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Road Work Ahead! Five Solutions for Repairing the Nation's Infrastructure

By Barry B. LePatner

The economy isn't the only national system that needs repairing. As this past summer's levee breaks and other recent disasters indicate, America's infrastructure is also in serious trouble.

While policymakers and pundits focus on the financial meltdown, another crisis is brewing in the U.S.: Our infrastructure system is silently deteriorating more and more as each year passes. Frighteningly, we have experienced over 500 bridge failures since 1989 according to one recent study. The aftermath of Hurricane Katrina was another warning as levees broke destroying swaths of New Orleans. Then came the tragic I-35W bridge collapse of August 2007. Finally, the levee breaks of this past summer served as yet another illustration of how dire the situation has become. The lesson is clear. We must overhaul the broken systems that have led us to this point—and we don't have a moment to lose.

We all know the nation's vast infrastructure problems cannot be fixed overnight. However, by aggressively moving toward a solution now—rather than applying a series of ineffective 'band-aids'—we can begin to make real improvements that will benefit our country for generations to come.

Tackling our critical transportation and infrastructure problems will require a national commitment and a strategic plan that should include the following solutions:

Create a national clearinghouse and database, accessible to every state transportation agency and the general public.

The database will identify all design and construction issues affecting our nation's infrastructure. Through the Federal Aviation Agency, the airline industry has alerts that immediately advise all airlines of problems with an aircraft and require immediate attention before similar planes can go back into service. A similar database should be created to require the FHWA and the NTSB to alert all state transportation departments of any bridge failure in the nation and include methodologies for remedial design as well as alerts for maintenance problems for all of America's 600,000 bridges.

This information can no longer be buried in state files, particularly given the fact that many politicians have evinced a history of ignoring significant problems and leaving them for future administrations. By making this information the subject of alerts available to the public, we will enable state transportation engineers to take preventive action more quickly, help

members of the public avoid unsafe bridges, and put politicians and officials on notice that they will be held accountable for neglecting to take appropriate action.

There is already evidence that making infrastructure problems public can lead to protective measures. In May 2008, nearly a year after the collapse of Minneapolis' I-35W bridge, Minnesota's Department of Transportation closed the Winona Interstate bridge because inspectors had documented rusted and corroded gusset plates in 2006 and 2007. The bridge had not been closed until federal officials identified defective gusset plates as the potential cause of the I-35W disaster. Equally important, MnDOT officials had no prior knowledge that a failure of gusset plates similar to those they experienced on the I-35W bridge had occurred over the Grand River in Ohio in 1996. By June 2008, MnDOT announced that they would replace eleven major bridges in the state, some with the same concerns about deteriorated gusset plates that had gone undetected.

State governments should step up their efforts to protect their citizens.

State governments must do everything in their power to ensure they have informed their citizens—either through hearings, press conferences, or news releases—about bridges that have received structurally deficient ratings. In addition, they should be obligated to develop a game plan for correcting problems within six months of a bridge's designation as "structurally deficient." One in four bridges in our nation have been rated as either "structurally deficient" or "functionally obsolete." The public should receive annual updates on the remediation progress and be given notice if funding for the repairs is not provided within 18 months.

Enact a plan to deal with our nationwide shortage of civil and structural engineers.

These professionals are trained in advanced inspection methodologies and are experts in remediation of deficient bridges. But the lack of these types of engineers on the staffs of state transportation departments—positions that have been systematically downsized due to decreased transportation funding—prevents them from adequately performing the inspections critical to assessing the safety level of each state's bridges.

Not only should we create initiatives to help encourage the nation's young people to pursue these careers, but state transportation departments must increase compensation to hire and retain engineers to keep them from departing to private industry. Engineers are often the first to be laid off from state transportation departments because of their high salaries. This can no longer be the case. State governments can and must recognize the ability to reduce long-term maintenance costs rests with these engineers' valued experience.

Invest in advanced technologies that help save money and provide more accurate inspections.

By the time cracks appear in a bridge's structure, the costs for remediation have skyrocketed. The problem is, many of today's inspection techniques fail to detect cracks until they are

visible to the human eye. In addition, the Federal Highway Administration has acknowledged that visual inspections of bridges are highly subjective and not totally reliable in detecting cracks in critical structural elements before they become visible.

Technology exists to anticipate bridge remediation years before rust, corrosion, and cracks in the structure appear. We just need to fund states to purchase this equipment and train their inspectors to use it. Enabling bridge inspectors to ensure precision and objectivity in their evaluation process, which in turn allows us to catch problems earlier when they are easier to fix, can save our nation countless millions of dollars in unnecessary remediation costs.

Enact reforms to help us avoid another Big Dig.

