



TWV Podcast #031
Accelerating Innovation in the Water Space with Chris Peacock
Show Notes at <http://thewatervalues.com/pod31>

Intro: Welcome to The Water Values Podcast. This is the podcast dedicated to water utilities, resources, treatment, reuse, and all things water. Now here's your host, Dave McGimpsey.

Dave: Hello and welcome to another session of The Water Values Podcast! Thanks for joining me.

We've got a great guest, as always, for you today, but before we get to the interview, just wanted to remind you to listen all the way to the end of the podcast for the all-important disclaimer, lest you rely on the information in this podcast to your material disadvantage.

On today's podcast, Chris Peacock joins us to talk about innovation in the water space. Chris is quite the water innovator, having worked to develop a market for water rights in northern Arizona and established the Water Innovation Project in 2013, which has already spawned two projects: H2.0 and a book, each of which Chris will explain in the interview. So keep listening for a great and informative conversation with Chris.

With that said, let's get on with it. Open the valves, fasten your seatbelts and here we go.

Dave: Chris, thanks very much for coming on to the Water Values Podcast. We greatly appreciate your time. To start off, why don't you just tell us a little bit about your background and how you got interested in water.

Chris: Thanks, David. It's great to be here. I appreciate you having me on your show. So I got into water quite by accident. I had a family business with my parents. We did some land development. When we went to sell the business a number of years ago, we had some property that had water rights associated with it. And I had carved off five acres for myself. I built my first house on it. And as we started kind of moving forward, I realized that I had no need for these water rights, not being a farmer in the agricultural industry. So over the next three years, I went out and I acquired even more of the water rights. I learned what to do with them. I was packaging them up. I was working with investors. I was working with other developers. So that was really my entrance into the water realm, was buying and selling water rights and building a water market in northern Arizona.

Dave: Tell me a little about that. What is the market like in Arizona and how did you go about developing that?



Chris: So there really wasn't a market when I started. I basically started from scratch so I was looking across the country. Who else had water rights? There were some markets up in the northwest area, a little bit back East. But I really took a lot of lessons learned from areas like Australia and started looking at some of the water economists in the area, learning what water rights really were and what they meant. So I basically spent three years doing a lot of research, learning about those water rights and building the market. So we started with basically no market with a number of individuals who didn't even know they had water rights associated with their properties to becoming kind of the expert up in northern Arizona.

Dave: As that process went along, as you kind of developed the market, who were the participants? How did you actually create it? Who was coming in?

Chris: So I started working with some of the local municipalities, some of the small towns up there. We were in the high-growth development stage. So I was working with municipalities. I had developers starting to come to me because they had learned that I had acquired these water rights. And it just kind of grew from there. I got involved in a public-private partnership to design, build, operate, and finance a local wastewater treatment plant. And so basically it's all the stakeholders that you would anticipate being in a water market, everything from local government to developers to landowners and ranchers and the environmental groups, as well.

Dave: What's the status of all that right now?

Chris: There's a number of water rights that are still up northern Arizona. Obviously, the market took a big hit a few years ago as everybody is acutely aware of. There's been some pretty big transactions up there. Prescott Valley sold some huge effluent water rights. So there's still a lot of water floating around up there right-wise, but it's a closed aquifer system which makes for a really unique experience because you're not pulling from outside water resources like CAP like you would see in other parts of the state.

Dave: And so what are you doing now?

Chris: So now I'm – I laugh only because I don't know how to answer that question. I work with a company called FATHOM, which is a software-as-a-service cloud-based company based out of Phoenix. We provide software solutions to the water industry, but I also have my own company, the Water Innovation Project, which is an idea lab, consultancy and leadership hub. Basically trying to transform the way we value water as a society. And then I've got a group called H2.O, which is an online collaboration platform for water utilities and software companies to interact around basically the smart water good. And then I've also got this book that's coming out. So the bulk of my time when I'm not working a real full-time job is putting together these amazing 25 authors and publishing a book.

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Dave: Let's take those in order. You mentioned the Water Innovation Project first. Tell me a little bit of how you came up with the idea for the Water Innovation Project, and more importantly, what it is.

