Reflections On Water – **PFAS in Focus: Wastewater Utility Perspectives From Jay Hoskins, Metropolitan St. Louis Sewer District**
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Anna Wildeman:

Welcome to Reflections on Water, I'm Anna Wildeman.

Dave Ross:

And I'm Dave Ross. Thanks everybody for joining us again for another episode of our podcast. So Anna and I participated in the Missouri Water Seminar over the summer and we had an opportunity to talk with several attendees about how the water and wastewater sector is grappling with PFAS developments. Anna, I'm excited to launch the second episode of this three part mini series.

Anna Wildeman:

Yeah, me too, me too. We had the opportunity to speak with Jay Hoskins out in Missouri. Jay works for the St. Louis Metropolitan Sewer District and brings kind of an interesting perspective to the PFAS discussion. We've talked a little bit on this podcast about PFAS in the drinking water side, and Jay comes at it from the wastewater side. So he talks a little about solids and a little bit about pre-treatment program management. So I think it's kind of an interesting interview. And let's go ahead and roll the tape.

We've got Jay Hoskins here.

Jay Hoskins:

Good afternoon.

Anna Wildeman:

With us. Jay is the assistant director for environmental compliance at the Metropolitan St. Louis Sewer District. Jay, thanks for popping out of the conference to spend a little time with us.

Jay Hoskins:

Thank you for having me. Good to be here.

Anna Wildeman:

You and I have known each other for a while actually, right?

Jay Hoskins:

Yes.

Anna Wildeman:

And tomorrow we're going to be on stage together talking about one of my passions, nutrients.

Jay Hoskins:

My passion too.

Anna Wildeman:

Is it your passion too?

Jay Hoskins:

I do.

Anna Wildeman:

Wow. Shared passions. Dave, do you have a passion for nutrients?

Dave Ross:

I actually have a passion for nutrients, but in the moment we're going to talk about something, but I think everybody is passionate about right now, which is PFAS. And so I wanted to talk to you, Anna and I wanted to cover this from a PFAS perspective. Everybody thinks about drinking water. We just had the new health advisories at EPA just dropped. But you're in the wastewater sector, and I don't think people are thinking as much as they should, but what this means from a wastewater perspective. So can you give us some thoughts about what you're doing at St. Louis? Thinking about planning for what's coming from a PFAS perspective?

Jay Hoskins:

I think that the PFAS issue globally is a huge issue that wastewater utilities across the country need to be paying close attention to. As a utility industry, water and wastewater folks have been talking about one water for a while, that the water system, drinking water system and wastewater system and how related they are and the levels and limits that are drinking water brothers and sisters are going to need to provide our communities will be related to what we wastewater utilities are allowed to discharge into the waters. And also what kind of bile solids treatment will be required from our wastewater treatment facilities, which from an infrastructure perspective could be a complete game changer and what utilities have to spend to treat wastewater.

Dave Ross:

All right. So let's unpack, there are a couple of major topics in there that you have the surface water regulations, surface water quality standards that are going to be established and Clean Water Act discharge permitting bio solids management. Let's break it down a little bit. How are you thinking about setting up your utility? You're a passive receiver of the PFAS that comes to you in the wastewater and that creates a special set of challenges, so how are you thinking about it?

Jay Hoskins:

First all, let me just give a little context for MSD. So MSD is the largest wastewater utility in Missouri. We're about 30% of the total phosphorous nutrient load in Missouri for some perspective. We have a multi-year, multi-billion dollar consent decree on wet weather and CSOs and SSOs, and we have a $500 million bio solids project ongoing right now. We have a lot of different capital needs. And so PFAS is one

issue among a whole lot of issues that MSD has to be thinking about. And that's part of my job, is to think about that and help the utility look at and prioritize what those investments need to be. With regard to MSD's plan, I think when you think about wastewater, you have to think about all the places that wastewater comes from, whether it's coming from our homes or it's coming from businesses or industries, and then understand what's in the wastewater.

