Abstract:

In this interview, Owen Randall discusses the intersection of the Fort Collins stormwater utility and his career. Randall begins by outlining the immediate changes made to the stormwater utility that took place in the wake of the devastating Spring Creek flood of 1997 and how such changes (among other things) led to him personally becoming involved with stormwater planning. After the flood of 1997, Fort Collins Utilities revamped how it funded capital stormwater projects, which in turn made large project on Howes Street, Locust Street, Oak Street, and the Canal Importation Ponds and Outfall (CIPO) project feasible. While flooding remains an ever-present threat, Randall explains that construction projects designed to mitigate flood danger remain difficult to justify to the public as a worth-while investment. Many flood mitigation projects were designed to fulfill multiple purposes, such as Red Fox Meadows, which functions as a detention pond and a recreation area. Randall also discusses the inherent challenges and dangers that come with retrofitting flood-mitigation systems and provides a brief description of how Utilities commits to such projects in a safe and cost-effective manner. Beyond construction, Randall outlines Utilities’ efforts to inform the public on flood danger through social media and meet-and-greets. Randall concludes the interview by pointing out that although Fort Collins has proactively sought to mitigate the impacts of the next major flood, the area north of Prospect road is far from flood-proof and that a storm comparable to that of 1997 could spell disaster for northern Fort Collins.

Interview

Q: This is Ruth Alexander. I’m here with Owen Randall for another interview about water utilities and Owen’s long career working for the Utilities in Fort Collins. Today we’re at Red Fox Meadows Detention Area in Fort Collins, and we’re going to be focusing on the history of stormwater projects in Fort Collins since the 1997 flood, and I’m going to begin, as I’ve begun some other interviews, with a little bit of an overview. It was not until the ’97 flood, also referred to as the Spring Creek flood, though that’s something of a misnomer, that Owen began working on stormwater projects. The flood was the most devastating and costly disaster in Fort Collins’ history. Five people died in that flood and damage to property and the natural
environment in the city was valued at about $200 million. The flood prompted major new investments in stormwater projects to alleviate flooding in downtown Fort Collins. It prompted the city to develop its first stormwater masterplan in 2004 and to update that plan in 2012.

The stormwater utility had stormwater masterplans back in the early ‘90s, but they were done on a basin-to-basin basis. The 2004 and 2012 stormwater masterplans committed the city to safeguarding the public by reducing the risk of flooding and developing a flood-warning system. The masterplans also sought to protect the quality of the receiving streams from stormwater by reducing water pollution through passive treatment and we’ll be talking about passive treatment and what that means a little bit later. The city removed structures and prohibited new construction and floodplains in near waterways since people living and working in structures in floodplains were at risk. And then, finally, the 2012 stormwater masterplan adopted an overall watershed approach, recognizing that the protection and rehabilitation of urban waterways and ecosystems was essential to flood prevention, to environmental damage, and harm to humans and their property.

So it’s clear that the city has made significant changes to stormwater management. Those changes have proved of enormous value. In September of 2013, Fort Collins experienced a 25- to 50-year flood of the Poudre River during a sudden and very heavy rainstorm. There was minimal damage to Fort Collins and its riparian environment and no loss of life, though in other places where the flood also happened, it was a 17-county-wide event, there was quite severe damage, so Fort Collins did better than other places, in part, because it had systems in place.

It doesn’t mean, of course, that putting these systems in place was ever easy, and so we’re going to talk to Owen about the benefits, the challenges, the complexities of putting the stormwater system in place that really follows a masterplan. And that leads me to my very first
question. Owen, by the time of this ’97 flood, you’d been working with Utilities for almost 20 years, though you hadn’t been directly involved in stormwater projects during that time. What was your understanding of the city’s approach to stormwater management?

RANDALL: A lot of the stormwater that was done pre-’97, Fort Collins was pretty innovative in that they were one of the early stormwater utilities, I think even in the country, certainly in the state, and so it’s an enterprise fund just like the water and wastewater utilities are, and the way that it was set up was on a basin-by-basin basis across the city.