Chris: I've been in the water sector for about 15 years. When I left the water rights business up in northern Arizona, I went to work for a number of engineering consulting firms in the water sector. And I spent about 10 years running the back office operations, so everything from marketing to human resources, strategic planning, risk management. And what I started seeing early last year was a transition that's starting to occur in the water sector. And we're hearing a lot about the value of water, how the value of water needs to change. And I wanted to have a larger impact on the industry as a whole more directly as opposed to being in the back office.

So I launched the Water Innovation Project last summer. And basically, I was focused on technology companies that I could work with, help them navigate this fragmented water market doing a lot with executive coaching and developing emerging leaders. And then working with some really great collaborators to do some really cool innovative projects in the space, which is really vague sounding. It's intentionally made that way. It's what I call my innovation lab. I get to do fun stuff and experiment and see if it sticks to the wall. Two of those projects have come to bear, H2.O is one of them and then the book is the other.

Dave: So it's been a year since you've launched the Water Innovation Project or just a hair over, and you've already got two things come into market so to speak. That sounds great. Do you have anything else to say in terms of how the Water Innovation Project has progressed? How's it being received out there? Is it about where you thought it was going to be?

Chris: It's changed drastically from what I originally thought it would be. Being an entrepreneur in the water sector is challenging. It's hard enough to be an entrepreneur, but doing it in the water sector has its own challenges. In many ways, I've made many more relationships, and I've interacted with associations and groups I never would have had the opportunity to interact with before. So in that sense, I've gotten a lot further than I thought I would originally. Some other pieces kind of trailed off. So some of the consulting work that I was doing I had to put aside when I went to go work for FATHOM. And FATHOM is my founding sponsor for H2.O. So some of the work I've put aside. Most of it now is really focused on the innovation and lab piece of the Water Innovation Project along with the leadership development components. The executive coaching, I've met some great people through that. And then pulling the projects together is fun. It's really fun to work with these passionate people that are in the water sector.

Dave: Let's talk about the projects. You mentioned you've got the two spinoffs, and those are actually the second two prongs that you identified earlier. So talk to me a little about H2.O.



Chris: H2.O is really focused on how utilities can leverage their data. There's a lot of data in the water sector. Most utilities don't know how to use it. Most utilities don't have the capabilities to really work with that data and understand what it means. And there's some really great technologies that are starting to come out that are really allowing us to gain better insights into how a utility operates. But what I was seeing was a big disparity between the software providers, the vendors, the consultancies and the utilities themselves. So what I wanted to do was put together a venue that allowed all of those parties to really interact and work together so that we can bring the right solutions to the marketplace. And really just to create a collaborative opportunity to really share information and best practices around information technology in the water utility sector.

Dave: What kind of data are we talking about here? Is this smart meters or is this other data that you're talking about?

Chris: So it's all of the above. So we run the gamut. When you talk about smart water, everyone has their own definition. But I look at everything from the meter up to the house, the consumption data, the way you interact and engage with the customers, the way that you're doing your billing, pump and pressure optimization within the systems. There's a whole other slew of areas. So for me and H2.O, it's really any data that's acquired as part of the utility operations. And then if you take it a step further, you start aggregating that data at a watershed level, or within a city or within a state, you can start getting a better and more holistic view on how the watershed and the water resources in an area are really doing.

Dave: How do you look at the adoption of GIS? Does that fit into the paradigm you've just described here?

Chris: Absolutely, I think GIS is a central component to a lot of what's happening in the smart water world. GIS has always been pretty important in the water sector in order to understand where your pipes are at and where the pumps are at and doing work order management and making sure that the meter readers are going to the right houses and mapping all of that out. So GIS is a huge component of the smart water world, absolutely.

Dave: I was around some utilities when they were first starting to adopt GIS. In terms of the pipes that were put in the ground before GIS systems were available, I recall them talking about technologies where they could go back and identify where their pipes were. Have you seen any of that and how's that data being developed by utilities?

Chris: I think that happens a lot in utilities. Even the 10 years I was working for the consulting engineering firms, you go and design a pipe and put it in the ground. Hopefully, you get the right as-built drawings that come back in terms of where the pipes are actually located. I think it's common especially in well-established areas in terms of being able to go out and really map

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where that infrastructure is at. I think as an industry, we've done a much better job over the past decade getting that information. But I know there's still a lot of pumps and pipes that are out there that most utilities don't know where they're at until they break, which is unfortunate.

