

In Buffalo News, 11/10/13

America's crumbling infrastructure: Two terrible truths don't bode well for our communities



Mary Jane Lauck, an employee of HSBC, checks a plant in the rain garden in front of the HSBC Tower during an end-of-summer cookout Sept. 24, 2009, to celebrate the garden, which minimizes the volume of storm water reaching Buffalo's sewer system by absorbing much of the water. Photo taken by Sharon Cantillon

By Scott Huler

Fredericksburg Free Lance-Star

I write a lot about infrastructure – about sewers, water pipes, electrical wires and so forth. So people ask questions. They worry about fossil fuels. They worry about highway collapses and budget problems. Yet I find explaining the future easy. The smart grid, rendering unpredictable renewable energy sources trustworthy? Cured-in-place sewer pipes, revitalizing sewer pipes long past their prime? Reverse-osmosis water plants that will remove the growing scourge of pharmaceuticals from our water stream?

*Then
walk*

Sure. We can have all that – all of it! We face very few technical challenges to a shiny new infrastructure reality. But I tell people this: Unless we make major changes, our future will look pretty much like it does now, and our infrastructure will continue falling on our heads.

Remember the '60s bumper sticker, "It'll be a great day when every school has all the money it needs and the Navy has to hold a bake sale to build a battleship"? Well, here's me, in 2013, showing that nothing much changes. We still seem to be doing pretty well in the enormous weaponry department, but I'm currently doing the bake-sale equivalent of visiting community council meetings, urging citizens to support a bond issue that will enable my city to maintain its streets.

As a writer about infrastructure and technology, I represented a prime target for the committee that formed to support the \$75 million in bonds my city – Raleigh, N.C. – is floating to do what I would call the usual: build sidewalks and bike lanes, put up transit shelters, widen streets, improve streetscapes. Raleigh is a tremendously healthy city; it has a AAA bond rating and sits in a county that has a AAA bond rating, an almost unparalleled bonanza of creditworthiness. Business and citizens flock here. So we'll probably float our bonds, build our median strips and widen our connector roads, and go on about our business.

But I'm still a little astonished that people need convincing to do this kind of stuff. And I know they do because when I wrote a book about infrastructure a couple years ago, I learned two terrible truths about the systems that keep our culture functioning.

Truth one is that everything we have is falling apart. Truth two is that nobody wants to spend a nickel to fix it.

And mind you I'm a writer and I choose my words with care. I could easily have said, "almost everything we have is falling apart" or "lots of things" are. But I said everything, and I meant it. Start with truth one, that our infrastructure – the stuff that makes our preposterously easy American lives possible – is falling apart. I suggest you begin examining this truth by looking at the report card the American Society of Civil Engineers gives our infrastructure every four years. One came out this very year, and we got a D-plus overall. Worse, that's the good news! The D-plus actually represents an improvement over 2009, when our overall grade was a flat D.

The big winner was solid waste, which got a B-minus, which means basically that we're beginning to recycle better than we used to. Water? Wastewater? Both D. Much of the country is facing issues like the one Toledo, Ohio, faced in July when a sinkhole yawned open in the middle of the street and ate a car – with a woman inside it, though the woman was fine. The water wasn't, and residents had to boil it for a while.

The sinkhole came as a result of the collapse of two old sewer pipes, even the newer of which was almost a century old. Similar sinkholes have bedeviled Toledo for decades, for the same reason. The Toledo Blade quoted Toledo Department of Public Utilities Field Commissioner Don Moline cutting right to the chase: "A lot of the system is the old brick sewers, and the brick sewers are reaching to the end of their useful life." People in every city older than a few decades know a similar story in their own town, whether it's pipes breaking in Boston or bridges failing in Minneapolis. That's everywhere. Stuff we've built is coming down. And now we face the tough challenge of repairing, rebuilding and rethinking it.

So how did we get here? We've been building sewers, water systems, roads, bridges, railroads and airports for hundreds of years. Why are they suddenly all falling apart? What's gone wrong?

What's gone wrong is we've stopped fixing them. I like to use sewers as an example. In 1972, Congress passed the Clean Water Act, which not only has pretty much saved our waterways but included significant federal funding for building the stuff that cleans wastewater. In fact, if you wanted a new sewer plant, at that point the feds would pay up to 75 percent of its cost. Not coincidentally, the top marginal tax rate in 1972 was 70 percent. By 1987, when Congress passed the Water Quality Act, what the feds had to offer was a revolving loan program. The top marginal tax rate that year was 38.5 percent. So taxes for top taxpayers had gone down considerably – and the federal government had gone from building three-quarters of qualifying infrastructure to only lending money to some projects. In 1988, the marginal tax rate dropped to 28 percent.

That's truth two. How we got here is that we stopped paying taxes.

The good news is smart people are thinking of amazing ways to fix old and broken things – that cured-in-place piping I mentioned is like taking a giant inside-out sock impregnated with resin, unrolling it within a failing pipe, and then curing it with steam. Instant replacement, with virtually no digging and significantly less cost. Various smart-grid solutions will enable us not only to use power more sensibly but to safely depend on intermittent renewable sources like sunlight and wind. Greater awareness of the stormwater cycle has led to insights like those of the Philadelphia Water Department's Philly Watersheds program, which instead of spending billions on underground cisterns for stormwater storage during storms – and on pumps to remove it afterward – will spend the same money on retention ponds, green roofs, rain gardens and other tools that will do the same job but also yield ponds, greenways, bike paths and other benefits.

I'd love to tell you the only thing that's keeping us all from having that kind of infrastructure genius is technical complexity, but that's a lie. A smart traffic engineer I know tells me he never loses track of two elements when he faces infrastructure issues. Not asphalt and concrete, not pedestrians and cars, not transit and buses, not fiber optics and Wi-Fi. His two magical constructs? Money and political will.

A future of infrastructure that works is within our grasp. We just have to pay for it.

Scott Huler is author of "On the Grid; A Plot of Land, an Average Neighborhood, and the Systems that Make our World Work."