The funds, the fees that were collected were to be spent in the basin that they were collected in, and, in my opinion, it tied the hands of the people working in stormwater, because there wasn’t enough money in any basin to do any, I’ll call it, even significant work, because it was just too expensive on a basin-by-basin basis, and the thought was that if you lived in a basin, you paid the fees, and that’s where the money should be used.

So after the ’97 flood, they reevaluated that philosophy and changed the method of being able to spend the money, and it was citywide now instead of basin-by-basin. For the first time, there was actually enough money when you pooled all the money from all the basins together to start to do what I’d call significant stormwater projects. The philosophy on a stormwater sense didn’t change. It was the ability to fund the projects that changed. Maybe to step beyond that from ’97 was that there was also a willingness to sell bonds to have enough money, once again, to do large-scale projects that we’re going to talk about here in a minute, I believe.

Q: We are going to talk about them. After the flood, you did get involved in stormwater projects, and you were involved in a number of quite large ones. Can you describe the scope of some of those projects and the challenges that you faced in getting them done, and perhaps we
can start with the projects in downtown Fort Collins? As I understand it, I think they were on Howes Street, Locust Street, and Oak.

RANDALL: Exactly. Let me back up one step more to kind of put more of this into context.

There were the three water utilities, the water utility, the sewer utility, and the stormwater utility, and what happened after ’97 was that they put them all under the same umbrella, so we were all together, and as the chief engineer, the capital projects of all three utilities now fell under my purview and the project managers that work for me, so that’s what happened. That’s what changed, and that’s why my group started to get involved in doing capital projects for stormwater also.

So then after ’97, the directive from our Water Board, and certainly city council, was to solve the problems, and originally the original thought was somewhere between ten and 20 years we were supposed to build everything in the city to protect everybody, and it was fresh in everybody’s minds. It wasn’t hard for anybody to doubt that people got flooded and things happened that were not positive, and people died, all the things that you mentioned, and so we were given that mandate to get started and do it fast.

People are amazing how quickly they forget, and literally within ten years, there were people questioning why we were doing this, why we were spending the money, why we were wasting all this money. It doesn’t rain in Fort Collins, and it doesn’t flood in Fort Collins, etc. It’s not even been ten years since people were dying and $200 million worth of damage, so things change. People forget really, really quickly, and stormwater is really unique in that the water and wastewater utilities, everybody wants to have water come out of their faucet every
day, and everybody wants their toilet to flush, but today, sunshine and bright; nobody needs stormwater today, and they don’t want any, and they don’t want to pay for it.

It’s a unique animal compared to the other two. When you need it, you need it really, really bad, and when you don’t need it, then nobody wants to pay for it. So now to answer your question, another context to answer your question about downtown. A lot of Fort Collins was built before there was either an understanding or recognition of the dangers of building where water runs, in floodplains, along creeks, a lot of places that people find attractive and they wanted to build there, or people came in and just—it doesn’t rain very often, just like I said, and so when there’s just a trickle running down Spring Creek, there’s no danger around building your house next to it.

There was a lot of development built in the central part of Fort Collins, the old parts of Fort Collins, without any recognition. We’re talking 100+ years ago without any recognition of stormwater, and then also as more development happened and it spread outside Old Town, once again, the more impervious surface you have, the more runoff there is, and the water still knows where downhill is, and it ran where it always ran, and there was development built in the areas where they got flooded.

Everybody knew after ’97 and from the modeling, from all the work that the storm utility had already done that there were significant issues in the old part of town and huge risk when a major flood would happen, and, therefore, we prioritized projects, and the three that you listed, the Howes Street outfall was the first major capital project that we did, relatively small compared to the other two, but basically it drained from Laporte and Mason area north to the Poudre River, a large box structure that we built, and took a number of the structures right in that
area out of the floodplain, as well as before we built it, that water kept on going into Old Town, the formal Old Town area, and caused a lot of damage.

