed in appendix VI.

A handwritten signature in black ink, appearing to read "J. Dexter Peach". The signature is written in a cursive style with a large initial "J" and a long, sweeping underline.

J. Dexter Peach
Assistant Comptroller General

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Abbreviations

AGC/A	Associated General Contractors of America
ARTBA	American Road and Transportation Builders Association
Caltrans	California transportation department
DOT	Department of Transportation
FHWA	Federal Highway Administration
GAO	General Accounting Office
ISTEA	Intermodal Surface Transportation Efficiency Act
OMB	Office of Management and Budget

California's Overpayment of Equipment Rental Rates

California's transportation department—Caltrans—has developed its own equipment rental rate guide, but this guide includes costs that are unallowable under federal cost principles and the Federal Highway Administration's (FHWA) guidelines. For example, Caltrans calculates equipment rental rates using acquisition costs based on the current list prices (replacement costs) rather than the original purchase price of the equipment as required by cost principles set out in the Federal Acquisition Regulation—specifically, chapter 48, part 31.105, of the Code of Federal Regulations. In 1986, the Inspector General of the U.S. Department of Transportation (DOT) found a similar problem in the rate guides published by Dataquest. After the Inspector General's audit, FHWA required state departments of transportation to use rate guides that comply with these federal requirements. Dataquest modified its rate guides to comply, but Caltrans did not.

An internal audit at Caltrans, completed on June 30, 1992, confirmed that Caltrans had not changed its procedure of using current list prices, or replacement costs, to calculate depreciation cost allowances. Caltrans' use of replacement costs overstates equipment depreciation costs in rental rates for equipment older than 1 year, thus raising the rates. Caltrans' internal audit report illustrated the effect of Caltrans' methodology with the following hypothetical example: A contractor purchases a piece of equipment in 1980 for \$100,000 and establishes an annual depreciation cost allowance of \$10,000. Under Caltrans' procedures, if the contractor used the same piece of equipment in 1988 and the list price in 1988 was \$150,000, the rental rate would be based on a \$15,000 annual depreciation cost allowance—an overstatement of \$5,000. In this example, assuming an annual average usage of 1,800 hours, Caltrans would have paid the contractor \$2.79 an hour more than federal guidance allows for depreciation costs on that piece of equipment.

Under Caltrans' practice of using replacement costs, there is some overpayment for depreciation whenever contractors use equipment that is over 1 year old. In California, the overpayment could be significant because unanticipated work is frequently done under force account—that is, when the cost of the work has not been negotiated. For example, in fiscal year 1991 Caltrans used equipment on force-account work for a total of about 850,000 hours. Also, Caltrans has continued to use replacement costs for over 6 years after the standard rate guides were changed to eliminate replacement costs from rental rates as a result of the DOT Inspector General's review.

**Appendix I
California's Overpayment of Equipment
Rental Rates**

Caltrans plans to modify its procedures for establishing equipment ownership rates. According to the Chief of the Verification Section, instead of using the current list price to calculate ownership rates, Caltrans plans to use the list price of a piece of equipment in the median year of its manufacture. For example, if a piece of equipment was manufactured during the period 1983 through 1988, Caltrans would use the list price for the 1985 model as the purchase price for establishing ownership rates for all models of that piece of equipment manufactured during that period. The Chief of the Verification Section said that using this methodology would eliminate the expense of surveying contractors to establish a cost base for individual models and establishing adjustments for each model year.

Under the methodology used in the standard guides, the current list price is adjusted by using a cost adjustment factor tied to the actual year in which a piece of equipment was manufactured. Caltrans' proposed method for calculating acquisition costs is inconsistent with this method, which the other 51 state departments of transportation use to adjust purchase prices to comply with federal cost principles. However, the FHWA division office in California accepted Caltrans' planned change as a reasonable solution to the practice of using replacement costs.

Differences in the States' Practices on Rental Rates

Several states are not following a recommended practice of making adjustments for cost variations resulting from regional and climatic differences. Also, the states frequently do not address all mobilization costs in their written policies on the use of equipment rental rates. Finally, a few states are not following FHWA's policy guidance that short-term rental rates are to be based on the average number of working hours in a month.

