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**HEARING BEFORE THE
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
OF THE HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION**

BRIDGE INSPECTION AND BRIDGE SAFETY

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Good morning, Mr. Chairman.

It is appropriate that we review the Nation's bridge inspection program as we near the 20th anniversary of the cataclysmic event which began it all. The December 15, 1967, catastrophic collapse of the Silver Bridge between West Virginia and Ohio resulted in the deaths of 46 people. After a series of extensive hearings and investigations concerning the Silver Bridge collapse, the Congress directed the U. S. Secretary of Transportation in the 1968 Federal-Aid Highway Act to develop national bridge inspection standards to apply to all bridges on the Federal-aid highway system. As a result of the 1970 Federal-Aid Highway Act, these National Bridge Inspection Standards (NBIS) were published in the Federal Register in April of 1971. The NBIS specified (1) inspection methods, (2) frequency of inspections, (3) qualifications of inspectors, (4) that inventory data be kept, and (5) that safe load capacity of bridges be determined for all 270,000 Federal-aid system bridges.

At the same time, the Federal Highway Administration (FHWA) with the assistance of the States and other interested and knowledgeable parties developed a 3-week long comprehensive training course for bridge inspectors, and a complete Bridge Inspector's Training Manual which was made available to all States. As the inspection program progressed, additional manuals, training courses, and inspection tools and procedures have been developed, and the Nation has developed a large cadre of experienced, trained bridge inspectors.

The 1978 Surface Transportation Assistance Act brought about an expansion of the NBIS to include all bridges on public roads. This greatly complicated the States' task by adding more than 300,000 bridges to NBIS coverage. It made the NBIS much more difficult to administer for both the FHWA and States because the majority of these 300,000 off-system bridges are under the jurisdiction of the more than 3,500 local governmental entities in the Nation. In order to inform local governments of the new requirements, the FHWA cooperated with the National Association of Counties and the National Association of County Engineers to hold a series of national workshops in each FHWA region to explain the program. A complete package of training materials and bridge inspection guidelines was also made available to all interested governmental officials.

More training courses were developed by the FHWA; one of the most successful was one entitled, "Practical Highway Bridge

Inspection for Local Jurisdiction Bridge Inspectors." It was presented about 24 times throughout the Nation and is still in demand.

All States and most local governments proceeded to implement the new off system provisions of the NBIS.

However, early in the 1980's, it became increasingly clear that some States were having significant difficulties convincing certain local jurisdictions that the frequency and load posting requirements of the NBIS must be strictly adhered to. As a result, the FHWA and the States continued strong efforts in a cooperative manner to assist and convince local governments that all provisions of the NBIS must be followed to ensure public safety.

In 1984, the FHWA conducted a comprehensive management review of the entire bridge program to determine compliance levels and the effectiveness of bridge improvement programs. As a result of the findings of the review and ongoing concerns about the apparent lack of interest of some local governments in NBIS compliance, a very strong FHWA policy statement was issued on May 14, 1985, which required that all jurisdictions not in compliance with the frequency and load posting requirements of the NBIS be directed that they must (1) immediately achieve compliance or (2) develop aggressive, short-term plans to correct NBIS deficiencies. Any jurisdiction not responding favorably within 90 days was to have further approvals of Federal-aid highway projects suspended until the governmental entity complied with the NBIS.

To date, Federal-aid highway project approvals have formally or informally been temporarily suspended in 456 jurisdictions. Most of these have been subsequently rescinded as the result of actions taken by the local governments to comply. However, there are still 144 suspensions in effect and more may be necessary should any governmental unit lapse into non-compliance with the NBIS.

Unfortunately, there have been two additional catastrophic collapses since the 1967 Silver Bridge disaster. The 1983 collapse of the I-95 Connecticut Turnpike Bridge and the 1987 collapse of the I-90 New York Thruway Bridge over Schoharie Creek, both of which were on toll facilities under the jurisdiction of toll authorities and not subject to direct State highway agency control, again focused national attention upon the bridge inspection program. The need to strengthen inspection efforts for fracture critical members and ensure adequate underwater inspection programs was accentuated by these two collapses.

Current Federal-aid procedures for new major bridge projects require that all fracture critical details be identified on project plans and that special maintenance and inspection manuals be prepared for major or unusual bridges.

In 1983 and 1984, the FHWA developed, through contractual procedures, two supplements to the Bridge Inspector's Training Manual, one for Inspection of Fracture Critical Members and one for Inspection of Culverts. Through the FHWA's National Highway Institute, companion training courses for these two new

supplements have been made available for bridge inspectors throughout the Nation. They have been offered or scheduled at 36 and 24 locations respectively, and the FHWA is making provision to provide these training courses as many more times as State and local bridge inspectors request them.

Underwater inspection programs have been lacking in some jurisdictions because of the apparent perception that they were not needed, they are too costly or just too difficult for some agencies to carry out. In 1985 (two years before the Schoharie Creek collapse), the FHWA issued a firm policy statement which clearly reminded all bridge owners that appropriate underwater inspection programs must be included within overall programs to comply with the NBIS. In 1986, this policy was reinforced with an additional policy memorandum to field offices that the absence of underwater inspection programs should result in the same consequence as inspection frequency and load posting inadequacies. That is, noncomplying jurisdictions would be jeopardizing further approvals of Federal-aid highway projects.

As a result of cooperative efforts of American Association of State Highway and Transportation Officials, individual States, the Transportation Research Board, the FHWA and others, the States have fully implemented their underwater inspection programs for 85 percent of State maintained and 64 percent of locally maintained bridges. The remainder are being actively implemented.

Because bridge inspection technology is constantly changing and ongoing evaluations of the Nation's bridge inspection programs

suggests a strong need for updating the NBIS, on April 7, 1987 the FHWA issued a notice of proposed rulemaking (NPRM) in the Federal Register to suggest appropriate improvements. The NPRM would permit States to (1) set an appropriate time interval between inspections for certain types or groups of bridges as opposed to the current 2-year maximum period between inspections, (2) require special identification, inspection procedures and follow-up for bridges with fracture critical members and for bridges which require underwater or other special inspections, (3) allow another qualification procedure for bridge inspection team leaders and (4) require reasonably prompt updating of State bridge inspection inventory data when the status of a bridge changes as the result of replacement, rehabilitation or load posting.

A total of 61 comments were received as the result of the NPRM. The FHWA has evaluated them and has drafted a final rule which is now under review. The draft changes, if adopted, will permit the States to better concentrate their inspection resources on those bridges which need the most inspection effort. Although the net result will be that the standard inspection frequency will still be 2 years, some bridges will be inspected more often and others, in very good condition without adverse ambient or structural problems, could be inspected less often.

In summary, the Nation's bridge inspection program has matured steadily since its inception. During a period of rapid growth in truck traffic, limited resources and aging bridges, the program is doing its job. States and local governments have

forestalled bridge collapses, been able to cost-effectively rehabilitate bridges at the right time and have generally provided an unparalleled degree of bridge safety for the traveling public.

The FHWA will continue to work with bridge owners to bring about any needed changes to ensure the maximum degree of safety possible for our Nation's highway bridges.