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So we intercepted that water and took it to the Poudre River. The next major one that came right after that was the Locust Street outfall, and that was built, I guess I’d say, in conjunction with Colorado State University and the damage that happened on campus in the ’97 flood. We don’t do stormwater on campus, but the water from Fort Collins flows into campus across Elizabeth, and it flows off of campus across College, and so they did a lot of work on the CSU campus to protect their buildings and conveyance facilities and one thing and another.

So we built the Locust Street outfall. I think we built about 8,000 feet, 8,500 feet of 102-inch diameter pipe down to 60-inch pipe, so basically it outfalls into the river just south of Mulberry; just 100 yards is where the outfall is, and then winds through the neighborhood, and it comes out at College Avenue right across from the South College Avenue gym. We actually tied our system. We put it across College to the west side, and CSU literally tied onto our pipe, at that point. So that was the first really big major outfall that we did. Then the third one was the Oak Street outfall, and that was in downtown Fort Collins.

Let me back up to Locust Street just a minute. That one was unique in that a lot of stormwater projects, people are not happy to see us come, because they don’t think there’s a problem, but that was not the case on Locust Street. These people got flooded every time; three people spit in the street, they got flooded. It was unbelievable how much damage there was, just on almost everyday events, small storms, how they would get flooded.

So these people, they were thrilled. They were happy. They’d been flooded so many times they couldn’t count it all, and the construction crews, literally they’d bring us cookies and
coffee, and they were just happy as they could be that we were there to do it. Then when we got that project done, we immediately went north to Oak Street, and that project was driven, a lot of it, frankly, by the building at the northeast corner. It used to Beau Jo’s Pizza, the northeast corner of College and Mountain.

Q: Yes.

RANDALL: The front door, literally, once again, every time it rained at all, water went in the front door of Beau Jo’s Pizza. There was a lot of political pressure to do something about it, and so when we were given that project to do, another project manager who I signed that job to, Jay Rose, he and I sat down at the very start of the project and talked about it, because it was a conceptual idea to build a storm sewer from the river up Mountain Avenue and put an inlet in front of the door of Beau Jo’s Pizza, and it was going to cost $5 million.

Jay and I talked about it and said, “This just doesn’t feel right. This doesn’t make sense,” and it was only to provide a ten-year level of protection from a ten-year storm, and so we went to work and put together a team of engineers and contractors to work on it, and eventually, for about $2 million more, we took—I don’t remember the number anymore—120, 140 structures in Old Town out of the 100-year floodplain, and the actual problem wasn’t at Mountain and College. That wasn’t the problem. The problem was the water coming way from the west, all the way from the foothills, coming down there. We built all we could build to protect that area of Old Town.

Q: What did you actually put in place to protect it?

RANDALL: We put, if I remember, about 6,000 feet of large-diameter pipe. I think it went from 96-inch down to 54-inch maybe. I can’t tell you exactly. I’ve kind of forgotten.

Q: And the pipe goes from east to west?
RANDALL: Yes.

Q: East to west.

RANDALL: We built it from the east to the west. The water flows west to east and daylight’s in the Poudre River, so there are a number of really unique things in that project. One is that we’re going to talk about water treatment in a minute, and so that was the first opportunity to do a large-scale treatment of stormwater. Down in an old area, there’d been a concrete pipe factory, what is now called the Udall Natural Area. That was an old pipe factory. There was all kinds of junk and trash down in there, and we reshaped all that into three distinct ponds that the water runs through, and then we built a fourth small concrete line structure with a huge trash rack, because out of Old Town and all the hundreds of old little, tiny inlets, there’s an unbelievable amount of trash comes off the streets.

Garbage trash comes off the streets in every storm, and so that’s what we used to collect all that garbage and trash so it didn’t go in the river, as well as then the passive water treatment. It runs through the series of two ponds that we clean out on a regular basis, the sediment that comes off the streets, the oils, the greases and sands, all that.

We can clean those two ponds out. Then it flows into a third pond, which is what we call a natural area that is designed to not ever to be touched, and it’s much like where we’re sitting here today.