Dave: You indicated that you were bringing solutions to market through the use of all this data. What do those solutions look like? And if I'm a utility, how do I know that I need one of these solutions?

Chris: Those are great questions. So when I look at information technology and data in the water sector, I start looking at the returns on investment that utilities can get out of that technology, whether it's AMI or customer engagement or SCADA systems. I think the ROI is a lot quicker and a lot higher when you're leveraging data as opposed to let's say building a new supply or building a new treatment technology or installing a whole new set of pipes. I think it's a lot easier to calculate that ROI.

So the groups that I'm working with are individuals that have systems like leveraging the AMI in order to help the end user conserve water. That's a huge talking point right now, especially here in California where I'm at. So being able to show end users how they're using their water and when they're using their water is huge for helping them change their behaviors on a day-to-day basis.

When you start rolling into AMI programs and you start collecting data at a much more granular basis like once an hour rather than once a month, you're able to get in front of any leaks that may be occurring between the plant and the house. You can start seeing in real time where the water's going and hopefully catch it before it becomes too much of an issue.

And then you start getting into actually sending out bills properly, collecting your revenue on a regular basis. So all of these things really add up. And I think together, that's what creates that smart water utility and really brings those economies of scale to the market. Especially with some of the newer technologies that are able to leverage massive storage and cloud-based solutions and offering software as a service as opposed to investing millions of dollars in one system up front.

Dave: What are some of the examples of the things that you think utilities are really latching onto in this space?

Chris: The biggest one here in California especially is the leak detection and the water use. So AMI is becoming pretty important, especially in light of the drought. There are some other really great technologies that are probably more useful back East. So the leak technology and the pressurization of the systems especially in the older systems to start identifying where the leaks are occurring really helps utilities manage the infrastructure better and identify where the leak is

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likely to occur and replacing those sections of pipe as opposed to every piece of pipe that's out there. And we all know that's an unsightly number, and I don't think anybody really knows what that true number looks like.

Dave: It's a lot. When utilities start moving down the road using all this data, when you identified leak detection, are you saying they're able to find the leaks on their own on their side of the meter, or on the customer side of the meter, or are they looking at both of those?

Chris: There's technologies for both. Using FATHOM as the example, and I guess I have to do that since I work there, right. I see it every day. We've got projects out there where customers are able to get an alert when we start seeing a constant flow into their house. And most households aren't running water 24 hours a day. So you start running this type of technology, and you're able to let the consumer know within a few hours that they have a possible leak rather than 45 days afterwards, which is when they would typically see it when they get that first water bill for a few thousand dollars rather than their normal couple hundred dollars.

Dave: What about your large end user water customers? Have they been adopting some of these big data type solutions to better manage the water use in their plants?

Chris: Yes, absolutely. I think there's a number of cases around that. One of the utilities that I'm working at now, they have a pretty large water user so they're leveraging big data right now to understand where their water's going. They can see when they've got irrigation pipes that are leaking and being able to go out and fix those. So we're definitely seeing it more and more. And I think on the industrial side, as well, you're hearing a lot and starting to see some new technologies come out to help them better manage their resources, and internally, making sure that they're managing their water appropriately.

Dave: Have you seen anything in the ultra-pure water side of the market, and are those ultra-pure companies using big data?

Chris: I haven't worked with any of them directly. I know it's definitely a topic of conversation. There's obviously the technology pieces out there to treat and purify the water. And I think everything nowadays that's being developed has a data component to it. So there's certainly a use for the data. Like I said, I haven't interacted with any of them individually. Actually, one of the authors that's in the upcoming book has an entire chapter dedicated to the industrial watershed and how the commercial side like that can probably better leverage as well.

Dave: Perfect segue. I was going to ask you about your book coming up here. So tell me about it. Tell me what it's called and how did this idea come out of the Water Innovation Project?



