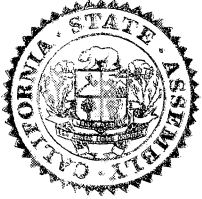


REPORT OF THE  
OFFICE OF THE AUDITOR GENERAL  
TO THE  
JOINT LEGISLATIVE AUDIT COMMITTEE

812

THE EFFECT OF  
ENVIRONMENTAL IMPACT REPORTS  
ON HIGHWAY CONSTRUCTION

JUNE 1978



# Joint Legislative Audit Committee

OFFICE OF THE AUDITOR GENERAL

## California Legislature



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June 30, 1978

The Honorable Speaker of the Assembly  
The Honorable President pro Tempore  
of the Senate  
The Honorable Members of the Senate and the  
Assembly of the Legislature of California

Members of the Legislature:

Your Joint Legislative Audit Committee respectfully submits the report  
of the Auditor General on the delaying effect, if any, of required  
environmental impact reports on highway construction schedules.

The auditors are Harold L. Turner, Audit Manager; William M.  
Zimmerling; and Eileen Kraskouskas.

Respectfully submitted,

MIKE CULLEN  
Chairman

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SUMMARY

In response to a resolution of the Joint Legislative Audit Committee, we have studied the effect of preparing environmental documents on highway construction. We found that compliance with requirements of environmental laws and regulations caused delays on some highway construction projects. This was especially true for major projects approaching the construction stage when the environmental laws were passed. For new projects, the Department of Transportation (Caltrans) is simultaneously performing the environmental review process and other planning. Thus, delays can be minimized or eliminated.

Processing environmental documents has not caused construction fund losses. Funds allocated to projects delayed by the environmental review process are reallocated to other projects, which are thus completed ahead of schedule, so there are no losses due to idle funds not expended. However, costs of delayed projects can increase because of inflation.

For the projects we reviewed, the environmental review process resulted in certain recommendations either changing planned construction or adding mitigating measures to reduce the construction's impact on the environment. Further, we were told by Caltrans employees that completing environmental studies has made them sensitive to the environment, so they now consider possible environmental effects early in the project planning stage.

Delays in highway construction can occur because of environmental laws and complexities inherent in coordinating a statewide transportation plan. For example: (1) Caltrans must incorporate all new environmental laws, standards and regulations into its ongoing environmental reviews; (2) Caltrans must coordinate and/or negotiate aspects of each project that have environmental implications with as many as 50 federal, state and local agencies; (3) Caltrans must continually evaluate and, as necessary, change its priorities to be responsive to the State's changing needs.

Considering the above, it is our opinion that the delays Caltrans has encountered appear justified.

## INTRODUCTION

In response to a resolution of the Joint Legislative Audit Committee, we have studied the effect of preparing environmental documents on highway construction. This study was conducted under the authority vested in the Auditor General by Section 10527 of the Government Code. We reviewed the Department of Transportation's (Caltrans) environmental work for seven projects, six of which were in final planning stages when the environmental laws were implemented.

## BACKGROUND

In planning and carrying out any project from road widening to construction of an urban freeway, Caltrans is required by many federal and state laws to consider a wide range of environmental issues. The two most significant laws, which require full and formal consideration of the environmental impacts of any major project unless specifically excluded by law, are the National Environmental Policy Act of 1969 (NEPA) and the California Environmental Quality Act (CEQA).

### National Environmental Policy Act of 1969

The National Environmental Policy Act of 1969 became effective January 1, 1970. It requires preparation of a detailed statement using a systematic, interdisciplinary approach to ensure the integrated use

of natural and social sciences and environmental design arts in planning and in decision making on any major federal project which may have an impact on man's environment.

The detailed statement is to include:

- The environmental impact of the proposed action
- Any adverse environmental effects which cannot be avoided
- Alternatives to the proposed action
- The relationship between local, short-term uses of man's environment, and maintenance and enhancement of long-term productivity
- Any irreversible and irretrievable commitments of resources.