Q: What’s the name of that project?

RANDALL: That was the Oak Street outfall. It was the water treatment portion of the Oak Street outfall. That project, another unique portion of it was we built a tunnel on the Oak Street alignment where Oak Street Plaza is in downtown Fort Collins. We built a tunnel from the east side of College, about 600 feet to the west side of the railroad tracks in the west side of
Mason Street. We put a tunnel underground all that way, which is 84-inch pipe underneath there under College Avenue, under the Oak Street Plaza, under the railroad tracks for a variety of reasons.

The traffic on College, Oak Street Plaza obviously, we would have literally destroyed every bit of it if we had tried to open-cut it through there, and then the railroad tracks that we have to require by the railroad to not affect the train traffic, so we had to put a bore [ph] there too. We tunneled that whole reach.

Q: Really interesting. Well, let’s shift and talk a little bit more about areas like this and about the larger CIPO project. So can you tell us what CIPO is, how it got started, and where we are sitting fits into that larger project?

RANDALL: I’ll try, and if it’s not clear, ask me. So CIPO stands for Canal Importation Ponds and Outfall. Canal importation is in one of the basins that is in Fort Collins, and the canal importation, that name comes from the fact that there are a number of irrigation canals in Fort Collins, and they generally run north to south.

They were irrigation canals. They were designed to take water off the Poudre River and take it to what were farms years and years ago. Kind of by default, they became stormwater conveyance, although in later years the city and the ditch companies didn’t allow that, but by default, when the water runs—canals are going north-south, water’s running east-west in general, and when it gets to the canal, the water goes in it and it goes downstream. It goes downstream, keeps building up and building up until eventually there’s more water than the canals can carry and they spill, and when they spill, that concentrates all that flow in areas that frequently flood people’s dwellings or buildings.
The CIPO project, we’re sitting in Red Fox Meadows, that is basically at the southeast corner of Taft Hill and Prospect Road, and so these ponds, a series of ponds here, both on the east and west side of Taft Hill Road, collect and detain water that’s coming from the southwest out of that subdivision, and then right behind us the concrete structure is the outfall for a large-diameter pipe, 108-inch in diameter, that runs north from here, basically up Castle Rock to Elizabeth, jogs west a couple of blocks, and then north, and then west to another detention pond that is across the street from the Baptist church there on Taft Hill Road.

The reason we went up there with that big pipe was that’s the water that principally is going to CSU’s campus, part of the water that caused the flood in ’97 on campus, and then all the way across onto Locust Street, so we’re biting off pieces at a time that reduces the flow onto campus, reduces the flow off of campus into the Locust Street outfall.

That large-diameter pipe that runs up to Elizabeth and on to Taft Hill, and eventually it’ll go further west yet, that takes a lot of the water coming down that basin, brings it down here into these big ponds, and we detain it, we treat it and release it at a rate into Spring Creek that won’t cause flooding downstream. The whole stormwater system and the flow paths is very complicated to put together what the flows are or when they get there, how much you’ve got to take out of one and put it in another so that you don’t cause other flooding downstream.

Q: So presumably you’ve got a team of engineers who are working on that.

RANDALL: Yes, and that’s part of the masterplans that you referred to a while ago, that the masterplans look at a high-level view of these, and there’s hydraulic models developed and built to model the storm flows. Another huge issue in what goes into those models is what level of protection are we trying to achieve? The direction from city council ever since ’97 is, where
possible, to build 100-year protection. So we try and take everyone out of the 100-year
floodplain that we possibly can.

    Everyone, it’s important to realize that everything we’re doing is retrofit work. We’re
not talking about new areas of town, new developments, whether it’s residential or commercial.
The southern part of Fort Collins doesn’t have these flooding issues at all, because as they’re
built, they’re built with stormwater regulations in place. What we’re doing is going back to old
parts of town where it was never built and trying to retrofit as best we can. There are structures
that we simply either literally cannot take them out of the floodplain or the cost is so great that
it’s not economically feasible.

