

InfrastructureUSA

Guest on THE INFRA BLOG

Richard G. Luthy, Director of Engineering, Research Center for Re-Inventing Water Infrastructure
Conversation with Steve Anderson, Managing Director, InfrastructureUSA

Engineering Research Center

Our organization is a consortium of four universities out here in the West, plus three international partners, and a group of industrial partners, plus some pre-college partners and tribal colleges. What we do is research and education in the area of our urban water infrastructure. The entity is Engineering Research Center, newly funded by NSF, that's the National Science Foundation. It's initially funded for five years at \$18.5 million. If we do a good job in our reviews we will be going for another five years. So we can have a ten-year life in this activity.

Nearing the End: Water infra

Simply put our water infrastructure that we use in our cities and in the suburban areas was built some 50-100 years ago. So a simple statement is that it's at the end of its design life. And that's just a fact of life that the systems we have are getting near their end of their life, they're kind of wearing out. Another problem is that the systems we're talking about at best have mid-twentieth century technology, and one important aspect of that is systems were designed when energy considerations were not particularly important. What was more important back then were sort of first class or construction cost or cost to bring something online. Not cost to operate. So today we have not only a need to repair, replace, redesign these systems, but we see opportunities here to do something different going forward. Considering now energy needs and in the area where we are in the country, there are additional pressures of population increase and climate change, and also saving enough water and rivers and streams to support ecosystem services.

So that's the milieu in which we work. I guess it's all driven by the fact that water is essential for functioning society. Our systems are going to keep working one way or another. The question has to do more with, are we going to do small incremental things, or are we going to do more imaginative things going forward, so that we're more efficient both in how we allocate our resources and how we think about providing for the environment as well.

Water: Infra Misunderstood

I think the issues with water are probably different than say with bridges and highways. Because a motorist will see a closed bridge or can read about a collapsed bridge in Minnesota, or will experience a pothole on the highway. Well

people don't see the pipes and everything that's behind all of that. So I think in the water area it's a little more mysterious; they don't know quite how everything works. I'd have to say there's probably a misconception well somehow this thing keeps working. You know the federal gasoline tax that helps support the interstate highway system. There's probably a disconnect between what people see as a tax at the gas pump and not really realizing that the tax helps supports the highways on which they drive. In the case of water, while we are a little bit spoiled, a little bit ignorant, and privileged, I was thinking that somehow water should always be very inexpensive. In fact at one time it was, but today you realize, well it's not a big part of our average household expense, but we are going to have to pay more going forward. In part because there won't be public subsidies for the kind of things we're going to have to do going forward.

When I go before the public and show examples of how we get our water today and what the shortages are and how things look in the future; then they say, "Oh wow this is pretty important. Wow, we should be doing something about that." So a large part of this is public communication and understanding. I think with greater understanding, in our case about the water systems, folks can understand the reason we have to pay a little bit more for our water going forward and why things in the future are not going to be quite the same as they were in the past.

Water Alert?

The situation in the West, where we are, is that areas that are water short are going to be more water short in the future. Does that mean it's going to happen suddenly; there's going to be a big drop next year? No. Will there be a decline over a few decades? The answer is yes. That's what all the climate models say. So there's something coming but I think to use the example of a failed infrastructure in the water area, it often takes a drought.

Once you're in a drought and you get into your third year, you start thinking about rationing. And you have these competing needs of water for ecosystems, water for agriculture, and water for cities, and there isn't enough to go around. We have to make choices so that we don't shortchange anyone. That's when politicians seem to come together and say ok, we actually have to work here on this and help solve the problem.

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