Before completion of the statement, consultation is required with any federal agency which has special expertise or jurisdiction by law.

The Federal-aid Highway Program Manual (FHPM-772) contains detailed regulations implementing NEPA that Caltrans must follow in developing a federal-aid highway project. The regulations emphasize an interdisciplinary approach and give detailed procedures regarding the content, processing and required review by others of environmental documents.

California Environmental Quality Act of 1970

The California Environmental Quality Act, which became effective on November 23, 1970, contains policies similar to NEPA. The purpose of this Act is to assure that governmental actions promote the general welfare; allow man and nature to live in productive harmony; and fulfill the social, economic and environmental requirements of present and future generations.

CEQA required each public agency to adopt regulations for the preparation of environmental impact reports and negative declarations. Caltrans has done so and has incorporated both the requirements of the state environmental law and the federal law into one process.

Decisions concerning the funding of a highway project, including whether or not federal participation will be sought, are not made until the initial planning stages, which include environmental studies, are complete. Therefore, during the planning stage Caltrans anticipates meeting all federal requirements for projects over \$15,000. Since about half of Caltrans' budget is federal funding, and most large projects receive federal funds, this practice appears justified.

Consultation and Other Agency Requirements

Both NEPA and CEQA and their implementing regulations require consultations with agencies of special expertise. Over 50 of these agencies are involved with highways. Some of the more important requirements and agencies involved are concerned with air quality and historical resources.



The Federal Clean Air Act Amendments of 1970 require the Environmental Protection Agency (EPA) to review and comment in writing on the environmental impact of any project subject to that Act. The Act also required EPA to establish National Ambient Air Quality Standards for harmful air pollutants.

CEQA requires Caltrans to consult with the Air Resources Board on potential air pollution based on projected traffic statistics. Caltrans regulations also require consideration of indirect secondary air pollution consequences of growth induced or facilitated by a transportation project.

Several laws preserving and protecting historical and archeological resources must also be considered. The Antiquities Act of 1906 protects historic and prehistoric remains on federal lands. The National Historic Preservation Act of 1966 declared a national policy of historical preservation, established an advisory council and provided procedures for federal agencies to follow if a proposed project could affect a property included in or eligible for inclusion in the National Register of Historic Places.

Other significant areas related to environmental concerns are:

- Section 1601 of the California Fish and Game Code which requires Caltrans to notify the Department of Fish and Game and reach agreement on proper mitigating measures if a project will alter the flow or bed of streams, rivers or lakes

- Section 4(f) of the U.S. Department of Transportation Act of 1966 which requires Caltrans to show that there are no feasible and prudent alternatives to using publicly owned park land, recreation areas, wildlife and waterfowl refuges or any land from significant historic sites. Caltrans must minimize harm to the land resulting from the project
  
- The U.S. Council on Environmental Quality (CEQ) which requires an analysis of project effects on prime and unique farm lands. This analysis is coordinated with the U.S. Department of Agriculture.

#### Scope of Review

We reviewed seven highway construction projects. The process entailed visiting Caltrans headquarters in Sacramento and district offices in Marysville, Stockton, Los Angeles and San Francisco; reviewing applicable files; and interviewing district and headquarters personnel. For the seven projects, Caltrans has completed or is completing five environmental impact statements and two negative declarations.

## STUDY RESULTS

### TIME REQUIREMENTS FOR PROCESSING ENVIRONMENTAL DOCUMENTS

The time required to prepare environmental documents for the seven projects reviewed ranged from about one year to over five years. For new projects Caltrans simultaneously performs the required environmental studies with other planning, and delays are minimized or eliminated. However, since six of the projects we reviewed were in final planning stages when the environmental laws were passed, these projects were delayed pending completion of the environmental studies.

Many delays occurred during preparation of the environmental documents for the seven projects we reviewed. These delays occurred because of changes in project priorities and because Caltrans must incorporate all new environmental laws, standards and regulations into its ongoing planning and environmental reviews. Most of the delays incurred on these projects resulted from constraints imposed by agencies and regulations beyond the control of Caltrans. Those delays that were the responsibility of Caltrans were, in our opinion, not excessive.