Several States Do Not Use Standard Regional Cost Adjustments

Standard rate guides provide adjustments to reflect climatic and regional cost differences. The Blue Book's adjustments are based primarily on the effect of weather, topography, and geology on annual use and the differences in equipment-related costs in 11 different geographical regions; the Corps of Engineers' guide is based on similar data for 12 regions. Weather data are used to help establish geographical regions for use in determining differences in average annual equipment usage. The differences in annual use and costs in these regions are stated as a factor relative to the national averages for the same types of equipment. In the Blue Book, for example, a factor of 1.0 means that no adjustment to the published ownership rate is needed, while a factor of 1.09 means that the state department of transportation should increase the published rate by 9 percent to reflect lower expected annual use and higher equipment costs than the national average.

We found that 11 of the 47 states that use the Blue Book were not applying rate adjustments for regional climatic and cost differences. In six states, contractors were paid lower rates as a result; in the other five states, contractors received higher rates even though those states have more favorable weather conditions. State transportation officials gave two primary reasons for not using the regional adjustments. First, in their view the adjustment factors do not accurately reflect the cost conditions in their states. For example, an official in one northeastern state noted that although his state's equipment costs are lower than those of a neighboring state, both states are included in the same cost region. Second, these officials believe that there are too many adjustment zones or areas within a state to be useful. For example, a transportation official in a midwestern state said that the four in-state adjustment areas provided in the Blue Book are too cumbersome to use in adjusting rates.

FHWA's policy guidance on rental rates does not directly address the use of regional cost adjustments. According to the Chief of FHWA's Construction and Maintenance Division, states should adjust rates for regional cost differences because such adjustments are part of standard rate-setting

methodology. FHWA division officials, however, said they were not aware of any requirement that the states use the regional cost adjustments. These officials had approved the rate structures for the 11 states that did not use standard regional cost adjustments.

The Associated General Contractors of America contends that the Blue Book's regional adjustment factors do not accurately reflect actual differences in working seasons between certain geographical areas. Appendix III contains more details on our review of the association's concerns about regional adjustments.

State Rental Rate Policies Often Do Not Address Mobilization Costs

Contractors may incur costs for mobilizing equipment needed to accomplish unanticipated work. These costs generally include the cost of transporting equipment to the job site and any assembly or disassembly needed to transport the equipment. FHWA allows federal funding to be used for all major mobilization costs. For example, FHWA's guidance says that states should use standby rates for equipment while it is being hauled to a construction project.

Our analysis of the rental rate policies of the 52 state departments of transportation showed that only two states incorporated in their written policies all of the mobilization cost factors allowed by FHWA. Generally, the states' written policies on mobilization costs were more restrictive than FHWA's policy guidance. However, in our follow-up interviews with transportation officials in 25 states, officials said that contractors would be paid for most mobilization costs even though provisions for such payments were not in the states' written policies.

Four States Pay Higher Rates for Short-Term Use of Equipment

The Blue Book contains rates calculated for hourly, daily, weekly, and monthly equipment usage. However, FHWA's policy does not allow the states to use published short-term rates—hourly, daily, or weekly rates—on federal-aid highway projects. Instead, FHWA requires the states to calculate an hourly rate by dividing the published monthly rate by 176 hours, the industry standard for the average number of working hours in a month.

According to FHWA headquarters officials, FHWA established its policy on short-term rates because Dataquest adds an escalation factor to those rates to account for any lost work hours associated with short-term use. This escalation factor can materially increase the rental rates. For

**Appendix II
Differences in the States' Practices on
Rental Rates**

example, the published hourly rate for an articulated grader in the 1991 Blue Book is \$34.¹ By comparison, dividing the guide's published monthly rate of \$3,225 by 176 hours yields an hourly rate of \$18.32—a little over half of the Blue Book's hourly rate.

We found that 4 of the 52 state departments of transportation were not following FHWA's policy on short-term rates. One state's construction policy provides for rates as much as twice the basic hourly rate if the equipment is used for very short periods. Two other states use published short-term rates if equipment is to be used for force-account work for a period less than 1 month. The fourth state uses 93 percent of the Blue Book's published hourly rate, under an agreement with the state chapter of the Associated General Contractors of America. Generally, transportation officials in these states said they were paying short-term rates because they were not aware that FHWA's policy prohibited it. Also, FHWA division officials were not aware that the states' practices did not adhere to FHWA's policy.

¹An articulated grader is a piece of equipment that levels dirt and other materials used in roadbed preparation.