So you have this whole collection system, which by the way, MSD has the fourth largest collection system in the country. It's huge relative to the size of the population. And so we have a giant collection system. We have a very old and historical legacy set of industries that affect our sewer system and what we do and how we go about treating the water, what treatment systems we use. And then when you think about wastewater treatment itself, we have a lot of complicated issues. We have flows that are much different during dry weather conditions than in wet weather conditions sometimes because of our wastewater plants that treat combined sewers. Those flows can go up four times, five times during wet weather. And MSD is investing billions of dollars in storage and tunnels to store that and also ingrain infrastructure to store water and return it to the ground so that it doesn't end up in the sewer system.

And I lay all that in context to say, when we talk about PFAS, we have to be thinking about this whole issue holistically in light of all the other things that we do. So we're looking at our industries, we're looking at our own unit processes, we're looking at how do we communicate that risk to the public relative to all the other priorities that we have. And we have components of that, that we really started in district in a lot of different ways, whether that be on the storm water side, when we're talking about fire protection and fire departments and what fire departments are doing to test their systems all the way down to what industries are using or have used those kinds of chemicals in the manufacturing of the products.

And so you start with looking at your sources and looking at what those sources might have used, doing monitoring, not just looking at what industries you have today and what discharges you have today, but what might you have had in the past. And those are the things that we're really focused on right now. Source control, source treatment, identifying those areas where you might have hotspots, and then we'll talk about, okay, how do we plan for that? And what might have happened in the past and how will we deal with those legacy issues in the past and how will we deal with those discharges that we have right now? So two different questions there.

Dave Ross:

So in the wastewater context, I don't think people spend as much time effectively when you're talking source control, where it's coming from, that's the pre-treatment program. So can you do a little stage setting for our listeners who may not think about pre-treatment program? Quite frankly, not a lot of people spend a lot of time thinking about pre-treatment. What are your authorities or how do you grapple with what's coming into your system before it actually hits your plant?

Jay Hoskins:

So the way I think of the pre-treatment program is the pretreatment program is there to protect the treatment plant. It's there to make sure that the treatment plant can treat the water to safe levels. And that pre-treatment program means going out and inspecting industries that may be putting chemicals in the wastewater that either prevent wastewater treatment or inhibit it, or maybe the wastewater treatment's not effective. And so those folks need to deal with that issue at the source. And that question of what industries or what discharges have those kinds of chemicals can only be solved really

with inspections and monitoring and doing the surveys of what's going on in that collection system so that you understand and have a better understanding of what's coming into your treatment plan.

And that's where our focus has been to date. We've really looked at source controls and what levels of PFAS might we be receiving and from what kinds of sources, whether they be former manufacturing facilities, landfills, airports, every major city has these kinds of industries and infrastructure in their city. Everybody has an airport. And so that's why I say everyone who works in the wastewater industry needs to be paying attention right now because this was a chemical that was used by everyone for all kinds of products that everybody had. It wasn't something that just a few people had, it's something that's fairly ubiquitous into the collection system.

Anna Wildeman:

You've mentioned this a couple times from your perspective on your side of the water sector, you have a very sort of long term planning horizon. And I know that a lot of people who work in the water sector and around the water sector understand things like discharge permits and regulations and wet weather flows, but not a lot of people really understand that asset management, long term planning, the money side of your business, and when you have all of these competing priorities you named a bunch of them are two favorites that we'll talk about, nutrients and PFAS are just two very specific, very timely, very expensive pollutants to manage. Can you talk about how you look to the future for your long-term planning process with competing regulations, competing priorities? Because we know that EPA and we know that DNR don't promulgate regs on your planning horizon. So how do you manage that?

Jay Hoskins:

First off, let me just lay this framework for the length of time that our capital project extends out to our programming. And we're thinking about projects right now that extend out to 2040.

Dave Ross:

Wow.

Jay Hoskins:

Nearly 20 years. And we have a long time horizon to get these projects done. And we have a need to make sure those rates, utility rates stay as affordable as possible and quite frankly protect the most vulnerable economically, social economically in our service area and so we're trying to manage a lot of different things in that capital program. We also want to make sure that we have the construction capacity within our region to do what we need to do. We want to be as transparent with our contractors. This is the kind of work that's going to happen. We're going to build big tunnels, we're going to make treatment plant expansions so that they have the workforce that's necessary to do what we need to do as a society. And so we try to be as transparent as possible with our whole community about what's going to happen, when it's going to happen, and what the needs are and why they're that way.