Processing time to complete an environmental document (ED) depends on the type of document being prepared. Environmental documents include: (1) categorically exempt determinations for projects which are categorically exempt from the law, such as repair,

maintenance or minor alteration of existing facilities; (2) negative declarations (NDs) for projects which could potentially have a significant effect on the environment but which, based on an initial study, will not have such an effect; and (3) environmental impact statements (EISs), which discuss the environmental consequences of a project, mitigating measures proposed to minimize the significant effects and alternatives to the proposed action.

The current Caltrans six-year program lists 904 projects. Of these projects, an estimated 641 will be categorically exempt, 196 will require negative declarations and 67 will require full environmental impact reports. The six-year program does not list projects estimated to cost less than \$200,000. Since most projects under \$200,000 are categorically exempt, the estimate of 641 categorically exempt projects is probably low.

A categorically exempt determination can be processed in as little as one day, but it can take from 27 months to 42 months or longer to process an ND or EIS. To process these environmental documents, Caltrans first defines the project and performs an initial study. This study is made to determine if an ND or an EIS must be prepared. Then studies are conducted to determine the project's effect on such things as air quality, water quality, energy and historic or cultural resources.

Once this information is compiled, Caltrans prepares the ND or draft EIS and obtains approval for circulation. A draft EIS is circulated for 70 days (a 60-day comment period plus 10 days for mailing time) while an ND is circulated for 45 days. As part of the circulation process, public hearings are held if public interest is evident, comments are analyzed and responded to, and a final environmental document is drafted. This document must then be reviewed and accepted by Caltrans, the Federal Highway Administration and other agencies.

#### Integration With Other Project Planning

In their March 1972 report, the United States General Accounting Office (USGAO) reported that highway planning takes, on the average, 103 months. Caltrans currently expects to take between 57 and 108 months for the project development process, within which is integrated the environmental review process. Although the environmental review process was estimated (for project development process purposes) to take from 27 to 42 months, if properly integrated into the planning process, the only direct project delays come from the public review periods during which time no planning work is to be undertaken.

Caltrans lists projects estimated to cost \$200,000 or more on a six-year plan. As projects move up in the six-year plan, Caltrans stages their planning, including environmental planning, to minimize or eliminate delays. However, when a new project is given priority, it may be delayed until the planning effort catches up. Route 126 in Santa Paula provides an example.

The project to widen the section of Route 126 from Santa Paula to Hall Road was not initially on Caltrans' six-year plan. In early 1978 Caltrans decided that this project should have priority so it started the necessary environmental studies in March 1978. Caltrans estimates that the environmental studies will be completed in May 1979 and plans to advertise for construction bids in March 1982. Since this project was not on the six-year plan, neither the engineering planning (which will take approximately 8 months) nor the environmental planning (which will take up to 14 months) had been done. Thus, if Caltrans did not have to do any environmental planning, the project could be ready for construction bids up to six months earlier.

Changes in project priorities can also delay a project with a completed ED and necessitate further environmental work. The ND for Route 505 for example, was approved in 1974 and construction was budgeted for 1975-76, 1976-77, 1977-78 and 1978-79. Funding for this project was withdrawn each of the first three years, and the ED had to be reevaluated in 1977 and again in 1978.

Projects Planned Prior to  
Passage of Environmental Laws

Several of the projects we reviewed were in final planning stages prior to passage of the environmental laws or promulgation of implementing regulations. Because construction had not begun, these projects were delayed pending completion of appropriate environmental review. An example is the Century Freeway project which was delayed over five years.

The first planning for the Century Freeway (Route 105) was completed in 1959. The location of the west portion of the freeway was adopted by the Highway Commission in 1965, and the east portion was adopted in 1968. In that year the route was added to the national system of Interstate and Defense Highways, and the Federal Government required the route be designed with particular concern for community impact and environmental considerations by using a multidisciplinary urban design team.