Contractor Groups' Concerns About the Fairness of Rental Rates

The American Road and Transportation Builders Association (ARTBA) and the Associated General Contractors of America (AGC/A)—two groups that represent large numbers of highway construction contractors—have questioned the fairness of FHWA's policy on rates paid for equipment kept on standby and the regional cost adjustment factors contained in the Blue Book. In this appendix we present the contractor groups' and FHWA's positions on these two issues and our analysis of the effect these positions have on equipment rental rates.

Standby Rate Policy

FHWA limits federal funding to 50 percent of the ownership portion of the rental rate (operating costs are excluded) for equipment that is on standby or idle at a project site. In FHWA's view, since rental rates are based on the time the equipment is in use—actual annual use—the contractor is fully compensated for depreciation costs when the equipment is in use. FHWA's policy guidance states that court decisions have normally reduced published ownership rates for equipment on standby by 50 percent.

ARTBA disagrees with FHWA's policy on standby rates. The association believes that all depreciation cost allowances should be included in standby rates because the equipment continues to depreciate when idle. FHWA has indicated that it would modify its position on standby rates if contractors would furnish information showing that actual standby costs exceed the current rate limits. ARTBA provided FHWA with opinions from the accounting and construction industry that supported its contention that equipment depreciates when on standby, but it did not furnish actual cost data to satisfy FHWA.

Our analysis of ownership costs in the 1992 Blue Book showed that FHWA's 50-percent limitation on standby rates still allows payment of a significant portion of depreciation—on average about 63 percent of the depreciation cost allowance published in the Blue Book. Also, under the Blue Book's methodology, equipment standby time reported by contractors is factored into the calculation of an average annual working season that is used to establish monthly rental rates. Thus, the rate guide's methodology is designed to enable full recovery of ownership costs over the life of the equipment during actual periods of use.

Regional Adjustment Factors

The AGC/A is concerned that the Blue Book's regional adjustment factors may not accurately reflect actual differences between certain geographical areas in the working seasons during which equipment can be used. For

example, an official in AGC/A's Colorado chapter said that the Blue Book's regional adjustment factor for Montana is understated when compared with the factor used for Southern California. According to his calculations, there is an average difference of about 33 percent in available work time, using 8 months as the average annual working season in Montana versus about 12 months in Southern California. Information he provided showed, however, that the Blue Book's regional adjustments only provides a 10- to 20-percent differential between those two geographical areas. The AGC/A also noted that the Blue Book's adjustment factors for Hawaii (a warm-climate state) would be the same as the factors for most of Utah (a colder-climate state).

Our analysis of the adjustment factors for new equipment listings in the 1991 Blue Book showed that the regional adjustments increased Montana's rates over those for Southern California from 2 to 25 percent (depending on the type of equipment). On average, the regional adjustment factors made Montana's rates higher by about 14 percent than rates that would be paid in Southern California for comparable equipment.

An industry analyst from Dataquest said that differences in weather, geology, and topography play a big part in determining the differences in regional adjustment factors used in the Blue Book. However, the analyst said that Dataquest also includes data on freight costs, mechanics' wages, and sales taxes in calculating the Blue Book's regional adjustments, and the expected rate differences influenced by weather can be offset by these costs. For example, the analyst said that Southern California's higher costs for mechanics' wages and sales taxes could partially offset the weather differences between Montana and Southern California. Also, freight costs to any of the Pacific Islands may offset the effect of longer working seasons at those locations.

Comments From the Department of Transportation



U.S. Department of
Transportation

Assistant Secretary
for Administration

400 Seventh St., S.W.
Washington, D.C. 20590

April 2, 1993

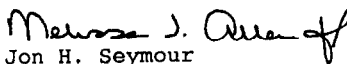
Mr. Kenneth M. Mead
Director, Transportation Issues
U.S. General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

Dear Mr. Mead:

Enclosed are two copies of the Department of Transportation's comments concerning the U.S. General Accounting Office draft report titled, "Transportation Infrastructure: Oversight of Rental Rates for Highway Construction Equipment Is Inadequate."

Thank you for the opportunity to review and comment on this report. If you have any questions concerning our reply, please contact Martin Gertel on 366-5145.

