

---

## **TWI Report #8 – Take the Infrastructure Challenge**

By: Steve Willie

---

Can it be proven that the majority of failures in buried public infrastructure are caused by either day-one defects or subsequent damage? Can we show that the majority of damages and repair costs are from these two causes which have nothing to do with aging infrastructure?

Unfortunately, the majority of defects have never been categorized using the system of three causes identified in TWI Report #1. The information is simply not being collected and organized this way. Also, very few failures are ever investigated or evaluated by someone who understands both buried infrastructure and material science. Research to support this claim has not been done.

In lieu of research, we can test these claims using the public infrastructure under a given ownership if the management of the infrastructure agrees to share the data. This report asks utility managers to: “take the infrastructure challenge”.

### **The Infrastructure Challenge**

The infrastructure challenge goes like this: identify the ten (10) most expensive repairs of defects and failures for buried infrastructure in your system within the last year. After conducting a complete evaluation, you should find that at least five out of ten of the most expensive defects and repairs were not caused by age (as the most proximate cause). You should find that there were more proximate causes such as day-one defects or subsequent damages.

Then, for every defect or failure on your list of defects and failures in buried infrastructure, I will pay you 1\$ US Dollar for each defect caused by age if you pay me 1\$ US Dollar for each defect which was not caused by age. Public works officials: put your money where your mouth is.

### **Some Basic Rules**

We need some basic rules; here they are:

**Rule #1:** Since all buried public infrastructure must be designed to last at least 50-75 years (with exceptions in TWI Report #1) it must therefore be true that any failures in less than 50

years cannot possibly be blamed on old age. Obviously, something else went wrong.

**Rule #2:** Although it is possible that a defect or failure had multiple causes, the correct category for the defect or failure is the one which represents the most proximate cause.

Take the infrastructure challenge. We will find out whether you should be claiming that your infrastructure is failing from old age.



### **ABOUT THE AUTHOR**

Steve Willie is a Civil Engineer with over 30 years of experience designing, inspecting, and repairing public works infrastructure in the western USA, beginning at the City of Los Angeles Department of Transportation in 1987.

---

Email: [steve@waterinvestigator.com](mailto:steve@waterinvestigator.com)