

Alex Wells

Earth 111

Dr. Guertin

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Penn State H₂O Report: Aging Water Systems

Alex: Water. We drink it every single day, yet most of us don't stop and think about how it gets to us. Water is an unbelievably important resource in all of our lives. Just take a look at California right now, and it's easy to see how water, or a lack thereof, affects us. Which is why it is so surprising to learn that our water delivery systems are in serious trouble... and not much is being done about it. This is Alex Wells with the Penn State H₂O Report.

News channel music

Alex: Good evening ladies and gentleman and welcome. Today we're going to be talking about infrastructure, how your water gets to your home and the problems that those systems face today. Joining me is Doctor Marshall Stevens, an acclaimed hydrologist with over 15 years studying water.

Dr. Stevens: Thank you for having me.

Alex: Of course, thank you for being here. So, Dr. Stevens, what can you tell me about our water delivery systems today?

Dr. Stevens: Well, we're facing a lot of challenges in our water delivery systems. All of this infrastructure, the pipes, the aqueducts, and even our water purification stations are in bad shape, and that's causing us a lot of issues. It's costing us a lot of money, and in some cases can even impact people's health.¹

Alex: What kind of health impacts are we talking about here, Doctor?

Dr. Stevens: Well, The University of Sheffield over in the UK performed a study that examined the structural integrity of pipes, and the things that end up in the water supply.¹

Alex: Oh, really? What did they find?

Dr. Stevens: The results showed that when the pressure in the pipes drops, outside material can actually be sucked into them. So you've got these pipes delivering your water to you, but then they pick up some other stuff on the way and that ends up in your drink. People can end up feeling sick from this, but you would never think it was from your water.¹

Alex: Oh, that's not good. So how did they test something like that?

Dr. Stevens: Well, what they did was they built a facility just for the purpose of testing this idea. So they had these pipes, and they put a box around one after purposely damaging it.

Alex: Okay.

Dr. Stevens: And then they put some gravel and dye in there with the pipe. So they've got all this stuff around the pipe, and then they lowered the water pressure. They then retrieved the water that ended up at its destination, and there you go. There was dye in the water.

Alex: So, what kind of stuff can actually end up in the pipes when this happens?

Dr. Stevens: The pipes can end up sucking in all kinds of nasty stuff. Bacteria, diseases, fecal matter, chemicals, you name it. It's really quite disgusting if you think about it.¹

Alex: Well, there you go folks. If you've ever had an uneasy stomach that you couldn't explain, maybe you got a little something extra in your water. So, what else is there to know doctor?

Dr. Stevens: Well, there's the fact that even without contaminants entering our water, our infrastructure is still in a lot of trouble. The US loses 7 billion gallons of water every day due to old, leaky water systems. This overall ends up costing us a very great deal of money.²

Alex: Why is it that our infrastructure is in such bad shape?

Dr. Stevens: Well there are two big reasons there. For one, it's a very old system. Just a few years ago, a water main that was over a hundred years old burst in Philadelphia. Now, that whole system isn't quite that old. Most of the pipes are *only* an average of 78 years old.³

Alex: Oh, right. Only 78 years old. No big deal.

Dr. Stevens: Ha, yes. You can see how that could be a problem, and this is something we're seeing all over the country.

Alex: Absolutely. So why don't these systems get replaced?

Dr. Stevens: Well, that's the other problem. It is incredibly expensive to do the kind of massive overhaul you need for this kind of thing. Big cities don't want to drop that kind of money, and smaller towns simply can't. It's also not something immediately obvious to a lot of people. You can see when a road is in rough shape, you'll feel it when you're driving over it, or when your power grid is having problems. You can't see when your water system is crumbling, and so it tends to go unnoticed, and it ends up on the back burner, so to speak.³

Alex: So what you're saying is there is just no chance that these systems will get replaced?

Dr. Stevens: Not exactly. There are a few ideas being tossed around. Some are saying PVC piping could be the answer to our worries. They're a lot cheaper than metal piping, so it would

cut down heavily on costs. They also don't corrode, so they wouldn't require as much maintenance.⁴

Alex: Well, hopefully we can look forward to seeing some kind of fix in the future. I for one don't want our water system to continue breaking down with no solutions.

Dr. Stevens: I hope so too.

Alex: Well we seem to be out of time for this week. Dr. Stevens, it was a pleasure. Thank you so much for coming to the show.

Dr. Stevens: Thank you again for having me.

Alex: This has been Alex Wells with the Penn State H₂O Report. Tune in next week for our next topic: "Watersheds: Where does your water go when you're done with it?" See you then.

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Works Cited

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