

Bridging the Gaps: Six Solutions for Repairing the Nation's Crumbling Infrastructure

The National Transportation Safety Board's recent report on the Minneapolis I-35 bridge collapse provided a glimpse into just how dire the situation is with our nation's infrastructure. The report only added to concerns that inspections are infrequent and insufficient, transportation funding is inadequate and improperly used, and the nation lacks the proper number of experts to fully examine the situation.

Construction attorney Barry B. LePatner says now is the time to redeem our former neglect. That means transforming the way we think about not only our nation's infrastructure, but the nature of the construction industry itself. He offers the following six solutions:

- **Establish a standardized nationwide system for categorizing the remediation needs of America's infrastructure.** Many problems with our nation's infrastructure have resulted from the relaxing of inspection standards in recent years, says LePatner. As a result, different engineers can categorize structural problems differently, often for political reasons. For example, in a situation where a decision maker knows money for remediation is not available, lax standards make it possible for him to "dumb down" a report so that action will be deferred. The upshot is that the engineer reporting on bridge A might write it up as being in dire need of repairs because of early signs of corrosion. Meanwhile, bridge B—which is in far worse shape—might be put into a less urgent category.

"We need a strict nationwide standard for categorizing these remediation needs—at both state and federal levels—and for training inspection engineers," notes LePatner. "That way we can assure uniformity of infrastructure assessments, and serious problems in bridges, tunnels, and highways will be more likely to be reported and dealt with."

- **Institute a national impetus for increasing the number of engineers and construction experts.** Right now we're woefully undermanned, says LePatner. America simply doesn't have the structural engineers it needs to perform the overwhelming amount of remediation that must be done.

"I would like to see a national effort aimed at increasing the numbers of civil engineers and construction experts needed to address America's infrastructure problem," he says. "Think of it as a 21st century version of the 1950's push for science education in the aftermath of Sputnik. We need to tell our young people that construction is an exciting and noble career, and strengthen those areas of our school system accordingly."

• **Ensure that tax dollars directed toward construction projects are spent wisely.** This is frequently *not* the case, says LePatner. He reports that a meta-survey of the construction industry's productivity analyses recently concluded that up to 50 percent of all money spent on construction labor is wasted because of late deliveries, poorly coordinated subcontractors, and other circumstances preventing employees from engaging in productive onsite work. These inefficiencies are due in large part to the inherent flaws in our nation's \$1.23 trillion construction industry, which LePatner calls "the last mom & pop industry in America."

The solution, he says, involves reforming the way public officials work with contractors. For instance, they must:

- ✓ Insist on true fixed-price contracts. Standard contracts devised by members of the industry are generally insufficient as they a) fail to properly allocate risk among the parties, and b) provide proven loopholes for contractors to make claims for additional costs.
- ✓ Retain skilled, experienced onsite construction representatives with in-depth knowledge who can oversee not only quality, but the true cost for the work.
- ✓ Ensure that there are milestone dates for substantial completion and partial completion of remediation. Use both incentives and penalties to ensure timeliness.
- ✓ Purchase materials in bulk to leverage economies of scale.

"By implementing these suggestions even partially, our nation can save billions of dollars," he insists.

• **Overhaul the nation's infrastructure inspection system.** As it stands, bridge inspections are required only every couple of years, and because inspectors look only for visible cracks and corruptions, those inspections are superficial at best. Frighteningly, many bridges are still operating under their original load calculations. For example, when the I-35 bridge was constructed 40 years ago, calculations were made to determine the maximum load the bridge could hold, which includes considerations for the amount of traffic that would be using the bridge and also whether the bridge could accommodate heavy vehicles. But despite the fact that traffic volume increased over the years and renovations were made that added to the weight of the bridge, no new calculations were made to determine the load the bridge could safely hold under today's conditions.

"What's even more mind-boggling than the findings of the report is the fact that even after what they've found, the NTSB is still only recommending, not *requiring*, that bridge owners recalculate bridge loads periodically," says LePatner. "The whole inspection system needs to be overhauled. And I think it should start with the NTSB making more stringent requirements for these bridge inspections and the federal and state governments doling out stiffer fines when bridges aren't properly maintained. The problem won't stop growing until we can get a hold on the inspection process."

• **Invest in the latest technology.** The methods used to detect the cracks and corrosion in today's bridges are insufficient. Most inspection methods cannot detect microscopic problems. But according to the Center for American Progress, wireless sensor technology exists that allows all aspects of a bridge to be examined from strain to temperature to seismic activity. Perhaps the best thing about the new sensors is that they can be attached or embedded on bridges so that a bridge's condition can be monitored as frequently as necessary. "What this new technology can do is amazing," says LePatner. "It will provide more frequent, more reliable information on our nation's bridges, greatly reducing the likelihood of human error and conflicting reports on a bridge's condition. Every state should use this technology to assess which bridges need immediate repairs."

• **Review the transportation funding process.** With hundreds of billions of dollars needed to repair all of the problems in our nation's infrastructure, every penny of funding that is doled out for transportation should be used wisely and appropriately. Unfortunately, that just doesn't happen. Money has been stripped away from the transportation agencies, which need all of the funding they can get in order to get a handle on the country's infrastructure problem. Add to that the fact that money given to the state governments by the federal government for transportation is often used for projects that may be more noticeable to taxpayers but does nothing for public safety. For example, a state government can use part of its transportation budget to beautify a park rather than buy new infrastructure inspection equipment or fund the repairs of a failing bridge.

"Money has to be earmarked specifically for infrastructure repairs on a state and local level," says LePatner. "Politicians have to realize that these failing bridges are threatening citizens' day-to-day safety, national security, and an already struggling economy. The costs will come due eventually whether they happen now or after the next major collapse. It's time to be proactive."

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