Chris: So the book is entitled *Damned If We Don't: Ideas for Accelerating Change Around Water*. And it was kind of a spitball project to be quite honest with you, David. I sent out one of my monthly newsletters or quarterly newsletters and kind of last minute at the very end on the bottom, I put a little box saying, "Hey, I've got a call for authors for this book." And at the time, the book was entitled *Water 2.0*. It was going to be focused primarily on smart water. And what I realized was people probably didn't want to read an entire book on the technology of smart water at this point. And I had a number of individuals that reached out to me that I had known personally, and said, "Hey, I'd really be interested in contributing to your book. But it's not going to be technology-based. It's going to be on another topic." And over the period of a couple months, I ended up with 25 plus authors who are all really interested in contributing to a book. So it just kind of evolved.

And then I realized one day, this is something I'm actually going to be doing. And I became a publisher now by virtue of putting this book together, which I think is another story but important for the water sector. I decided to really build my own publication company around this because as the title suggests, we're looking at ways to accelerate the way we change how we manage water. And everybody knows that the water sector has historically been slow to adopt new technologies for good reason in some cases. But what I didn't want to do is have an 18-month period where the book just went quiet or it went through a publication round and did everything that you traditionally do in the publication world. So we accelerated that. I think from start to finish, we're looking at about just under nine months of getting all the chapters in, editing them and then getting them out for sale. So right now, it's on preorder on Amazon, and we're officially selling the book at the end of October. It'll be available for purchase.

Dave: How's the book organized?

Chris: I was challenged a little bit with how I was going to organize this book when it first came out. As you can expect, 25 different authors, 25 different concepts and ideas. But what I found was this really nice flow that started occurring. And so the beginning of the book is really about extreme weather conditions and what's that's doing to not just our physical infrastructure but to the economy and the impacts that it's having.

And then we roll into some really great essays around leadership and developing people in the water sector and how we communicate about water to the general public. I think everyone can agree that our communication as an industry to the public has been pretty tough. We haven't been doing a good job. So there's some really great organizations that are starting to come out and really address that issue.

Then we get into what types of technologies are available within the water sector. And we start talking about innovation hubs and clusters and how that's impacting and changing the way that

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we can get technologies to the market. How do we get some of these new technologies into the hands of the utilities and into the hands of the end users?

And then from there, we flow into some entrepreneurs who are actually doing stuff in the water sector whether it's AMI types of work or different treatment technologies. There's some really cool entrepreneurs that are out there. And I think a lot of people would be surprised at how large the entrepreneurial base is in the water sector right now. It's starting to grow, especially as it relates to big data. We're seeing new entrants coming into the sector and bringing some really great ideas from other areas.

And then we end the book with a really great chapter around gamification and engaging the end user in the management of watersheds.

So it's got a nice arc to it. It's disjointed at times because we've got 25 different authors. But really at the end of the day, the purpose of the book is to help people understand that there's some really great ideas out there around managing water. In order to better manage and accelerate the change around water, we need to collaborate and innovate. And it really takes a broader group of individuals to do it.

I think what all of these authors show, yourself included, is that change can really only occur if you're willing to take action. And so every one of the authors that are in this book have taken action. And maybe that's a surprising point of the book. It's not just about really great ideas, and it's not just about talking about new ideas – it's about doing something. And so my hope and the authors' hopes is really that when someone reads this book, they find some inspiration. They go do something about it, not just talk about it or read about it. But go find a tribe, go do something and make a difference in the world of water.

Dave: I think those are great points. And you've pre-released some of the chapters, and I read Todd Danielson's piece on essentially promoting engagement. If you're a utility, have your employees get on Twitter and on social media and spread the word about water and engage with your customers. I think engagement and doing the types of things that you, Chris, are doing to try to spread the word is really important. And I applaud you for taking the initiative to get that book done. Now, you said there are 25 different authors. What's the target audience?

Chris: The target audience for this book is really individuals who work within the water sector. The focus is for them to understand what's going on, maybe in areas that they may not see on a day-to-day basis. One of the things we wanted to do with this book was start breaking down the silos that exist in the water sector.

Within utilities, you see it every day, there's various departments, and their interactions usually aren't synced up all that well. You start looking at the data within the utilities, and there's all

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these silos. And I think even within the water sector itself, everybody gets so focused on what they do on a daily basis that they don't necessarily see the things that are happening around them. And really the only way that we can holistically manage water is to have the engagement of everybody coming together with ideas and solutions. So it's not that everybody in the water sector is going to understand every little detail within the book. But really, the goal is to help get the conversation going across the sector as a whole.