Sincerely,


Jon H. Seymour

Enclosures

DEPARTMENT OF TRANSPORTATION (DOT) REPLY

TO

GENERAL ACCOUNTING OFFICE (GAO) DRAFT REPORT

ON

TRANSPORTATION INFRASTRUCTURE:

OVERSIGHT OF RENTAL RATES FOR

HIGHWAY CONSTRUCTION EQUIPMENT IS INADEQUATE

RCED-93-86

I. SUMMARY OF GAO FINDINGS AND RECOMMENDATIONS

The GAO draft report maintains that the Federal Highway Administration's (FHWA) management and oversight of how states establish equipment rental rates to reimburse contractors for unanticipated work on Federal-aid highway projects has been inadequate. As a result, GAO found that some states used rates that did not fully comply with FHWA's policy guidance and accepted rate-setting methodologies. This in turn may have resulted in greater equipment costs than allowed.

The draft report recommends that the Secretary of Transportation direct the FHWA Administrator to:

- o require all state departments of transportation to establish rental rates in accordance with FHWA's policies and Federal cost principles;
- o determine the amount of Federal funds the California Department of Transportation (Caltrans) has overpaid contractors as a result of using unallowable costs and recover those funds from Caltrans;
- o establish a requirement that states take into account discounts contractors have received on list price in calculating equipment rental rates for Federal-aid highway projects;
- o incorporate Federal policies and guidance on equipment rental rates in highway program manuals to ensure that field personnel have the guidance readily available when needed; and
- o require FHWA field offices to periodically review how states are applying rental rates as part of their contract reviews or general management reviews of departments of transportation to ensure the states adhere to Federal policies and cost requirements.

**Appendix IV
Comments From the Department of
Transportation**

II. DEPARTMENT OF TRANSPORTATION POSITION:

While the draft report has identified opportunities to improve certain aspects of FHWA's oversight of states' equipment rental rate programs, the Department is pleased that the draft report supports the FHWA's rental rate policy as appropriate and reasonable. When properly implemented by states, the policy ensures a fair rate of payment for equipment costs incurred and permits the nation's highway projects to continue apace without unnecessary delays.

Actions are already underway to enhance the FHWA's management and oversight of this aspect of the Federal-aid highway program. The FHWA will ensure that states' rental rates are in accordance with its long standing rental rate policies. The FHWA's rental rate policies and implementing guidance are being incorporated into the Federal-aid policy guide. Finally, the FHWA will require field offices to periodically review how states are applying rental rates as part of their contract reviews or general management reviews of departments of transportation to ensure the states adhere to Federal policies and cost requirements. Additional specific technical comments are provided in Appendix I.

III. RESPONSE TO GAO DRAFT REPORT RECOMMENDATIONS:

Recommendation: Require all state departments of transportation to establish rental rates in accordance with FHWA's policies and Federal cost principles.

Response: Concur. We plan to take steps to ensure that states' rental rates are in accordance with the FHWA's long standing rental rate policies, which are consistent with Federal cost principles.

Recommendation: Determine the amount of Federal funds Caltrans has overpaid contractors as a result of using unallowable costs and recover those funds from Caltrans.

Response: Nonconcur. While the FHWA will take the identified actions to mitigate the concerns enumerated by the GAO in the draft report to avoid similar concerns in the future, recovering funds from Caltrans is neither appropriate nor feasible. The Caltrans rental rate guide was used in the State of California with the full knowledge and approval of the FHWA California Division Administrator (DA) pursuant to the authority delegated to the DA. To recover funds from the state and local governments, which they would not be able to recoup from the contractors without incurring extensive litigation, unfairly penalizes the state and local governments for actions taken pursuant to this full knowledge and approval.

Appendix IV
Comments From the Department of
Transportation

The feasibility of the effort is limited by record availability, logistical difficulties, and the likelihood of high cost for the effort with limited resulting benefit. Recovering these costs would require FHWA and Caltrans to recompute equipment costs for all California Federal-aid projects since 1986. In conformance with Federal requirements, records are retained for only a 3-year period following payment of the final voucher on these projects. As a result, the detailed records necessary for recomputing equipment costs are unavailable for some of the costs for these projects. Where records are available, it would be a lengthy and labor-intensive process to recompute equipment costs that would involve not only FHWA, Caltrans, but also a significant number of local governments.

Recommendation: Establish a requirement that states take into account discounts contractors have received on list price in calculating equipment rental rates for Federal-aid highway projects.

