

Design engineers' liability may now extend indefinitely

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Most of us recall the horrific footage from the Interstate 35W bridge collapse that occurred just over five years ago in Minneapolis. The images of vehicles dangling precariously over the Mississippi River as rescuers frantically raced to the aid of the victims will be forever etched into our memories.

That catastrophic event, which killed 13 people and injured 145 others, not only lives on for those directly harmed by the collapse. Litigation between the bridge's owner, the State of Minnesota, and the bridge's designers recently reached a precedent-setting conclusion. More than 40 years after the steel and concrete structure was built, the original designers have been held liable for fundamental errors in design and construction.

The legal dispute, which was not resolved until May 2012 when the U.S. Supreme Court refused to hear an appeal of the Minnesota high court's ruling, is cause for alarm for construction firms, and their insurers, nationwide. That's because of an extraordinary decision by the Minnesota legislature to nullify its existing statute of repose in the case of the I-35W bridge failure.

Despite the fact that the bridge was more than four decades old, Minnesota's lawmakers retroactively lifted the statute of repose, paving the way for the state's lawyers to seek reimbursement from Jacobs Engineering Group to the tune of \$37 million. (Jacobs is the successor to the now-defunct company that designed the bridge in the 1960s.) The amount represents the size of the compensation fund distributed to the victims.

Though the Minnesota Attorney General's office argued in court that this particular incident was a "discrete and unprecedented event," an extraordinary slide has now been taken down a very slippery slope. Who would doubt that, when faced with the next catastrophic failure of critical transportation infrastructure, another state's AG will not pursue similar recourse? At the very least, the simple threat of such an action could be enough to compel a costly settlement from the suddenly exposed party.

The Minnesota Supreme Court's ruling has the potential to dissolve any perceived protections companies believe they have due to prevailing statutes of repose.

This ruling has understandably sent shudders throughout the construction industry, as well as its insurers. After all, with the nation's deteriorating infrastructure already a source of widespread concern, it seems only a matter of time before the next fatal accident.

Is any construction firm safe? Is any span of time long enough to shield a company from liability for a flawed structural design when pitted against a state with victims to compensate?

One clear lesson from the Minnesota bridge litigation is that contractors, project managers and even insurance companies have their strongest incentive yet to specify the most durable products. In an environment where states can retroactively change their laws to hold engineers liable for perceived design flaws, specifying inferior products or products with inherent installation risks can be professional, and financial, suicide.

On a positive note, a provision in the new federal transportation bill – the “Moving Ahead for Progress in the 21st Century Act” (commonly known as MAP-21) – passed this summer gives engineers from state departments of transportation more professional discretion when selecting culvert and storm sewer products for highway construction projects.

Section 1525 of the MAP-21 bill now declares that “*States shall have the autonomy to determine culvert and storm sewer material types to be included in the construction of a project on a Federal-aid highway.*”

This seemingly commonsense provision corrects a serious flaw in previous legislation that required DOT engineers to give full consideration to all available piping and culvert products for every federally funded highway construction project. While this mandate, on its face, may have seemed relatively innocuous, the law required engineers to provide detailed justification for each material option they chose *not* to select, as well as “proof” for each of these justifications, adding additional, unnecessary steps to an already cumbersome process.

Too often, even when years of practical experience had demonstrated otherwise, these engineers had no choice but to adhere to the letter of the law and select piping or culvert materials they knew would likely require excessive maintenance and/or repairs well before the end of their “projected” service life.

Several recent incidents highlight the unintended consequences that can occur when federal mandates tie the hands of local decision-makers.

In September, a large sinkhole opened up on a Highway 174 off-ramp in Ottawa.

A single-passenger automobile virtually disappeared after the roadway gave out due to the collapse of a steel pipe buried beneath the street, severely injuring the driver.

In Clark County, Wisconsin, three motorists were killed in June when a flash flood caused a 50-foot wide section of road to collapse and wash away. The culprit in that fatal event was a large diameter corrugated metal pipe that failed underneath the roadway. A Milwaukee couple and a woman from Thorp, WI, died when their trucks fell more than a dozen feet into the ravine and became partially submerged.

And in Jasper, Texas, a state-of-the-art fish hatchery was delayed by more than a year, thanks to the collapse of a plastic drainage system. The \$27 million project commissioned by the Texas Parks & Wildlife Commission was disrupted due to improper pipeline design and inadequate installation, followed by months of legal jockeying and, finally, the complicated repair process.

In the end, roughly 11,000 feet of high-density polyethylene (HDPE) pipe of questionable structural integrity were replaced with two miles of reinforced concrete pipe and polyvinyl chloride pipe. HDR/FishPro, the fish hatchery design firm that managed the project, and its insurers were compelled to absorb nearly 100 percent of the \$3.3 million repair bill. And that doesn't even count their hefty legal tab.

On further inspection, in each of these projects products that either were not durable enough to support the heavy load or were not installed with sufficient backfill materials or proper compaction in the pipe envelope to prevent the flexible materials from buckling and/or giving way appear to have been improperly specified.

Given the increased scrutiny and potential retroactive legal liability portended by the legislative response to the Minnesota bridge collapse, state DOT engineers and contractors can breathe a little easier knowing that the federal DOT will now allow them to determine – without any interference or guidance from a Washington bureaucrat – the best choice of material for culvert pipes used in the construction of highways.

Now more than ever, highway design engineers must use the utmost vigilance in executing their prescribed duties. In every instance, the engineer must ensure that the design meets the desired purpose, is constructible, and protects the health, safety and welfare of the traveling public. Before making a final determination to specify any pipe material, the engineer has a responsibility to analyze the structural integrity, durability and efficiency of installed pipe materials as well as

their ability to withstand unexpected events such as tanker spills, wildfires and any other risks that may be identified during the selection process.

No engineer can afford to wake up 20 or 30 years from now and find out that a plastic pipe system they designed under a state roadway failed prematurely, especially when state legislatures may nullify statutes of repose in order to hold them liable for poor design choices decades after the choice was made.

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