



Testimony of the American Road & Transportation Builders Association

Hearing: "Oversight of the Highway Bridge Program and the National Bridge Inspection Program"

House Committee on Transportation and Infrastructure, concerning a hearing of the Subcommittee on Highways and Transit

July 21, 2010

The federal government has a long history of leadership in developing and maintaining the nation's bridges. There are few structures that so distinctly reinforce the federal role in transportation as bridges, which frequently link two neighboring states and enable interstate commerce. One only has to look a short way from the Capitol to the Woodrow Wilson Bridge for a shining example of the federal role in bridges.

It is clear, however, that with a quarter of our nation's bridges classified as deficient, we are in need of a focused plan to address this growing problem. As we saw with the I-35W bridge collapse in Minnesota, we cannot afford to wait and address the needs of some of our most critical bridges. Furthermore, bridges are vital to our national mobility and goods movement. Although the Highway Bridge Program (HBP) has been a great success in many ways, now is the time to challenge the status quo. In that regard, ARTBA created the Bridge Policy and Promotion Council which consists of leaders from transportation design and construction firms across the United States. Our testimony reflects those individuals' years of experience and leadership in the bridge industry. As we focus on bridge inspection as a section of these recommendations, overall we believe that the HBP should link funding to performance to provide a level of assurance that the funds are being applied cost effectively to improve and preserve the nation's bridges. This is similar to recent findings of the United States Government Accountability Office (GAO). In September 2008, the GAO issued a report evaluating the HBP, entitled "Clearer Goals and Performance Measures Needed for a More Focused and Sustainable Program". One of the findings stated that "the program lacks measures linking funding to performance and is not sustainable, given the anticipated deterioration of the nation's bridges and the declining purchasing power of funding currently available for bridge maintenance, rehabilitation, and replacement."¹

To address these challenges, the focus of the HBP must evolve to prioritize urgent bridge needs. A new level of accountability is needed to ensure that states are investing in replacement and

rehabilitation of those bridges that are most critical to public safety. The ARTBA Bridge Policy and Promotion Council proposes that, 1) a “National Risk Index” needs to be created in order to apportion bridge funding to the states according to a risk-based methodology; 2) an effective, consistent and accurate bridge inspection program is critical to ensuring that the nation’s bridges are safe and reliable; and, 3) an incentive mechanism be created that rewards states for achieving certain bridge condition performance standards.

Risk Based Prioritization

National Risk Index

Bridge condition and load capacities have historically served as the primary performance measures of bridge safety. Many catastrophic bridge failures in the United States have highlighted the need to adopt a more comprehensive safety assessment program for existing bridges, including risk factors such as: age, loads, environmental conditions, type of design, design details, level of redundancy, etc. Accordingly, it is critical that the Federal Highway Administration (FHWA) implement a data driven risk based methodology to prioritize funding for bridges most in need of remediation. Risk assessment should be the foundation used for apportionment of HBP funds and also for determining bridge inspection program practices (see below). This approach will ensure that investment and resource decisions are based on overall risk so that safety and reliability of state owned bridge inventories will be improved.

Terms such as “Structurally Deficient,” “Functionally Obsolete,” and “Sufficiency Rating,” have been used by the FHWA to establish eligibility for federal bridge funds and to apportion those funds to the states. These terms have been increasingly viewed as inadequate and inconsistent indicators of bridge performance. This risk-based methodology we propose would prioritize bridges based on their individual performance measures and whether they meet minimum acceptable standards to remain in service without immediate rehabilitation or replacement. The risk based methodology should use available as well as new data. A target (threshold) “National Risk Index” shall be established as part of this process and those bridges below the target index should be eligible for funding under HBP.

HBP funding should be apportioned based on each state’s share of the total U.S. bridge rehabilitation and replacement investment requirements necessary to comply with the “National Risk Index.” The goal is to rehabilitate or replace as many bridges that fall below the “National Risk Index,” within available funding limits. States would have the flexibility and discretion to select bridges from the eligible pool of bridges for improvement and to decide on project alternatives. Steady progress demonstrated by the states toward achieving the national standard for bridge performance for all bridges and the elimination of bridges below the “National Risk Index” in the inventory would be a direct measure of the effectiveness of the HBP funding in achieving overall improvements in bridge safety and serviceability. In essence, we are suggesting that federal funds should be aligned with documented bridge needs in the future.

Limited Transfer of Bridge Funds

Under the existing federal highway program, states are generally allowed to transfer up to 50 percent of the funds apportioned for one categorical program to another. For example, a state

could transfer a portion of its bridge funds to Interstate Maintenance activities. In fact, 11 states transferred \$634 million in FY 2006 bridge funds to other highway improvement initiatives.