Response: Nonconcur. It is FHWA's basic policy that contractors be reimbursed for actual equipment costs. However, due to the difficulty in obtaining actual cost data, we have accepted the use of standard rental rate guides when such guides conform to FHWA's policy and provide rental rates which reasonably approximate actual contractors' equipment costs. The Dataquest "Blue Book" is the rental rate guide used by 47 of the 52 highway agencies. To date, Dataquest has not incorporated adjustment factors into the "Blue Book" for equipment discounting. However, it does include a note as to how it may be accommodated on a case by case basis. To make these individual adjustments would require obtaining and verifying original purchase price data from the contractor. This would be counterproductive since the basic reason for using the rental rate guide was to eliminate the difficult task of trying to obtain such data from the contractor.

Recommendation: Incorporate Federal policies and guidance on equipment rental rates in the highway program manuals to ensure that field personnel have the guidance readily available when needed.

Response: Concur. Actions are underway to incorporate the FHWA's rental rate policy and implementing guidance into the Federal-Aid Policy Guide. Previously, the FHWA issued guidance through Headquarters memoranda to all field offices. In addition, the guidance was specifically addressed and discussed at numerous meetings with field offices and conferences with states and the industry. Furthermore, the guidance has been incorporated in the Contract Administration Core Curriculum Participants' Manual. Copies of this manual have been provided to each FHWA field office and a majority of the state highway agencies.

**Appendix IV
Comments From the Department of
Transportation**

Recommendation: Require FHWA field offices to periodically review how states are applying rental rates as part of their contract reviews or general management reviews of departments of transportation to ensure the states adhere to Federal policies and cost requirements.

Response: Concur. The Department agrees with the GAO draft report recommendation.

APPENDIX I

General & Technical Comments

1. The Department urges GAO to identify its findings by state. This can either be done in the report, as an addendum, or furnished to the FHWA as additional documentation. Identification of the states which the GAO found to be in noncompliance with FHWA policy will better assure that appropriate action is taken to correct any deficiencies.
2. The cost principles cited by GAO, OMB Circular A-87, do not apply to contractors. The cost principles established by 49 CFR Part 18.22 refer to 48 CFR Part 31, Contract Cost Principles and Procedures. The references to OMB Circular A-87 throughout the report should be replaced by 48 CFR Part 31.
3. The draft report appears to cite Cost Accounting Standards (CAS) on pages 8 and 9. The CAS does not apply to these contractors because they are nondefense, competitively bid contracts.
4. The dollar amounts cited in the first paragraph on page 6 of the GAO draft report appears to represent different types of costs. About \$7 million for construction costs and \$128 million for equipment costs are added together as \$135 million in unanticipated work. It would be helpful for the final report to clarify the types of costs and their significance.

GAO's Comments

DOT's comments reflect that the Department generally agreed with our overall conclusion that improvements are needed in FHWA's management and oversight of the states' use of equipment rental rates. DOT stated that corrective action is under way or planned. DOT concurred with three of our recommendations to strengthen FHWA's oversight of equipment rental rates. First, the Department agreed to take steps to ensure that the states' rental rates are in accordance with FHWA's policies and federal cost principles. Second, DOT agreed with our recommendation that federal policies and guidance on equipment rental rates be incorporated into highway program manuals and stated that such action was under way. Third, DOT agreed that FHWA field offices should periodically review how the states are applying rental rates.

However, DOT disagreed with our recommendations on (1) recovering funds ineligible for federal reimbursement from Caltrans and (2) recognizing equipment discounts in calculating rental rates.

On our recommendation to recover funds from Caltrans, DOT said that it will act to mitigate any future problems with unallowable equipment replacement costs. But the Department considers recovery of funds from Caltrans neither appropriate nor feasible because California used its own rental rate guide with the "full knowledge and approval" of the FHWA Division Administrator for California.

We believe that the evidence does not support DOT's contention that Caltrans used replacement costs in calculating equipment rental rates with the full approval of California's FHWA Division Administrator. As we pointed out in our report, as a result of a 1986 finding by DOT's Inspector General that some standard rate guides were using replacement costs, these standard guides were modified to bring them into compliance with federal cost principles. Reacting to the Inspector General's finding and guidance on rental rates from FHWA headquarters, FHWA's Division Administrator for California notified Caltrans by letter that equipment rental rates that included replacement costs were ineligible for federal reimbursement. With this letter, dated December 5, 1986, the Division Administrator enclosed FHWA's guidance on rental rates and requested Caltrans to analyze its rates and provide FHWA with documentation showing that the rates excluded ineligible costs such as replacement costs. In our opinion, this letter notified Caltrans that the use of replacement costs in calculating rates was unacceptable. However, Caltrans did not undertake a detailed analysis, which would have disclosed that its rates included ineligible costs.