    The benefit cost ratio is less than 1, but in general that’s our goal is 100-year flood
protection, and then to go along with that, as far as water quality goes, our goal is to be able to
treat all the water that comes off in a two-year storm, treat it. That’s where the real pollution
comes from with the low storms. The big storms, it flushes everything through, but the low, the
small storms, the summer thunderstorms, we want to treat that water.
Q: Can you describe the kind of treatment that goes on and how it differs from
wastewater treatment?
RANDALL: From wastewater, we don’t have mechanical systems, at least at this stage,
and that may be coming someday with federal regulations, but at this stage of the game, our
treatments are passive systems based on detention. We shave off low flows and take them into
smaller basins inside our detention areas frequently that are planted with native vegetation.
There’s different systems to be able to screen out trash and heavy pollutants, big stuff, but a lot
of it, it’s dependent upon the native vegetation to take out the heavy pollutants before it gets into
the waterway, whether it’s the river or Spring Creek or whatever.
Q: It seems to me that another important element here is that in putting CIPO into place, creating a better system of outflow, creating passive treatment processes, you have also, in many instances, enhanced recreational areas. Can you talk about that?

RANDALL: Yeah. Certainly most, I don’t know if I can say all, but certainly most of our detention areas are what you might call dual-use or something. Red Fox Meadows is known as a natural area, although this ground has been dug up and modified so many times that the dirt’s wore out, but today sitting here, nobody would know that. We have worked close with the natural area folks to develop trail systems and the type of plantings that go into it that provide wildlife habitat, help the whole ecosystem, and certainly these small areas, and some aren’t so small like here, but small areas all through the city—

Q: They are functioning in multiple ways.

RANDALL: They’re functioning in multiple ways, and they’re part of what make Fort Collins what it is. The people enjoy being able to ride their bike down the street or walk out their back door and go for a hike through what appears to be a pretty natural area. We go to a lot of expense and a lot of work to maintain big old trees where we can and the plantings that we put in, ones that’ll thrive here and provide wildlife habitat for the birds and animals, all the insects, everything that we possibly can. We put them back as we restore the detention basins after we build them.

Q: We’ve talked about the public and Utilities’ interaction with the public in every interview that we’ve done, and I’d like to talk about the public a bit more explicitly now with regard to these stormwater projects. Can you talk a little bit more about the challenges that Utilities has faced in doing stormwater projects and keeping the public happy, keeping the public
informed? Has it been harder to do the projects that are multiuse or easier to do the projects that are multiuse?

RANDALL: That’s a huge question that we could talk about for probably days.

Q: Bite off any part of it.

RANDALL: Stormwater projects are uniquely challenging. I mentioned a while ago that a lot of people don’t recognize there’s a problem. Either they don’t recognize it or maybe it’s the same thing, they don’t believe it. I’ve heard 100 times, I’ve lived here 50 years, and it’s never flooded once, or I’ve lived here my whole life, and I’ve never seen water get that high, all those kinds of things. They may be completely right. There’s no guarantee.

One 100-year storm doesn’t mean once every 100 years it is going to happen. That’s a misconception. So we had one, so we don’t need to worry about it for 100 years. No, that’s not true either. That’s not out standard. City council set the standard of 100-year flood protection, so our goal is to carry it out as best we can, so we model the storms. We know what the flows are. We know where the floodplains are at, so we do what we can to reduce those floodplains.

Another huge part of stormwater is public safety. West Elizabeth, just west of campus, in ’97 the water was four-feet deep flowing down West Elizabeth. There were people kayaking and rafting down West Elizabeth. That sounds kind of fun, but velocity of water is deadly, washes anything away. In my opinion, the miracle of ’97 is that only five people died. You could have multiplied it times ten, like that. I think it’s a miracle there were only five people died, so human life, human safety, the roads that we can get emergency vehicles through, that’s one of our criteria that in a 100-year event that ambulance and fire and rescue can get through the major thoroughfares of Fort Collins, one of our criteria.
So in general we have strong support from the emergency-response community. They understand. The public is different. It’s a long-term educational challenge that we have of getting people to understand the significance of the danger of flooding. There’s still lots and lots of problems in Old Town, huge amounts of money that need to be spent there, and last May we had a storm. I can’t tell you for sure whatever it was, 20- to 40-year storm, along with hail, so it clogged a lot of inlets, and we had people stranded, cars that were sitting in two, three feet of water.