In planning this freeway, Caltrans hired consultants with such backgrounds as urban planning, architecture, economics, sociology and others familiar with urban planning problems. Specific studies and reports were conducted at a cost of approximately \$400,000. In addition, seven public hearings were held with attendance totaling about 5,000 people. All of this activity occurred prior to the enactment of NEPA and CEQA.

Caltrans felt the environmental review of this project was sufficient to comply with early Federal Highway Administration (FHWA) guidelines for NEPA. However, in February 1972 a suit was filed by the Center for Law in the Public Interest, and on July 7, 1972 a preliminary injunction was issued, forcing Caltrans to prepare a formal EIS.

During the injunction, meetings were held by local officials of affected cities, public hearings were held and the draft EIS was prepared and released. The final EIS was completed by Caltrans in July 1977.

The requirement to conduct the environmental impact study for the Century Freeway delayed this project over five years and cost an additional \$4.75 million. The original project cost was estimated at \$375 million; however, due to inflation and other factors, the current estimate is over \$800 million. In the interim, project funds have been shifted to other approved projects. At the time of our review, the EIS was pending final approval from FHWA.

#### Changes in Regulations

If a law, regulation or standard (such as air quality) changes before an environmental document is finalized, the changes must be incorporated into the document. This requirement caused processing delays in some of the projects we reviewed. While the EIS for the Century Freeway was being completed, the air emission standards changed twice. Each time Caltrans had to revise their air quality studies to reflect the new criteria. The noise standards also changed once, so the sound study had to be repeated. The sound study for another project, Route 210, also had to be repeated after the noise standards changed.

Changes to CEQA in 1977 may cause additional delays in completing the environmental review process. Section 21166 P.R.C. required a new environmental impact report to be processed after an environmental impact report had been completed only when "(a) Substantial changes are proposed in the project which will require major revisions of the environmental impact report," or "(b) Substantial changes



occur with respect to the circumstances under which the project is being undertaken which will require major revision in the environmental impact report." A legislative change made to CEQA in 1977 added a subsection which requires a new environmental impact report when "New information, which was not known and could not have been known at the time the environmental impact report was certified as complete, becomes available." No qualifications were placed on what the new information may be.

COORDINATION WITH  
OTHER AGENCIES

Caltrans must contact, coordinate with or obtain permits from many agencies and private groups. Obtaining permits and negotiating agreements with these agencies can sometimes delay project completion.

Caltrans is required to notify over 50 public agencies at the initiation of project studies to solicit comments and suggestions and to begin coordination. Interested groups and private individuals are also notified. Contact is maintained throughout the project with any agency or group which expresses an interest in it.

Potentially, over 50 approvals or permits are required from other agencies for such things as work in navigable streams (U.S. Coast Guard), pedestrian facilities (Office of the State Architect), well abandonment (Department of Water Resources) and waste discharge (Regional Water Quality Control Boards). Unforeseen delays may occur if these other agencies are not staffed at levels permitting quick response or if negotiations do not proceed smoothly.

Of the projects we reviewed, two instances illustrate complications which may arise in obtaining clearance. Route 118 required the acquisition of 8 acres of undeveloped park land. The purchase of that land came under the jurisdiction of Section 4(f) of the U.S. Department of Transportation Act of 1966, which allows use of park land for a project only if (a) there is no feasible and prudent alternative and (b) all planning

to minimize harm to the land is done. To obtain the clearance, Caltrans and the City of Los Angeles negotiated for a five-year period and reached a settlement in which Caltrans substituted 13 acres of prime park land for the 8 acres of undeveloped park land.

The construction of Route 210 required removal of two man-made fish ponds, which came under the jurisdiction of Section 1601 of the State Fish and Game Code. Section 1601 requires Caltrans to notify the Department of Fish and Game of any project which will alter the flow or bed of streams, rivers or lakes. Negotiations to mitigate the effects of pond removal took place over a 15-month period and were concluded when Caltrans agreed to reconstruct a fish pond on 10 acres of land.