Again in early 1989, the FHWA division office requested that Caltrans compare its rate-setting procedures with FHWA's requirements. Caltrans complied and acknowledged that its rental rates did not comply with the cost principle prohibiting the use of replacement costs, but it did not take corrective action. Instead, Caltrans took over 3 years to develop a proposal to correct the problem. During this time, the FHWA division office continued to question Caltrans about its rate-setting procedures. Yet it was not until completion of an internal audit in mid-1992 that Caltrans agreed to change its procedure on the use of replacement costs to comply with federal cost principles.

DOT also objected to recovering these funds because it said that doing so would unfairly penalize state and local governments—who would not be able to recoup the money from contractors without extensive litigation—for actions undertaken with FHWA's full knowledge and approval. We agree that seeking recovery from local governments or contractors would represent an unfair penalty, as we consider that full responsibility for the overpayment lies with Caltrans, not with the local governments or contractors who used or relied on the rates for construction force-account work in good faith.

DOT also commented that it would not be feasible or cost effective to recover funds from Caltrans because of technical recordkeeping and logistical barriers to determining the amounts to be recovered. For example, DOT stated that it would take an extensive amount of time to identify and review projects to determine the amount of overpayment. Furthermore, according to DOT, the states are only required to maintain records for 3 years after payment of the final voucher on projects. We agree that numerous difficulties would occur in trying to precisely quantify the overpayment, and our recommendation has been clarified to emphasize that such an effort is not being proposed. Instead, our recommendation seeks repayment based on an estimate of the amount of overpayment in recent years. In our opinion, FHWA and Caltrans could reach agreement on a methodology for estimating the overpayment, since Caltrans has an automated system for calculating rates and other information on the number of hours billed by year for equipment used on force-account work. For example, Caltrans could apply its proposed median-age adjustment factor for eliminating replacement costs to the average ownership rates paid for each class of equipment since 1989. To arrive at an estimate of the amount overpaid, the difference between these adjusted ownership rates and the rates actually paid could be averaged

and applied to the average total hours billed for equipment used on force-account work during the same period.

We believe that FHWA's lack of effective oversight contributed to the lack of timely resolution of an identified problem in California. Since DOT has agreed to ensure that FHWA institute corrective measures to assure that states comply with federal cost requirements on rental rates in the future, we have modified our recommendation to indicate that recovery of the funds that Caltrans overpaid contractors is necessary only if Caltrans does not expedite the changes to satisfy the federal requirements on the use of replacement costs. However, we believe that in the future, when a state does not voluntarily comply with any federal cost requirement, FHWA should act quickly and decisively to correct the problem, including recovering unallowable costs.

In its comments on our recommendation to recognize discounts in calculating rates, DOT stated that Dataquest's "Blue Book" is the rental rate guide used by 47 of the 52 highway agencies. To date, Dataquest has not incorporated adjustment factors into the Blue Book for equipment discounting. However, DOT stated that the Blue Book does include a note as to how it may be accommodated on a case by case basis. However, these individual adjustments would require obtaining and verifying original purchase price data from the contractor. DOT maintains that this would be counterproductive for states, since the basic reason for using the rental rate guide is to eliminate the difficult task of trying to obtain such data from the contractor.

The intent of our recommendation was not to require states to gather and verify discount data. We believe the most feasible approach for factoring discounts into rental rate calculations is for FHWA to establish a policy that requires discounts to be used and then work with states and rate guide publishers to develop discount rates and methodology that states can use to fulfill the requirement. Our recommendation has been clarified to emphasize this point.

We agree with FHWA that it would be not be productive for the states to obtain and verify original purchase price data from contractors. This obstacle was recognized in our draft report, which noted that Blue Book methodology requires that states obtain equipment discount data from contractors, which some state officials considered too difficult to do. However, there are two alternatives for establishing appropriate discounts. First, average discounts by equipment types and geographical regions

could be developed as a guide for the states' use in adjusting rental rates. Dataquest—publisher of the Blue Book—acknowledges that such discounts could be developed and that it could supplement the discount information that is already being collected. Although Dataquest emphasized that developing this information would not be easy, they recognized that failure to include discounts in rate calculations leads to artificially high equipment rental rates. A second alternative is to use overall average discounts. Such overall discount averages could be modeled after the Corps of Engineers rate guide, which applies an average 7.5 percent discount rate (15 percent for highway trucks). States could apply these average discount rates to the published rates in whatever rate guide they chose to use.