It will happen again. I guarantee it will happen again. You can’t solve stormwater problems when the forecast is for lots of rain this afternoon. That’s not when you build it. You have to build it ahead of time not knowing when it will take place. On every project, there’s a different level of challenge to convince the public and show the public what the dangers are, what the risks are. It’s all about risk. The very bottom line, it’s about risk, so we have our public communication people; they spend a lot of time. They do a lot of publications. They have all kinds of public interface to try and educate and show people what the problems are.

They go that all the time, as well as when we get to a specific project. We make a concentrated effort to reach out to the public and explain the problem, the challenge, situation and get their input and figure out how to best solve the problem.

Q: I know the education folks do most of the interaction with the public. Have you as chief engineer interacted with the public directly on some of these stormwater projects? Can you give some examples?

RANDALL: Yeah. I have, and my project managers in particular. That’s a huge part of managing the project is having face-to-face interaction with the public, the people that we’re going to impact directly, and so that’s everything from sitting in their living room literally, or at
the kitchen table, explaining exactly what the challenges, what the problem is, how it’s going to affect them, helping them understand that to public open houses.

We do an open house at a school or something like that, or when we have projects literally underway, block-by-block have a meeting at 5:00 in the afternoon after we’re shut down, people can come out and see what we’re doing and talk to us face-to-face, talk to the engineers, the contractors, everybody at the same time. We do all kinds of ways to reach out to the directly-affected people, also in talking to everybody from the Chamber of Commerce to city council. We talk to anybody and everybody that we can get to listen to us.

Q: Just a few moments ago, you talked about some stormwater problems that are still unresolved. Can you talk about those some more? Can you identify and give us a little bit more detail about stormwater problems that the city’s facing that it has yet to tackle fully or has yet to figure out?

RANDALL: In the Old Town Basin, I’d say west of College Avenue, south of the Poudre River, and north of, let’s just say, Prospect in general, that area, there’s still huge flooding issues that exist, and if a 100-year storm happened this afternoon in west-central Fort Collins, there would be hundreds of millions of dollars’ worth of damage to properties.

There would be people out of business for days or weeks or months. In my opinion, more than likely there would be loss of life. Old Town as we know it probably wouldn’t exist. It would be an enormous economic impact to Fort Collins, and so there’s four major outfalls that we’re talking about in the Old Town Basin, the biggest one we call the Magnolia Street outfall. We’re in very early stages of conceptual design, but we’re talking pipe in the neighborhood of 120 to 132 inches in diameter to run all the way from the Udall area; again, that’s where we would take the water to treat, run it all the way to basically Prospect and Shield Street, that area,
collecting water all the way up through there, and then there’s a possible extension of the Oak
Street outfall further west, and then a couple of more north of that. There’s a lot of money, a lot
of work to be done in that area, and it will have huge impacts to Fort Collins when we build
those things.

Q: Do you think there’s the will to get it done? Is there the funding to get it done?

RANDALL: The funding will have to come from selling bonds. There’s no way that the
monthly fees will pay that kind of money, so it’d be selling bonds and paying them back over
time, which is a way we did a lot of those big stormwater projects back in the 2000s, and so it’s
not unusual. It’s a common way of doing it. Your question about is there a will, I think that
remains to be seen. Literally, we’ve been to our Water Board right now a couple, three times to
talk about it. We’re talking about it in the city manager’s office on down right now. We’re
working on it, trying to come up with what the appropriate plan ought to be.

