

## COMMENTARY: Trust Your Engineers to Choose the Right Project Materials

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As a professional engineer, I have spent my career focused on infrastructure projects. While this has given me a unique perspective on the importance of these efforts, over the years I have also worked very closely with community leaders and elected officials on their major infrastructure upgrades, such as in our local water systems, that has given me some insight into the pressures on governments that are trying to repair and replace critical projects on sometimes shoe-string budgets.

We must think creatively to find the right solutions, but being creative doesn't mean being cheap or cutting corners.

Every state, city, county, town and village has a process for developing specifications for everything from the engineers to the kinds of materials that could be used. Based on those specifications, the local government then solicits and accepts bids. While there are a variety of ways that bids can be handled – sealed versus unsealed is one example – the common denominator is that the processes are competitive so long as submission criteria that meet the water system's specifications are met.

While it's not uncommon for unsuccessful bidders to complain about a process, the fact is, municipal bidding processes are competitive. From what I have seen, by-and-large, the process is set up to ensure that local governments make the best choices to fulfill the needs of their constituents.

With so many parts to completing an infrastructure project, perhaps the most important is trusting a project's engineers. The men and women who earned an education in engineering, spent thousands of hours in apprenticeships learning their trade and applying their knowledge, are the ones best suited to determine what materials are needed for a local utility's water system.

Unfortunately, however, there has been an effort over the last few years to pass material preference legislation at the federal and state levels of government with the goal of forcing local governments to base a project's material selections solely on the upfront cost. Supporters of this claim that it would make bid "more competitive" when in reality, it would do the exact opposite.

Imagine a scenario in which there are two companies bidding for a project to repair or upgrade parts of a drinking water system. Company A has more successful experience than Company B on similar projects within this water system. Due to their lack of experience, Company B decides to use a cheaper pipe material that does not meet all of the system's needs and specifications, leading their bid to come in at a lower initial cost. Due to material preference legislation, the municipality would be forced to allow Company B to engage in the proposal process – or risk a lawsuit – and put undue burden that could force the utility and its engineers to use the cheaper, unfit materials that represent a threat to the operations and safety of the water system and its consumers. As an engineer, I shudder at this. As a former state senator, it makes me angry that industries would try to pull one over on municipalities under the guise of competitiveness.

It is not true to say that all pipes are equal. There are significant differences among the various kinds. And elected officials should trust their engineers and utility professionals to help them make the right choice

based on all of the technical factors we know to consider. Some pipes are more vulnerable to cracking under pressure, so for water projects we have to consider how much stress a pipe can handle. Temperatures can make a difference, too. We have cold winters in Michigan and soil conditions can change when ground freezes and thaws. That means the pipes that have to go underground have to be able to withstand those changes, which can also cause soil to shift thereby creating new pressures against a pipe.

These are complicated issues. That's why elected and municipal officials have to be able to rely on their engineers for good advice. There is a trust and a responsibility that comes along with being a public sector engineer that means recommending the right materials for a job, not just the ones that will be less expensive in the short term.



Abe Munfakh, P.E., is the founder of Munfakh & Associates, LLC. He has been an active member of the Michigan Board of Professional Engineers, the American Society of Civil Engineers, the American Water Works Association, the Water Environmental Federation and the American Council of Engineering Companies.