Bill Shuster is a research hydrologist with the USEPA, based in Cincinnati, OH. He recently overheard his daughter explaining his work to her friend. She said, “My dad plays with mud and watches water go into the ground,” according to Shuster, who adds, “This pretty much sums up my work as a research hydrologist.” This day-in-the-life interview looks at Shuster’s work life working with urban soils, soil surveys, and using his daily work to interact with the public about soil science.

Soil Horizons: Why did you choose soil science as a career?

Shuster: I had always been interested in agriculture, but as a city kid, there were not many opportunities to practice or learn about agriculture. After completing my bachelor’s (physics, University of Michigan), I applied to a farm apprentice program in Maine (the Maine Organic Farmers and Gardeners Association, still going strong) and worked on a family farm for a few months. I had contacted the USDA National Agricultural Library about careers in soil science. Later that year, I visited a friend in Columbus, OH and happened to go to a job fair at Ohio State University. I was hired on the spot as a technician to run the soil physics laboratory. I looked at this as a way to get into the field, gain practical experience, and it was a pretty good job. After that, I ran a farm for Ohio State, so I have had a lot of experience in agriculture. I miss it. (Shuster later completed his Ph.D. studies at Ohio State.)

Soil Horizons: What is your specific area of expertise?

Shuster: I conduct research in an understudied area of soil science: how water cycles through urban ecosystems. Soils are a piece of the puzzle. We know very little about urban soils, which were not explicitly mapped in past soil survey efforts, but are learning more through these intentional field assessment and research efforts.

Soil Horizons: How did you start your research in cities like Detroit and Cleveland?

Shuster: I worked with regional technical staff to help solve an enforcement case that fell under the Clean Water Act. In Cleveland, and more than 700 other U.S. cities, urban and suburban areas feed a lot of stormwater volume into combined and separated sewer systems, causing them to malfunction. I noted that there was plenty of vacant land mass that might be able to absorb some of this massive volume of stormwater. To use these vacant lots, I knew that we would have to get out, make measurements, and identify the soils that were actually there. My team started out in Cleveland, and we are now systematically looking at cities that represent each of the major soil orders in different cities around the U.S. We use our data to look into whether soils and landscapes are suitable for green infrastructure.

With Detroit, we knew that data like this would aid in the current effort to understand the demolition process. The data can help the city expedite demolitions in a greener way, and contribute to

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