



U.S. DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
WASHINGTON, D.C. 20235

October 17, 1966

CIRCULAR MEMORANDUM TO: Regional and Division Engineers

FROM: G. M. Williams, Director of Engineering and Operations
32-22 Washington, D. C.

SUBJECT: Design Review Team for review of completed projects

The accelerated highway program of the past few years has improved many miles of the highway systems of our Nation. In most cases, these improvements incorporate the latest designs and become progressively superior as more modern design techniques are continually developed. In some instances, however, inferior design elements continue to be included due to lack of proper communication between design personnel and those responsible for construction, maintenance, traffic operation, safety, and esthetics.

Several States already have established a committee or team to review completed projects and make recommendations as to their design features. Some of these have been functioning for several years. Others are broader outgrowths of previous specialized operational inspection efforts such as the surveillance of wrong-way ramp movements recommended in Mr. J. K. Williams' circular memorandum dated October 6, 1965. These teams function under various names, such as Operational Surveillance Teams, Freeway Operation Review Committees, Design Review Teams, etc., but all have one purpose -- to insure continuance of satisfactory design practices and eliminate or correct those which have proven inferior.

Excerpts from typical reports are enclosed to illustrate the general function and typical findings of these teams.

The Bureau advocates and urges the establishment of a review team in all States and of effective review and reporting procedures to accomplish their purpose. Each division engineer is requested to make a personal effort with top State officials to secure the establishment of such a team in his division, if this has not already been done.

The team should be composed of responsible, well-experienced personnel. For it to operate most effectively, its size should be limited, possibly to that which can be carried in one larger motor vehicle such as a stationwagon. We suggest representation from the usual major divisions of the highway department that are directly involved: design, construction, maintenance, traffic operation and safety; from the highway patrol or other law enforcement agency; and desirably from Public Roads. The team should be under the general supervision of some individual or group in the department who has sufficient authority to insure proper consideration of its recommendations and prompt implementation whenever appropriate.

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Maximum results are obtained only if satisfactory procedures are established for making the reviews, for evaluating the information obtained, and for disseminating the conclusions. Arrangements should be made in advance covering: (1) field review and presentation of findings; (2) evaluation of findings and implementation of any corrections to be made on the project reviewed; (3) preparation of report covering the inspection, findings, any corrective measures taken, and recommendations concerning design procedures on future projects. It is suggested that findings of design practices or elements which could be improved, and recommendations as to future design procedures be prepared in synopsis form and disseminated to design personnel at the working level to encourage improvement in design practices and insure use of latest recommended procedures. Other operational deficiencies, as determined by this team representing many skills, could well be included in the report.

Review team evaluation should be made of all new freeways and other major highway projects in the State. Also, it is desirable to make review on selected sample projects of less important highways, as conditions may permit. Daytime inspections naturally will predominate, but after-dark checks definitely should be included. Also, attempts should be made for some reviews during inclement weather and by drivers not directly involved in highway design.

It is our thought that a team newly established in a State should first review the large backlog of completed mileage which has developed during recent years. This would serve as a means of orientation, familiarize the team with present design practices and those formerly in effect and, more importantly, result in early determination of questionable design features which are so critical as to warrant consideration for immediate correction, or which should be corrected or eliminated on future projects.

Once the backlog of completed mileage has been reviewed, the team should review current projects as they reach completion. The best time for review of new projects is a matter worthy of consideration. This may vary from project to project as found appropriate. One opportunity is when the project is practically completed, including signing, but before it is opened to traffic. If a major design deficiency is found at this time, it may be corrected before the project is opened to traffic. Another opportune time is immediately after the project is opened for use. This permits determination of the actual operating characteristics of the design under traffic load, yet allows early detection of any serious deficiency. A third preference may be to wait a sufficient time after the project is opened to permit traffic to settle into its normal pattern.

Public Roads is very interested in the outcome of these reviews so that it may eventually develop sound procedures for use by these teams. Please furnish the Washington office two copies of the reports.

Certain requirements in the Highway Safety Act of 1966 indicate the use of surveillance teams for the detection of high accident locations. It is

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conceivable that the responsibilities of the Design Review Team might well be expanded to include the interdisciplinary considerations in highway safety with emphasis on total traffic operations.

Enclosure

EXCERPTS FROM TYPICAL REPORTS

1. The less than one-half mile distance between the _____ interchange and the braided interchange with the old highway ... illustrates some of the reasons why interchanges should be a mile or more apart.

....

This closeness made perfect signing impossible. It is highly desirable to place the first sign directing to a particular exit at least a mile in advance of that exit. Any distance available under three quarters of a mile usually gives us a problem. As this distance was less than one-half mile, we were forced to place a sign reading " _____ Exit 1 Mile" in advance of the _____ interchange, which undoubtedly causes confusion to some drivers.

2. Reflector assemblies on metal blocked-out guardrail posts were of the semi-circular type installed by nailing into the end grain of the spacer block. In some instances as many as 50 percent of the reflectors were missing and others were loose due to shrinkage of the wood. The newer standard plan A-77-10 showing the reflector attached to the side grain of the wood should be a more satisfactory method of attachment.
3. Leaving Northbound US-27 at _____, the ramp appears to have a short deceleration lane due to the grade being such that the ramp is only partially visible. Care should be taken to design ramps with a grade that allows the major portion of the ramp to be seen from the main roadway, or if this is not feasible, the deceleration lane should be lengthened to avoid desire of traffic to slow down on the main roadway.
4. The _____ Sign Company was observed servicing private signs from the northbound roadway, just south of _____. Committee has noticed this problem before. It is recommended State Police be advised to issue tickets for this type of violation.
5. At the _____ southbound rest area, it is recommended the crossover be removed and relocated to prevent people from using this crossover to get to rest area from northbound roadway.

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6. It is also recommended that screen planting be placed at _____ Road, north of _____ to blend "Indian Mound" fill between bridge structures into existing terrain.
7. At the _____ interchange at _____, a light pole has been constructed at the southbound on ramp near Station 1260. It is only about 4 feet from both the main roadway and the ramp edge of pavement, and should be relocated to the median area and the outside of the ramp to eliminate a traffic hazard.
8. One block south of _____ a woman was observed walking across the Freeway. Upon investigation, it was discovered there is a large hole in the West ROW fence, and a well-worn path across the Freeway at this point. ... If the demand warrants, a pedestrian structure should be considered at this location.