We made some changes to respond to DOT's comments on the technical accuracy of our report. We recognize that the previous governing guidance of OMB Circular A-87 has been supplanted by 48 CFR Part 31, and we have deleted references to the Cost Accounting Standards. We have also clarified the dollar figures cited in the report.

Scope and Methodology

Section 1093 of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 states that

"Within 1 year after the date of the enactment of this Act, the Comptroller General shall complete a study on equipment rental rates for use in reimbursing contractors for extra work on federal-aid projects. Such study shall include an analysis of the reasonableness of currently accepted equipment rental costs, adequacy of adjustments for regional or climatic differences, adequacy of consideration of mobilization costs, loss of time and productivity attendant to short-term usage of equipment, and approvals of rental rate costs by the Federal Highway Administration."

As agreed with the Senate Committee on Environment and Public Works and the House Committee on Public Works and Transportation, we identified the basis on which the states establish equipment rental rates, assessed whether the states are establishing rental rates that properly reflect contractors' actual equipment costs, and determined if the Federal Highway Administration (FHWA) is adequately overseeing the way states use the guides to establish their equipment rental rates.

To determine the basis on which the state departments of transportation establish rental rates, we obtained information from the 50 states, the District of Columbia, and Puerto Rico. We identified the rental rate guides the states use, the adjustments they make to published rates, and the data available to measure the amount of unanticipated and force-account work performed in the states. Although data are not available to precisely measure the amount of unanticipated work performed by the states, industry estimates indicate that unanticipated work represents up to 3 percent of total highway construction costs and that force-account work accounts for up to 5 percent of total unanticipated work. Also, FHWA estimates that equipment costs make up 33.8 percent of total highway construction costs. Based on these estimates, equipment costs for all unanticipated work in fiscal year 1991 totaled \$135.3 million, of which about \$6.8 million was for force-account work.

To determine whether the states were properly adjusting rental rates, we analyzed their construction specifications and other documents containing their policies and procedures for using predetermined rental rates. We compared the states' policies with FHWA's policies and guidance and the methodology and procedures used in standard rate guides for determining equipment costs and adjusting rates to accurately reflect costs. On the basis of these comparisons, we identified 28 states that were deviating from one or more federal policies or that were inconsistently applying

standard rate guide adjustments in the categories laid out in the legislative mandate. Because we were not able to determine the states' practices on purchase discounts through our review of documents, we added 10 states to ensure coverage of at least 1 state in each of FHWA's regions. We also considered issues raised by industry groups in our selection of the 10 additional states. This selection resulted in an aggregate total of 38 states for follow-up discussions. For each state, we discussed the reasons and justification for the deviations and inconsistencies that we identified for that state; we did not discuss the entire range of issues in the mandate with each state.

To determine the adequacy of FHWA's oversight, we reviewed FHWA's policy guidance on rental rates and rate approval process. We also discussed FHWA's role in reviewing and approving the states' rental rates with officials in FHWA division offices and headquarters. We discussed the problems the contractor groups expressed about federal policies and the rate guides' cost methodology with officials at FHWA headquarters and field offices.

We obtained information from Dataquest, Inc., the U.S. Army Corps of Engineers, and Caltrans on the methodology they use for determining rental rates. We did not attempt to verify the cost data these organizations use in developing the rates included in their guides. They generally obtain the data from contractors, industry and government publications, and equipment manufacturers.

We discussed the methodologies in the rate guides, equipment rental rate problems, and FHWA and state policies on rental rates with national and field representatives of ARTBA and AGC/A—industry groups that represent highway construction contractors. We followed up with state and FHWA officials in states in which these organizations identified particular problems with rental rates.

Since reliable data on equipment costs were not available, we used estimates provided by Dataquest to calculate the portion of total highway construction costs accounted for by equipment used for unanticipated and force-account work. We used the upper limit of Dataquest's estimates for unanticipated and force-account work because the limited amount of actual data we obtained indicated that this upper range would more accurately reflect national averages.

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