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*by Mary Bortscheller**

The August 3, 2007 bridge collapse in Minneapolis, Minnesota focused the nation's attention once more on the grave state of aging infrastructure in the United States. Built in 1967, the Interstate 35W ("I-35W") bridge was ranked "deficient" as of 2006 by the National Bridge Inspection Program.[1] Nationwide nearly twenty-five percent of bridges are deficient; in fourteen states more than thirty percent of bridges are deficient.[2] While a deficient rating does not necessarily imply impending collapse or breakdown, it does mean that elements of a bridge need to be monitored and/or repaired.[3] Notwithstanding this definition, the disaster and the statistics beg the question: is the Minneapolis bridge collapse an ominous sign of problems to come for U.S. infrastructure, or a catalyst for a refreshed governmental approach to transportation infrastructure?

Investigation is still ongoing as to the precise cause of the summer bridge collapse in Minnesota. Whatever the final determination comes out to be, plans are moving forward for a replacement bridge to span the Mississippi River in downtown Minneapolis. The new I-35W bridge will be funded by the federal and Minnesota state governments. The stated goals of the City of Minneapolis, which is involved in planning for the new bridge, include "improved vehicle capacity and . . . transit capacity," that the new bridge design "incorporate options for future transit improvements" and that it "be built to meet all current environmental standards."[4]

Within these goals, there is the potential for Minnesota to lead by example and take infrastructure construction in a more sustainable direction. In the same vein as the U.S. Building Council's Leadership in Energy and Environmental Design ("LEED") green building criteria, sustainable bridge building practices would incorporate heightened environmental concerns into the usual considerations of cost and aesthetics. Although currently no equivalent to the LEED criteria exists for sustainable bridge design, there are various elements that bridge planners in Minnesota and elsewhere could consider with an eye towards sustainability.[5]

A bridge that lasts longer without needing extensive repair or a complete overhaul is by definition more sustainable. High performance construction materials would help to create a bridge that remains solid and useable for generations. Aluminum and high performance concrete are two examples. Aluminum is substantially lighter than concrete, requiring fewer welds be made during construction and less overall weight-bearing supports. High performance concrete provides better long-term performance and reduced life-cycle costs than traditional concrete.[6] The technology exists to allow construction of transportation infrastructure that is durable and ultimately safer for everyone.

Courtesy of Jalopnik at Flickr.com

I-35W bridge collapse

Prior to the collapse, the I-35W bridge had eight lanes for motor vehicle use only. A new bridge constructed with an eye towards sustainability would incorporate a mixed use approach, creating a transit corridor for motor vehicles, high occupancy vehicles, and light rail. Carrying higher volumes of people over a single structure increases the general efficiency of infrastructure, minimizing the need for future resource and time expenditures in future expansion.

Sustainable design practices in transportation systems are not yet widely used. Bridges are expensive, and the design that serves the purpose at the lowest cost is the one usually chosen in a transportation plan.[7] Incorporating innovative materials and special lanes inevitably adds to the upfront economic cost of a conventional bridge. But if long-term usability, safety, and environmental impact of a bridge are considered, then the greater initial cost becomes an investment in the future. Federal and state funds together pay for the bridges, tunnels, roads, and transit arteries that keep people and goods moving throughout the United States.[8] The government must place a greater priority, through increased funding targeted at sustainability, on the planning, construction, and maintenance of transportation infrastructure.

The passage of the 1956 Highway Revenue Act provided for the interstate highway system of which the I-35W bridge was a part. In 2006 that Act marked its fiftieth year.[9] In the wake of the Minneapolis bridge collapse and other infrastructure failures around the country, it is vital for the federal and state governments to take a new look at the way the United States plans and constructs its transportation network.

Endnotes: Minneapolis Bridge Collapse *continued on page 84*

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Endnotes: Minneapolis Bridge Collapse *continued from page 37*

[1] U.S. Dep't of Transp. Office of Public Affairs, *I-35W Bridge Collapse*, *Minneapolis, MN*, http://www.dot.gov/affairs/factsheet080207.htm (last visited Oct. 18, 2007) [hereinafter *I-35W Bridge Collapse*].

[2] Reason Foundation, State-by-State Ranking of Deficient Bridges, *available at* http://www.reason.org/news/deficient_bridges_by_state_080307.shtml (last visited Oct. 18, 2007).

[3] *I-35W Bridge Collapse*, *supra* note 1.

[4] Minneapolis I-35W Bridge Collapse Information, *Vision for a New Bridge*, http://www.ci.minneapolis.mn.us/minneapolisrebuilds/vision.asp (last visited Oct. 18, 2007).

[5] Lauren R. Hunt, Development of a Rating System for Sustainable Bridges 6 (May 31, 2005) (unpublished M.S. thesis, Massachusetts Institute of Technology), *available at* http://dspace.mit.edu/bitstream/1721.1/31115/1/61146095.pdf (last visited Oct. 18, 2007).

[6] U.S. Dep't of Transp. Federal Highway Administration, *High-Performance Materials: A Step Toward Sustainable Transportation*, http://www.tfhrc.gov/pubrds/spring97/high.htm (last visited Oct. 18, 2007).

[7] Hunt, *supra* note 5, at 8.

[8] U.S. Dep't of Transp., Federal Highway Administration website, http://www.fhwa.dot.gov/ (last visited Oct. 18, 2007)

[9] U.S. Dep't of Transp. Federal Highway Administration, *Celebrating 50 Years: The Eisenhower Interstate Highway System*, http://www.fhwa.dot.gov/interstate/homepage.cfm (last visited Nov. 2, 2007).