And my management team is focused on executing our consent decree on wet weather issues. St. Louis had hundreds of constructed sanitary sewer overflows. Now we're down to tens. We're reducing our numbers of combined sewer flows. We've seen remarkable progress in the water quality of our surface drains by eliminating those sources. And we want to continue that progress, but we can only do that because of what we can afford to do. And so when something like an issue like PFAS or nutrients or another water quality standards, a new issue comes up, we have to evaluate that issue and the context

of that 20 time horizon, you want to put in PFAS treatment in three years? It's going to cost, making up a number, tens of millions of dollars, hundreds of millions of dollars, a billion dollars, I don't know. But that project, if you do that and move that up in the schedule, was going to cost something else to push back because not everything can be done at the same time and not everything can be the highest priority.

Dave Ross:

So let's talk about the asset management that horizon, that planning you talked about earlier. You have a $500 million biosolids management program that you're implementing. And yet here is a new issue, especially in the wastewater, where EPA will begin drifting in or DNR may begin drifting in to regulate PFAS in biosolids and so if you're already in the middle of a capital project, how do you layer in that new potential regulatory requirement that may completely change your bio solid strategy?

Jay Hoskins:

That's a great question. And to be honest, Dave, I don't have a great answer for it. You have to be able to adapt based on the science. Our hope is at MSD, we're making a giant investment in new incineration technology, which at the beginning of this capital project, we identified as the only technology at the time that was capable of destroying PFAS. And biosolids, there are three things that you can do. You can burn it, you can bury it, you can apply it to the land as fertilizer. And so we made a choice, Long term for us, the best choice was to incinerate or burn our biosolids.

And my hope is that technology puts us in a position to manage this issue. That being said, the levels and the action levels that we're seeing coming out of the health advisors, your drinking water, driven by risk studies that aren't necessarily focused on drinking water issues. Ingesting or taking in PFAS, whether it's through drinking water or through the air or however, those same risk models affect other pathways. And so we're going to have to see what those levels come out to because it may change what we do and it may change what our process requirements are.

Dave Ross:

Each state is approaching this differently. Maine moving to restrict land application, Illinois moving to restrict incineration. VPA comes out with a hazardous waste or hazardous substance listing for PFO, PFAS. Suddenly, burying it goes through a different set of protocols than currently exists. Actually, I'm happy we're having this conversation because I don't think enough people pay attention to the decisions that you have to make about how you do asset management in the long term based on decisions that are coming out of a thousand miles away, that may not fully appreciate what it means from an operational standpoint.

Jay Hoskins:

I would just also add that I think MSD is a little bit of unique situation to other folks in Missouri. We incinerate our biosolids. Most folks don't. Most wastewater providers in the Midwest use land application. We're an agricultural rich state. It's the number one industry in our state. We think about biosolids as a resource, it's something that we use as fertilizer to grow crops and food. And so when we think about taking out that fertilizer input, that's also a bottom line cost to farmers, means that there's got to be another input that fertilizer inputs got to come from somewhere. So you're putting in other types of fertilizer to make up for that, what you don't have from biosolids. And so that's the other piece

of this that I've heard from other wastewater folks is, it's not just that the wastewater folks won't have the ability to safely manage their biosolids, but there's an economic impact to farmers that rely on biosolids for fertilizer.

Anna Wildeman:

Jay, we talked to someone who I think you know very well, Chris Wieberg at the Missouri DNR, a little bit about PFAS as well, because he comes to this discussion with another unique perspective, managing at the state regulatory level. They're in the process of collecting a lot of data, trying to really understand the risk profile in the state. We know that EPAs going through their process of setting these interim and final health advisory levels. And though you may try as hard as you can to set a course for the future with all the best information that you have, there's still a lot of unknowns about this emerging contaminant and how it may affect your business. Can you talk a little bit about how you manage risk communication with your customers, your community? How does that work in this space where there are so many notes and yet a lot of people have a lot of questions, rightly so and want to understand what does it all mean?

Jay Hoskins:

Two things come to mind first off. First is, we want to be proactive. We want to get in front of the issue and tell our story and our side of it before it becomes something else. And we do that on many issues, whether that be about monitoring for COVID in the wastewater or nutrients or biosolids. We try to get in front of the issue and get our story up. Our public affairs group does a fantastic job of trying to tell our side of things before it gets that far. The other piece of this that I think is important, and I think everyone in the wastewater utility industry needs to know, is that we ultimately will need to communicate risk and what kind of risk PFAS poses from our systems. And that's not something that historically we've done a lot. Historically wastewater folks have said, the EPA says this is the safe level and we're meeting or exceeding that level. In this case, at this time, the levels that the agency is developing, those levels are below what we can detect in the laboratory.

