

History Shows Infrastructure Plans Need Better Oversight

By **Robert Epstein and Jacqueline Greenberg Vogt**

September 20, 2017, 10:45 AM EDT

The country's crumbling infrastructure is a national crisis, and the Trump administration has announced ambitious plans to rebuild it.

According to the U.S. Department of Transportation, almost half of the nation's major roads are in poor or mediocre condition and one-third 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 airports are antiquated and air traffic control systems are obsolete, leading to chronic flight delays and near-collisions on runways. The American Society of Civil engineers estimates that \$4.6 trillion dollars is required just to improve the country's infrastructure to a state of good repair.

As the nation rebuilds itself under the current administration's aggressive plans, new, innovative, creative, more effective management techniques and safeguards must replace the traditional, entrenched ways of overseeing public construction projects. History presents many examples of public construction projects that were ineffectively or incompetently overseen, leading to cost overruns, delays, defective construction and, at times, catastrophic failures.

Investigations into major failures on public construction projects have concluded that poor project management and oversight and the lack of adequate checks and balances and quality assurance contributed in large part to those failures. The lesson that must be learned from the following case studies is that government oversight of public works construction projects has to improve. The government must take corrective measures to ensure greater efficiency, safety and success as the country's infrastructure is rebuilt.

History Lesson #1: Incompetent Project Management — Cost Overruns at the Colorado VA Hospital

In 2012, the U.S. Veterans Administration undertook one of its largest medical facility construction projects, the Denver-Aurora Medical Center in Colorado, consisting of over one million square feet of construction with an initial project budget of approximately \$600 million. The project experienced \$1 billion in cost overruns and years of delay, prompting Congress to direct the Army Corps of Engineers to investigate the project to determine the causes of the substantial overruns and extensive delays.



Robert Epstein



Jacqueline Vogt

In a June 8, 2015, report, the Corps found that the VA's ineffective, incompetent project management and oversight was the root cause of the cost overruns and delays. The Corps found that the VA "had significant shortfalls in the Construction Management-Commissioning phase, as well as critical deficiencies in Project Baseline Pricing, Acquisition Strategy and Contracting, Change Management, and overall Disciplined Governance."

The Corps determined that, without "transformative change in organizational processes," the VA "will undoubtedly continue to experience major delays and cost overruns in medical infrastructure delivery." These conclusions were echoed in a decision of the United States Civilian Board of Contract Appeals, which ruled that the VA's management decisions materially breached the construction contract. See *Kiewit-Turner, JV v. Dep't. of Veterans Affairs*, CBCA 3450 (Dec. 9, 2014).

History Lesson #2: Ineffective Project Oversight — The Big Dig Tunnel Collapse

On Monday, July 10, 2006, a car occupied by a driver and his wife was traveling 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. Twenty-six tons of concrete and steel fell onto the car, instantly killing the woman in the passenger seat.

The tunnel where the collapse occurred was part of Boston's Central Artery/Tunnel project — known as the "Big Dig" — that generally is 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.

The National Transportation Safety Board found that the probable cause of the tunnel ceiling collapse was the use of an unsuitable material to secure the ceilings — an epoxy anchor adhesive that was incapable of sustaining long-term loads. The NTSB also found that inadequate inspections by the Massachusetts Turnpike Authority contributed to the collapse. The agency concluded that, had the MTA inspected the area above the suspended ceilings in the tunnel at regular intervals, the condition which led to the collapse would have been detected and the collapse could have been prevented.

History Lesson #3: Ineffective Project Oversight — The Minneapolis Bridge Collapse

On Aug. 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 deck truss 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.

The NTSB determined that the probable cause of the collapse was the bridge's inadequate load capacity due to an error by the design engineering firm. The NTSB concluded that "gusset plates" — steel plates that connect the bridge's steel beams — were half as thick as they should have been. The NTSB found that the design engineering firm failed to perform necessary engineering calculations to measure the strength of the gusset plates and the firm's design review process failed to detect this omission before

the plans were finalized.

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 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 the prevailing federal and state inspection procedures were inadequate to detect design errors in bridges.

Lessons Learned

All of the described projects 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. Uncontrolled cost overruns, years of delay and/or catastrophic failures occurred nevertheless, due in significant part to ineffective or incompetent governmental oversight, management and quality control.

Without change, the history of ineffective governmental project management exemplified by these projects will continue to repeat itself. What is needed is new thinking and better management and planning, not more government bureaucracy, red tape and delays. The public interest and public safety require no less.

Robert C. Epstein is a shareholder at Greenberg Traurig LLP, and co-chairs the firm's national construction law practice. Jacqueline Greenberg Vogt is of counsel at Greenberg Traurig, and a member of the construction law practice.

The opinions expressed are those of the author(s) and do not necessarily reflect the views of the firm, its clients, or Portfolio Media Inc., or any of its or their respective affiliates. This article is for general information purposes and is not intended to be and should not be taken as legal advice.