One of the things that continues to come up over and over again is lawyer-level
protection. Don’t built it for a 100-year storm. It won’t cost as much. Frankly, we’ve been
through this three times now. I’m going to retire in a couple of weeks, so I can say this. You
don’t need to waste your time evaluating 50-year protection vs. 100-year protection. There’s
such a little difference between a 100-year storm and a 50-year storm that you’ll spend 95% of
the money to give 50-year protection. You’re not saving any significant money at all in light of
the dollars we’re talking about to go to 100-year protection.

It’s not like you go to 50-year protection, you cut it in half. You cut it by a few
percent, maybe outside 10%. You don’t save a lot of money there. You get a whole lot of bang
for your buck when you go on from 50- to 100-year protection. That’s a political decision. At
some point, there is a line that you’ve got to say, this is all we can afford. Frankly, Fort Collins,
I’d say I was at the forefront of providing—lots and lots places do two-year protection or ten-year protection. That comes with a cost when the big storms happen, like ’97 did, $200 million worth of damage to Fort Collins, given the wrong location, the amount of life. We’ve talked about that already. Lots of life could have been or the economic impact if it happened in Old Town today.

If the Spring Creek would have happened a mile north or a mile-and-a-half, two miles north, I don’t think we’d live in the same Fort Collins we live in today. It would be entirely different, the damage. Literally, devastation would have happened in Old Town if that flood would have happened a couple of miles north.

Q: So we were lucky that Elizabeth and CSU took the brunt of it.

RANDALL: Well, actually, the brunt was further south

Q: A little south.

RANDALL: CSU didn’t even get the—the biggest water was literally Spring Creek. Drake and Overland, that’s where the biggest, the most concentrated water was.

Q: The deaths were at College and below Prospect, right?

RANDALL: Yes, the trailer park, so that railroad embankment, the railroad on the west side of College Avenue, that embankment south of Prospect is probably 20 feet high, and so all that water was backed up half-a-mile behind that embankment. The embankment was never designed to be a stormwater retention basin, even though it became that. In some ways, it was really good it was there. Otherwise, it caused problems. The trailer park that was built directly on the east side of the railroad track in the floodplain, that was a bad deal, really bad deal.
Q: I think we’ve covered most of our questions. Are there issues that have come up as you’ve been speaking that we’ve kind of skirted around that you haven’t been able to talk about fully?

RANDALL: The one thing I might bring up that comes to my mind, we haven’t talked at all about the construction, but when you start building large-diameter conduits in existing streets where people live and work and everything else, that’s really, really specialized work. It is very challenging. It’s dangerous if you’re not really careful, and so we did a lot of work, a lot of work, to keep our construction people safe. We did a lot of work to keep the public safe while we were in these areas.

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Q: Can you explain what the dangers are to the public and to the workers?

RANDALL: Just literally last week, there were two guys killed in Windsor that were in a trench that collapsed. That didn’t happen by accident. It was not a safe situation, and the appropriate means were not in place to protect those guys from what they were doing, and every project that we do, one of our absolute tenets of our alternative [ph] product delivery system is safety, and that’s safety for the people who design it, safety for the people who build it, and safety for the public that are around our construction, and then safety for the public once we’re gone, and certainly safety for the people that have to operate and maintain the system.

We work really, really hard at safety. Right behind us here when we were laying 108-inch pipe 25 feet deep, we actually were 30 feet deep when we crossed Prospect, and doing that in a 45-foot right-of-way where you had to have the magnitude of the equipment that we had and be 30-feet deep and only have 45-feet of width to do that in. At that time, there weren’t a lot of
people using what’s called a slide-rail system. We boxed every foot of that pipe from start to finish.

It was a slow-go, but we actually went to Mississippi to look at a job that they were building with slide-rail to see, along with our contractors, whether or not it was a system that was practical and realistic for us to use, because pulling conventional trench boxes 30-feet deep, the forces are so great that the contractor really, really had serious doubts that that was remotely a viable system to do it, to put that pipe in the ground. All the while, the other thing people have to understand and appreciate is that all the other utilities that are underground still have to function while we’re going through.