And that's going to make this a very complicated issue to communicate. And that's going to take collaboration with the agencies, with health departments, with community leaders. Because ultimately we need to communicate risk accurately and fairly. And we need to give folks a sense of calm, that if this is an issue, they have the assurance that we will deal with it. And in the meantime, we need to let science play out and look at all of the different pathways, all of the different concerns, and come up with good criteria that we believe in. And I think that if we have good criteria and good by that means criteria that we are confident are worthy of following, then we will as a utility group, as a society, meet that challenge.

We will do what's necessary to be done. But right now we are in an awkward position because we had one set of health advisories that were high, 70 parts per trillion. And now we have another set of health advisories that are several orders of magnitude much lower than that. And how we go about communicating why that change occurred and what that means to public health right now is very important.

Anna Wildeman:

Because the bottom line is that, you can test all day and all night and have no detections of this constituent in your waste stream, zero detections. But that's not informing the level of risk associated with the interim health advisory levels because they're so far below what you could even detect.

Jay Hoskins:

Correct.

Anna Wildeman:

So that's the challenge. Look, we don't have it here. We don't see it here. It's not in our data set.

Jay Hoskins:

We don't see it. And yet we can't tell you based on that number, if it's safe or not. That is an awkward position to be in.

Dave Ross:

And then I'm going to translate that to bring it back to the beginning of the conversation is, you make the decision based on the best available information you have, and then you have to go to your rate setters to decide if you're going to shift your capital spend. And so how do you take this information now that if you decide to adjust your asset management strategy to provide more treatment, do something different, how robust does that have to be when you go decide to either ask for more capital or to adjust your rates? Maybe we close this out by talking a little bit about that rate setting that you have to go through in order to get that long term capital management plan approved.

Jay Hoskins:

So we would adjust based on a change in regulation. And I think importantly, right now we have not had a change in regulation. We just have a number that's an advisory, right? So that's another awkward angle to this. The challenge is once you have an MCL or once you have a water quality criteria on the books, how does that get implemented and is it through? And most likely in our case would be through one of our wastewater permits. And so the way that would happen for us, you'd have a new criteria, you would need to either put it in capital, construct capital to meet that criteria, and presumably we would negotiate some period of time with EPA or our stay agency over that time that we'll get to implement that criteria that blends into that overall capital program. And we'll have to communicate that with our rate commission as to, okay, this is what that driver is going to cost.

That's what that issue is going to cost. That problem is going to take 10 years to construct, and this is what it looks like. For us, when we go to our rate commission, we want to tell them this is something that either the federal or state agency is telling us is required. One of our bedrock principles, we don't do projects voluntarily because we have so many, many projects on our plate that are required. Those are the ones at the highest priority. So it's a little bit difficult for us just to, based on the wind of the day, change our capital program. In fact, it's nearly impossible because what we have to do is direct the capital program to the regulations that need to be met today. So tracking this regulatory formation process at the onset is really important to us because we know that when those PFOA or PFOS levels

become a regulation, that's when things get real because that's when you start seeing things show up in permits that can really affect your capital program and cause change.

Dave Ross:

This is extremely valuable for, I think, at least in the policy world where we spend a lot of our time translating the policy discussion, the trending science, new regulation into actionable on the ground, how does the city or utility actually grapple with the emerging issue. It's not getting enough discussion in the public airways right now. So we really appreciate that. I think we go on forever. I personally am looking forward to the two you get on stage and talking about nutrients, and then I think at some point we need to come back and then do pod on trades.

Anna Wildeman:

No question. These guys are doing a lot of really cool stuff here in Missouri on nutrients. So Jay, maybe you'll come back and get Chris and do a whole little reunion.

Jay Hoskins:

Sounds good. Come back to Missouri. We'll do it again.

Dave Ross:

All right. Thanks, Jay. Appreciate it.

Jay Hoskins:

Thank you.

Anna Wildeman:

Thanks, Jay.