#### Review Time

Delays in processing environmental documents can occur at any of several review stages built into the environmental process. Documents prepared by the Caltrans district office are reviewed by headquarters, FHWA, other federal and state agencies and the general public.

The district office must fully respond to points made at each review stage. For example, the public comment period for the draft environmental impact report of Route 120 ended on January 8, 1975. The district office spent five months preparing responses to comments received and sent their draft of the final report to headquarters for

approval on May 15, 1975. The next seven months were spent in responding to headquarters' comments and in revising the environmental document. Headquarters approved the final document on December 30, 1975.

Review time by FHWA varies greatly depending on the project. For instance, FHWA spent one month reviewing the ND for Route 505, two and one-half months reviewing the EIS for Route 120, and five months reviewing the EIS for Route 118. The EIS for the Century Freeway was sent to FHWA in September 1977. Although the State Air Resources Board previously reviewed and commented on this EIS, the Board sent a letter to FHWA expressing some reservations about the accuracy of the study. At the time of our review (April 1978), the FHWA was holding the EIS until the two state agencies reached final agreement.

THE COST OF PREPARING AN  
ENVIRONMENTAL IMPACT DOCUMENT

No direct relationship exists between the cost of a project and the cost of that project's environmental study. Further, there is no direct relationship between the cost of that study and the cost of changes resulting from the study.

Most steps in preparing environmental documents are so integrated into the planning and construction process that they cannot be segregated and accurately costed. Some steps, such as performing air quality studies, could be identified, but normally Caltrans makes no attempt to isolate actual costs.

A Caltrans official provided us with a list showing that the estimated costs of EISs generally ranged from .1 to 13 percent of project costs. Caltrans estimates of the cost of preparing the EDs for some of the routes we reviewed ranged from less than one percent of construction costs to over three percent. The highest estimate for an ED was \$4.75 million for the Century Freeway. When completed, construction of this freeway will have cost over \$800 million.

Most projects will incur certain fixed costs for standard items such as air quality studies, and some projects may have complicated environmental consequences which would require relatively greater investment in environmental investigation.

There is also no direct relation between the cost of conducting an EIS and the cost of implementing the route changes or mitigating measures suggested during the environmental study. For example, during the environmental review process, Caltrans decided that Route 118 would be much more acceptable if most of the route were depressed below ground level and if a school were relocated. Also, park replacement land had to be purchased. The cost of conducting the environmental study was estimated at \$2 million. The additional construction and relocation costs due to changes identified during the environmental study were estimated at \$4 million. The total construction cost for this project is estimated to be \$63 million.

For Route 980, however, the environmental study was estimated to cost \$250,000, and mitigating measures proposed will cost only \$200,000. Construction cost of this route is estimated at \$22.5 million.

MITIGATING MEASURES  
RESULTING FROM ENVIRON-  
MENTAL IMPACT DOCUMENTS

For the seven projects we reviewed, certain recommendations were made after the environmental review process, either changing the planned construction or adding mitigating measures to reduce the construction's impact on the environment. We were told by Caltrans employees that formal environmental studies now force them to be more sensitive to the environment and to consider possible environmental effects early in the project planning stage.

The purpose of an environmental document (ED) is to provide information to a decision maker and to the public. This information may suggest major project changes or minor mitigating measures. Examples of changes proposed for the projects we reviewed follow.

A Negative Declaration (ND) is prepared when a project is expected to have no significant environmental impact based on an initial study. The ND for Route 126 in Fillmore had, as the only mitigating measures, landscaping to replace removed trees and tree wells to reduce the number of trees taken. Route 980, a \$22.5 million project for which a full EIS was prepared, had only a few more mitigating measures: (1) a church and four houses which are potentially historically significant will be moved; (2) a recreation building will be air-conditioned so that the windows can remain closed to lessen freeway noise; and (3) drained water will be recycled.