For those who don't know, the Big Dig is the most expensive highway project ever. Its original budget, set back in 1985, was just over \$2 billion. It was revealed last year that the real cost of the project will reach \$22 billion with a pay-off set for 2038. According to a recent Boston Globe article, the Big Dig has dealt a considerable financial blow to the state of Massachusetts. The article states, "Big Dig payments have already sucked maintenance and repair money away from deteriorating roads and bridges across the state, forcing the state to float more highway bonds and to go even deeper into the hole [...] Massachusetts spends a higher percentage of its highway budget on debt than any other state."

The Big Dig epitomizes everything that is wrong with the construction industry, which is rife with cost overruns and missed schedules. The industry itself will have to be reformed before we can start making progress in repairing the nation's infrastructure. An essential part of that reform will come in the form of better contracts that would 1) be based on 100 percent complete architectural and engineering drawings and specifications, 2) include a fixed price for everything designed and approved by the owner, and 3) apportion all the risks that are expected during construction between the parties.

The construction industry is the most inefficient industry in our nation, where the average project wastes as much as 50 percent of the total labor cost. Establishing fixed-priced contracts on large infrastructure remediation projects will lead to savings of billions of public dollars. When you consider the huge numbers of projects that must be completed in order to restore America's infrastructure, it is clear that American taxpayers can't afford a 'business as usual' mindset anymore.

The current financial crisis has caused many of us to think about what the nation's priorities should be. Certainly, repairing the economy should be at the top of the list. But as the Obama Administration settles into office, it should make repairing the nation's infrastructure a priority as well. After all, these two issues are connected. We cannot have a prosperous nation without providing a safe infrastructure system for our citizens and businesses.

An added bonus is that every \$1 billion in infrastructure spending is estimated to create 47,000 new jobs. By taking the steps necessary to tackle our infrastructure problem now, we

have an opportunity to improve our economy with the great ROI of a better, safer infrastructure system that will lead to a stronger nation.

About the Author:



Barry B. LePatner

Author



Barry B. LePatner is the founder of the New York City-based law firm LePatner & Associates LLP. For three decades, he has been prominent as an advisor on business and legal issues affecting the real estate, design, and construction industries. He is head of the law firm that has grown to become widely recognized as one of the nation's leading advisors to corporate and institutional clients, real estate owners, and design professionals.

Mr. LePatner is widely recognized as a thought leader in the construction industry. A November 2007 *Governing* magazine article stated, "If there's a guru of construction industry reform, it's LePatner." In an article entitled "Building a New WPA," appearing in the November 24, 2008, issue of *New York* magazine, he was referred to as "a Cassandra of infrastructure." And an article on *Infrastructurist.com* entitled "Trillion-Dollar Barry: One Man's Quest to Keep America Solvent" states that Mr. LePatner has been hailed as "a leading expert on the construction industry."

His latest book, *Broken Buildings, Busted Budgets: How to Fix America's Trillion-Dollar Construction Industry* (The University of Chicago Press), which was reviewed in the *Wall Street Journal*, has created a national debate among owners, designers, and other key stakeholders. Mr. LePatner has been featured in *BusinessWeek*, the *Boston Globe*, the *New York Times*, *Crain's New York Business*, the *Chicago Tribune*, and other prestigious publications. His articles and speeches on the perilous state of our nation's infrastructure have garnered him widespread attention. He has appeared on many television and radio broadcasts, including a CNBC appearance and several National Public Radio segments.

topics central to trends affecting the real estate and construction industry at events throughout the country for audiences including contractors, architects, engineers, construction technology experts, economic experts, and other construction industry thought leaders.

Mr. LePatner has written extensively and is widely quoted in the media on the subject of construction law. He previously co-authored the legal sections of the *Interior Design Handbook*, McGraw-Hill 2001, and *Structural & Foundation Failures: A Casebook for Architects, Engineers & Lawyers*, McGraw-Hill 1982, with Sidney M. Johnson, P.E. Mr. LePatner is currently writing a new book that takes a look at what needs to be done to rebuild the nation's infrastructure. To be published early in 2010, it will address our decades-old failure to redress our deteriorating roads and bridges and will offer insightful recommendations on how to finance and build this critical part of our nation's backbone.

In 2007 and 2008 Mr. LePatner was selected as a Super Lawyer by the publisher of *Law & Politics* magazine. In 2002, Mr. LePatner received an Honorary AIA Membership. He is also currently on the Board of Trustees of the Design Industries Foundation Fighting AIDS (DIFFA). He has also served on numerous advisory committees including: the Advisory Board, Society for Marketing Professional Services; the Board of the New York Building Congress; Board of Advisors, Legal Briefs for the Construction Industry; American Institute of Architects Advisory Committee; and the National Academy of Sciences.

For more information, visit www.brokenbuildings.com.