

## Real Estate Title Insurance & Construction Law

### Lessons From the Minneapolis Bridge Collapse

Effective governmental oversight is essential

By Robert C. Epstein

The nation was shocked last year when a major bridge over the Mississippi River in Minneapolis collapsed during rush hour, killing 13 people. In a report issued November 15, 2008, the National Transportation Safety Board found that the collapse resulted from a combination of engineering error, deficient oversight of the construction project and inadequate post-construction inspections by the responsible governmental agencies.

According to the U.S. Department of Transportation, one-third of the nation's major roads are in poor or mediocre condition and 26 percent of its bridges are structurally deficient or functionally obsolete. Sewer and water systems throughout the country are decrepit and in dire need of upgrading. The nation's air traffic control system is obsolete, leading to chronic flight delays and near-collisions on runways. School facilities are inadequate and overcrowded. The American Society of Civil Engineers estimates that \$1.6 trillion dollars is needed just to bring the country's infrastructure to a state of good

*Epstein is a shareholder with Greenberg Traurig in Florham Park, where he heads the Construction Group.*

repair.

The Minneapolis bridge collapse and other recent public project disasters, where government ineptitude played a part, dramatically show that deficient governmental oversight of public works projects can and does lead to disasters. The lesson from these recent public project tragedies is that effective governmental oversight is essential as the country's infrastructure is rebuilt. As the country spends billions rebuilding, the national challenge is to put in place effective systems, checks and balances so there is no doubt that the nation's public improvements are safe.

#### NTSB Report On The Minneapolis Bridge Collapse

At 6:05 p.m. on Wednesday, August 1, 2007, the eight-lane, 1,907-foot-long I-35W highway bridge over the Mississippi river in Minneapolis experienced a catastrophic failure in the main span of the deck truss. As a result, 1,000 feet of the main span collapsed, with about 456 feet of the main span falling 108 feet into the 15-foot-deep river. A total of 111 vehicles were on the portion of the bridge that collapsed. Of these, 17 were recovered from the water. As a result of the bridge collapse, 13 people died and 145 people

were injured.

In a report announced November 15, 2008, the National Transportation Safety Board determined that the probable cause of the collapse was the bridge's inadequate load capacity due to an error by the engineering firm that designed the bridge in the 1960s. The NTSB concluded that "gusset plates" — steel plates that connect the bridge's steel beams — had inadequate capacity as the result of an error by the design engineering firm. The design firm failed to perform necessary engineering calculations to measure the strength of the gusset plates, and as a result some gusset plates had inadequate strength (the plates were half as thick as they should have been). The NTSB found that the engineering firm's design review process was inadequate in that it did not detect and correct the gusset plate design error before the plans were made final.

Compounding the engineering error was deficient governmental oversight. The NTSB found a lack of systematic review by engineers from the Minnesota Department of Transportation and Federal Highway Administration, who apparently relied on the designing engineer's quality assurance and did not check the gusset plate design. The NTSB found that in accepting the bridge plans, neither federal nor state authorities evaluated the gusset plate design in detail, nor was it standard

practice for them to do so. The NTSB also found that current federal and state inspection procedures are inadequate to detect design errors in bridges. The agency found that generally accepted inspection practices among federal and state transportation officials give inadequate attention to conditions of gusset plate distortion, such as bowing, and exclude gusset plates in load rating analyses. The NTSB noted that inspectors observed gusset plate distortions prior to the bridge collapse.

#### **Last Year's NTSB Report On The Boston Tunnel Collapse**

The 2008 NTSB report on the Minneapolis bridge collapse comes on the heels of the agency's 2007 report on Boston's "big dig" tunnel collapse. The NTSB found that deficient governmental oversight also was partly to blame for that tragedy.

At about 11 p.m. on Monday, July 10, 2006, a 1991 Buick passenger car occupied by a 46-year-old driver and his 38-year-old wife was traveling eastbound in the Interstate 90 connector tunnel in Boston, Massachusetts, en route to Logan International Airport. As the car approached the end of the Interstate 90 connector tunnel, a section of the tunnel's suspended concrete ceiling detached from the tunnel roof and fell onto the car. Concrete panels from the ceiling crushed the right side of the car roof. A total of 26 tons of concrete and associated support structure fell onto the car and the roadway. The driver's wife, occupying the right-front seat, was fatally injured; the driver escaped with minor injuries.

The tunnel where the collapse occurred was part of Boston's Central Artery/Tunnel

project — known as the "Big Dig" — that is generally regarded as one of the most complex and costly public infrastructure projects ever undertaken in the United States. It was intended to improve traffic flow in downtown Boston by replacing deteriorated and congested elevated roadways, extending the Massachusetts Turnpike to Logan International Airport, providing an interchange for two interstate highways and replacing a bridge over the Charles River. The project was completed in 2006 at a final cost in excess of \$14 billion.

In a July 10, 2007, report, the NTSB found that the probable cause of the ceiling collapse was the use of an epoxy anchor adhesive with poor "creep resistance," that is, an epoxy formulation that was not capable of sustaining long-term loads. The NTSB found that, among other factors, the tunnel collapse resulted from inadequate inspections by the Massachusetts Turnpike Authority. The agency concluded that, had the MTA at regular intervals inspected the area above the suspended ceilings in the tunnel, the condition which led to the collapse would have been detected and the ceiling collapse could have been prevented.

#### **The Need For Effective Governmental Oversight**

These two recent and shocking public infrastructure disasters show that governmental oversight of public works projects must be improved as the country's infrastructure is rebuilt. Deficient governmental oversight significantly contributed to the collapse of both the Minneapolis bridge and Boston tunnel, either due to administrative failures during the construction

process or inadequate inspections after the construction was completed. Both disasters involved major public works projects which were designed, managed and built by some of the most sophisticated companies in the world, and overseen by a variety of state and federal agencies. Catastrophic failures occurred nevertheless.

The country's crumbling infrastructure was a national crisis even before the current recession, but the economic meltdown has made public works projects even more crucial as sources of economic stimulus. A centerpiece of President Obama's economic recovery plan is spending hundreds of billions to rebuild America's infrastructure. States are accelerating public works projects in order to boost economic activity, as other areas of the economy falter. The financial crisis therefore may increase the risk of deficient governmental oversight as public works projects are rushed forward to stimulate the economy.

As the nation rebuilds itself in the coming years, more effective safeguards, checks and balances must be added to the traditional ways of designing and delivering public construction projects. What is needed is new thinking, not more government bureaucracy, red tape and delays. While it is impractical to have double and triple layers of review of every engineering decision on major projects, the recent disasters mandate a top-to-bottom review of how engineering decisions are made on major construction projects and how responsible government agencies oversee the private sector performing public construction. As the nation rebuilds its infrastructure in the coming years, the public's safety requires nothing less. ■