That’s a huge challenge in and of itself. Something I’ll come back to I mentioned also is that we talked about our old infrastructure, aging infrastructure, earlier, so when we’re going through on building these types of jobs where we’re tearing out the street from curb to curb, a lot of times we’re replacing the old infrastructure, at the same time, either before we get there with a big pipe or after we leave. We’re replacing that infrastructure.

Q: So does that mean you can be replacing water-supply piping, as well as stormwater piping?

RANDALL: We replace the water-distribution piping, the six-, eight-, 12-inch pipe, we’ll be replacing that, and also the sanitary-sewer pipe, replacing that too, at the same time. Sometimes we have to move those in order to put it in, so it doesn’t cost basically anything in the light of a cost of a project to put new pipe in, or sometimes it’s way cheaper to take it out, put in temporary water for the people, build the big pipe, put the new water system back in. It’s saving the utility and our customers a significant amount of money when we’re replacing infrastructure all at the same times.
That road’s torn up. The pavement’s gone. We go down a street. When we leave there, all the water utility infrastructure is replaced, and frequently we coordinate that certainly with power and the other dry utilities too. A lot of times they do the same thing. They’re in with us. We’re coordinating the projects to work really closely together to get their infrastructure fixed or moved or replaced, at the same time.

Q: I have a question that comes from being just a member of the public, and as a member of the public, of course, I can’t see most of the infrastructure that exists. It’s below ground.

RANDALL: Nobody knows it’s there.

Q: So my question to you is, as an engineer, working in, for example, stormwater, but knowing that you have to think about sewage, and you have to think about electricity, and you have to think about all of these other aspects of the infrastructure, to what extent can you rely upon records that tell you precisely what’s in the ground, and do you ever encounter surprises?

RANDALL: You can’t rely on anything, and we have nothing but surprises.

Q: Can you give an example?

RANDALL: Yeah. We commonly refer to them as built drawings, and in more recent times, say, the last ten to 15, even 20 years, some utilities, they’re pretty accurate, and they’re pretty good, but it’s really hard to depend on them, that they are exactly where they say they are. Older stuff, there’s no records outside of we know or the owner knows there’s something in the street somewhere, and they don’t know how big it is or what it’s made out of or how long it’s been there. At least they know it’s there.

The other challenge we find frequently, and when we were doing those big storm sewers in Old Town, we did a lot of that work in the College Avenue area, we did it at night, and so I jokingly say, every other bucket has a surprise in it. It’s almost true, and at 3:00 in the
morning and you find a pipe that nobody knows about, there’s nobody to call at 3:00 in the morning and say, is this yours? Is this a gas line? Is this an old power conduit?

Q: What is it?

RANDALL: Is it in service? Is it abandoned? Do we need to worry about it? Existing utilities are a huge challenge every day we do anything. It’s really, really difficult, and it costs a lot of money, and the challenge that I think a lot of people, the public doesn’t realize is that underground, it keeps getting more and more and more crowded. There’s a lot of infrastructure being put in today by directional drilling, and so they’re not tearing it up on the surface, but they’re drilling holes through the ground and pulling their utility behind them, and they run into existing utilities. They don’t tell anybody they’re there, on and on and on. There’s endless challenges there.

Everything we do on the big pipe, we don’t have any choice. It’s one thing if you’re laying an 8-inch watermain. You come to something that’s in the way, you go around it. When you’re laying 60- or 108-inch pipe, you’re not going around anything, and so we have to know everything is out of our way, either is out of our way or we can move it, because when we get there on the gravity system, we have to be able to go through it. We spend a lot of time and a lot of money upfront locating existing utilities.

Q: It sounds like a huge challenge.

RANDALL: Believe me, that word, maybe it’s adequate, but it’s not too small.

Q: Anything else?

RANDALL: I think that hits the highlights.

Q: Thank you so much. I really appreciate it.

RANDALL: You’re welcome. Thank you.