

---

# MY PERSPECTIVE

---

## The Right Of Minnesota Engineers To Decide Pipe Material Could Be At Risk

By Jason Kruger, B. S. C. E.

Minnesota's city, county, state and consulting civil engineers are currently free to determine which type of culvert and storm sewer material is suitable for their projects. It's a civil engineer's professional right and duty to select concrete, plastic or metal pipe – possibly at the exclusion of the others -- based on sound engineering principles, judgement, their own experiences as civil engineers, and economics.

This right was further emphasized on July 6, 2012 when the FHWA's new MAP-21 highway reauthorization included the following:

“Section 1525 - STATE AUTONOMY FOR CULVERT PIPE SELECTION.” Not later than 180 days after the date of enactment of this Act, the Secretary shall modify section 635.411 of title 23, Code of Feral Regulations (as in effect on the date of enactment of this Act), to ensure 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.”

Additionally, on city and county state-aid projects, the Minnesota Department of Transportation allows city, county and consulting engineers to determine the most appropriate pipe material for their projects.

However, this right to engineering autonomy is being threatened around the U.S. at the state and local level, and the threat could reach Minnesota. Since early 2015, bills in over 10 states - and even a few counties - have been introduced at the behest of the plastic pipe industry. On the surface, these bills appear benign, oftentimes requiring that state and local governments must simply

allow the use of “acceptable piping material” on storm sewer and culvert projects. But how does one define “acceptable piping material?”

Pipe materials are simply not equal. Concrete, plastic and metal pipe each have their own unique structural characteristics and installation requirements, and these differences are considerable.

When civil engineers contemplate pipe suitability for culverts and storm sewers, they consider several engineering factors, including (but not necessarily limited to): soil loads, vehicle live loads, bedding factor, availability of engineered granular embedment material, extent of field inspection, local experience, and utility contractor reputation.

Civil engineers also consider economics: pipe material cost, granular backfill cost (varies with each pipe material type), expected pipe service life, local experience, and differences in contractor installation costs for concrete, plastic and metal pipe.

Although the Minnesota legislature has yet to deliberate the aforementioned, civil engineering professional organizations are clearly against the idea. For example, the American Council of Engineering Companies (ACEC), representing civil engineering consulting firms across Minnesota and the U.S., takes the position that consulting civil engineers should be allowed to determine which type of pipe material is the most appropriate for a given project, whether it be plastic, metal or concrete. To use an analogy, most folks can agree that a legislator should not determine which type of knee implant device an orthopedic surgeon must use – it should be the orthopedic surgeon's years of training and experience that ultimately determines the knee implant material. The same should hold true for civil engineers specifying storm sewer and culvert pipe materials.

**A legislator should not determine which type of knee implant device an orthopedic surgeon must use . . . The same should hold true for civil engineers specifying storm sewer and culvert pipe materials.**



# MY PERSPECTIVE

The American Water Works Association (AWWA) also steadfastly opposes this type of legislation. In a national memo to municipalities, the AWWA states:

“...The AWWA is neutral as to which materials utilities select for infrastructure projects. While AWWA believes that there is an application for all types of material, we also know that not all materials are equally suitable for all applications. We have members who feel very strongly (both positively and negatively) about the different pipe materials that are available. The AWWA Water Utility Council’s opposition to the legislation, however, is based on the negative effect that this effort

would have on the ability of utilities and design professionals to continue to best serve their communities by maintaining control over material selection...”

Civil engineers should be free to select the right pipe for the job. Public safety isn’t a political issue, it’s a social issue. The decisions necessary to preserve that safety should be left to licensed professional engineers already using sound engineering principles and personal knowledge gained through years of experience.

**(Jason Kruger is Technical Resource Director for the Minnesota Concrete Pipe Association.)**



Property, General Liability & Professional Liability Insurance for Architects and Engineers. Over 30 years of local experience to bring your firm secure business protection and specialized programs from a network of highly rated insurance carriers.



**Craig McNulty**

245 E. Roselawn Ave., Suite 31 | St. Paul, MN 55117  
Phone: 651-288-5131

[craig.mculty@hubinternational.com](mailto:craig.mculty@hubinternational.com)  
[www.hubinternational.com](http://www.hubinternational.com)

## Directory of Professional Services

Engineering. Consulting. Solutions.



**HoustonEngineering Inc.**

Water Resources | Survey | Municipal Environmental | Transportation | GIS Site Development | Web Applications

[houstoneng.com](http://houstoneng.com)

Materials Testing  
Construction Materials Engineering  
Product Testing  
Failure Analysis



**element™**  
Stork Twin City Testing is now Element. Visit us at [www.element.com](http://www.element.com)



**HRGreen**

**SERVING OUR COMMUNITIES FOR OVER 100 YEARS.**

Phone 651.644.4389 | [Learn more at HRGreen.com](http://Learn more at HRGreen.com)

TRANSPORTATION | WATER | GOVERNMENTAL SERVICES  
SENIOR LIVING | ENERGY | LAND DEVELOPMENT



**ERICKSON ENGINEERING**



**PROVIDING BRIDGE ENGINEERING SERVICES SINCE 1951**

- Bridge/Roadway Design
- Construction Inspection
- Bridge Inspection
- Project Development
- Hydraulics

**(800) 545-8020**   [www.erickson-eng.com](http://www.erickson-eng.com)

“2014 ENR Top 500 List”





**LHB**

**PERFORMANCE DRIVEN DESIGN.**  
[LHBcorp.com](http://LHBcorp.com)

Mechanical  
Structural  
Electrical  
Survey  
Civil

**The Right Solution for You**

**Minnesota Offices:**  
Albertville • Duluth • International Falls • Mankato  
Marshall • Rochester • Saint Paul

Environmental • Geotechnical Materials • Forensics



**AMERICAN ENGINEERING TESTING, INC.**

[www.amengtest.com](http://www.amengtest.com)  
**(800) 972-6364**