Certainly, states should be provided sufficient flexibility to meet their own unique needs. However, that flexibility should not lead to critical needs going unaddressed. Consistent with our goal of linking investment to needs, a standard level of bridge performance should be established before funds can be redirected to other activities. This would preclude states from transferring bridge funds to other federal-aid highway programs, unless the state can demonstrate to the U.S. Transportation Secretary that the state does not have any bridges on federal-aid highways that are at a high risk level according to the “National Risk Index” (as established by the FHWA).

Recommended Approach for the National Bridge Inspection Program

The risk-based methodology outlined above should be used to modify our current bridge inspection practices. This will allow states to target inspection methodology and resources according to safety risk. The following key elements of the National Bridge Inspection Standards (NBIS) should be reevaluated based on the risk methodology:

- 1) **Bridge Inspection Intervals:** Current NBIS requires routine inspections every two years with possibility to extend to four years with FHWA approval. Fracture critical bridges (those that are arranged so that if one member fails, the bridge could collapse) require in-depth inspections every two years. These inspection intervals are equally applied to the entire bridge inventory and do not consider a bridge’s overall safety risk. For example, a new bridge may have the same inspection interval as a bridge that is 50 years old and in advanced stages of deterioration. The bridge inspection interval should be based on the bridge’s risk index, described earlier, which considers age, type of design and details, materials, loading etc. Bridges that have a very low risk index should automatically be considered for inspection intervals up to perhaps four years or even greater.
- 2) **Bridge Inspection Personnel:** NBIS currently sets minimum qualifications for project managers and team leaders. Here again this requirement is generally used across the entire bridge inventory. In the future, the bridge inspections team qualifications should be aligned with the risk index of the bridge to be inspected. Bridges that have a high risk index should require the project manager and team leader to be professional engineers with inspection and relevant design experience to the type of bridge being inspected. Bridges with a low risk index may not require the project manager and team leader to be professional engineers, but they should have a certain level of bridge inspection experience and have attended bridge inspection training.
- 3) **Bridge Inspection Methodology, Evaluation and Recording:** Consistent and uniform inspection methodologies should be better established and also tied to the National Risk Index. Use of non-destructive inspection methods and new

technologies should be evaluated and encouraged for bridges that have a high risk index.

Incentive-Based Investments

Although there are several categories of federal-aid highway and bridge improvement initiatives designed for specific purposes, such as maintaining the Interstate Highway System and upgrading bridges, there are no performance standards or monitoring to assure these specific goals are being achieved. The HBP currently receives roughly \$4 billion per year. The ARTBA Bridge Policy and Promotion Council proposes that \$500 million (or an appropriate share of total bridge funds) be set-aside for the U.S. Transportation Secretary's use as a "bonus pool" for states that document improvements in their bridge infrastructure network.

The U.S. Transportation Secretary would develop a process to evaluate state efforts to decrease their number of bridges that fall below the "National Risk Index" and maintain bridges in good condition. By August 1 of each year, the Secretary would divide the "bonus pool" among the states that decreased their number of bridges that fall below the "National Risk Index" and maintain the status of other bridges from the previous FHWA reporting period. The bonus funds would be awarded commensurate with the state's progress in improving and maintaining its bridges (i.e., the state with the largest decrease would get the largest share of bonus funds and the state with the smallest decrease would get the smallest share of bonus funds).

Concluding Remarks

In order to ensure that states are investing in replacement and rehabilitation of those bridges that are most critical to public safety, the ARTBA Bridge Policy and Promotion Council proposes revisions to the HBP that would link funding to performance. This would be achieved by implementing a risk-based methodology for bridge classification and the National Bridge Inspection Standards, as well as creating an incentive mechanism that rewards states for achieving certain bridge condition performance standards. The result of these new structural reforms would be a new federal bridge program that emphasized accountability over all other considerations. States would have substantial flexibility to maintain their inventory of bridges, but they would be required to demonstrate progress in addressing their most urgent needs. For the traveling public, this would ensure the safety of our nation's critical bridges while demonstrating wise stewardship of limited public resources.

Thank you for the opportunity to present these views to the committee, and we are happy to provide further details at your request.

ⁱ United States Government Accountability Office. Report to Congressional Committees. *HIGHWAY BRIDGE PROGRAM Clearer Goals and Performance Measures Needed for a More Focused and Sustainable Program*. September 2008.