The route changes and mitigating measures proposed for the other routes we reviewed varied considerably. Based on input obtained during a public meeting, Caltrans (1) decided to depress most of the 5.1 mile length of Route 118 and to help relocate a school, (2) postponed construction of one interchange pending studies after freeway construction and (3) planned for phased construction to eliminate use of city streets by construction equipment. For the project on Route 505 (basically widening an existing road), Caltrans redesigned an interchange to take less prime agricultural land and obtained fill material from other locations thus stopping the construction trucks from passing through residential property.

Among the many mitigating measures Caltrans proposed after conducting environmental studies for the Century Freeway were several design changes. The project was redesigned from 10 lanes with high occupancy vehicle lanes in the median to 8 lanes with high occupancy vehicle lanes in the median. The location of the route through the City of Hawthorne has also been changed, and plans have been made to relocate a historical building.

We were told by Caltrans officials that their past experience in preparing environmental documents has increased their awareness of environmental implications. This awareness now enables them to predict and avoid problem areas in the early project planning stages. For example, the environmental studies for Route 126 in Santa Paula began in March 1978. Prior to beginning these studies Caltrans modified the proposed project so that it would avoid two potentially historic buildings.



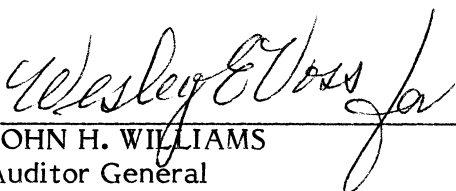
OTHER PERTINENT INFORMATION

The United States General Accounting Office (USGAO) issued a report on August 9, 1977, entitled, The Environmental Impact Statement: It Seldom Causes Long Project Delays But Could Be More Useful If Prepared Earlier. During their audit the USGAO auditors reviewed nine environmental impact statements prepared for highway projects. They found that EIS preparation caused delays in three of the nine projects, mainly because other planning was done and construction dates had been programmed prior to the requirement to prepare an EIS.

The construction delays reported to the USGAO by state highway officials were only about 12 to 18 months even though preparation of the EISs took an average of 41 months. These projects had been in various preconstruction stages for an average of about 16 years.

The six other projects reviewed by the USGAO had been in preconstruction stages for an average of almost 17 years. Preparation of the EISs averaged 42 months but did not cause delays since these projects were being delayed for other reasons, such as funding problems.

Respectfully submitted,

  
JOHN H. WILLIAMS  
Auditor General

Date: June 27, 1978  
Staff: Harold L. Turner, Audit Manager  
William M. Zimmerling  
Eileen Kraskouskas

# Memorandum

To : Hon. John H. Williams  
Auditor General  
Joint Legislative Audit Committee  
925 L Street - Suite 750  
Sacramento, CA 95814

Date : June 21, 1978

File No.:

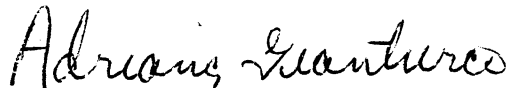
From : **DEPARTMENT OF TRANSPORTATION**  
**Director's Office**

Subject: Effect of Environmental Impact Reports  
on Highway Construction

Thank you for the opportunity to review the draft of your report, "The Effect of Environmental Impact Reports on Highway Construction", dated June 1978. I share the same concerns that prompted this review.

The report is a generally accurate portrayal of the State and Federal processes leading to environmental clearance to proceed with a highway project. I would like to point out that in some instances, modifications made to projects resulting from exposure during the environmental process result in less expensive -- as well as less disruptive -- projects.

I concur with the report's conclusion.



ADRIANA GIANTURCO  
Director of Transportation

Office of the Auditor General

cc: Members of the Legislature  
Office of the Governor  
Office of the Lieutenant Governor  
Secretary of State  
State Controller  
State Treasurer  
Legislative Analyst  
Director of Finance  
Assembly Office of Research  
Senate Office of Research  
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