But at the same time, all of the chapters are really approachable. None of them are so highly technical that an everyday individual couldn't read it. That was important piece, as well. I think when I was working with all the authors, I wanted to make it clear that this was somewhat of a personal essay and reflections on what they've been learning in the water sector. So someone like my mom could read most of the chapters and understand what the hell we were talking about.

Water sometimes can become so complicated and you start getting into these highly technical discussions that it just turns people off. And the only way we can engage the general public is by talking to them as individuals and sharing with them the ideas in a manner that they can understand. The book isn't dumbed down in any way, shape or form. It's just incredibly approachable. The focus is for water utilities and water professionals and engineers and consultancies. But really, anyone who's interested in water could probably learn a lot from this book.

Dave: Terrific. And you've pledged a donation for pre-orders. Tell us a little about that.

Chris: Yes I have. So one of the big things with this book is I want to give back to the water community in general. Most of this book is focused more on the commercial side of it and the municipal side of it. But one of the things I wanted to do especially with the pre-release was donate to Water for People, which is an international charity based in Denver and spawned from AWWA. It's a really great group of individuals. Ned Breslin is absolutely amazing as their executive director. They do some great stuff across the world. So I wanted to find an opportunity to give back to them.

So basically, half of the proceeds from the pre-order I will be donating to Water for People. So I've got another six weeks or so to accumulate what I can. So we're pushing really hard on the pre-release side. And basically what that means to me is, I don't really make any money off of the book. Most of that money is going to Water for People. I think that's great. I think it's great that all of the authors were able to contribute to this book. We were able to do it in a short timeframe. And I'm really excited about the fact that I can actually give back to something like Water for People to change not just what we're doing here in the U.S. or North America but really have a meaningful impact in the rest of the world.

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Dave: Awesome, great job. That's the least I can say because you've really taken a great idea and planted the seed and actually grown it. So terrific. Chris, where can folks go to find out more about you and all these different things you've got your fingers in?

Chris: The Water Innovation Project has its own website, and it's www.waterinnovationproject.com. And the book itself has its own website, as well. So the book *Damned If We Don't*, the website is www.wateranthology.com. And if you go to the Water Anthology website, you can see where to pre-order the book, you can register online and get access to a couple pre-released chapters that you were referring to earlier, and soon, we're going to have some video interviews with some of the other authors, and you can also stay up to date when other books are being published. It's a really nice website. There's some cool stuff on there. I'd recommend you go check it out.

Dave: I'll second that. Chris, thanks again for your time. You were awesome, really appreciate it. And we'll talk to you soon.

Chris: I appreciate it, David. Thank you very much.

Dave: Bye.

Dave: That was my interview with Chris Peacock, who's doing a great job with water innovation.

Here a couple takeaways from the interview. First, water innovation is accelerating. Water utilities are making more and better use of data. Not all utilities mind you, but I see the rate of adoption increasing and that's a good thing. Using data to make better decisions means a more efficient utility and a happier and hopefully better educated customer base.

My next takeaway is the passion Chris brings to the industry. He started the Water Innovation Project in 2013 and already has two spin-off projects, H2.0 and the book he's publishing. How many people can say they've accomplished that much? I admire Chris' passion and I see similar instances of passion throughout the water industry. It's one of the great things about water – the people in the industry are very dedicated and caring, as a general rule.

Well, you can check the Show Notes out for this session at <http://thewatervalues.com/pod31>. And please don't be bashful in letting me know what interested you about the interview by leaving a comment on the Show Notes or by emailing me at david@thewatervalues.com. You can also tweet at me @DTM1993. And don't forget to rate and please review the podcast on iTunes, Stitcher and other podcast directories. And please don't forget to tell your friends and

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colleagues about the podcast and to sign up for The Water Values Newsletter, which can be done at <http://thewatervalues.com>.

And don't forget to contact me if you'll be at the National Association of Water Companies' Water Summit next week, or the Global Water Intelligence American Water Summit at the end of October. Would love to meet up with you at those conferences.

In closing, please remember to keep the core message of The Water Values Podcast in mind as you go about your daily business. Water is our most valuable resource. So please join me by going out into the world and acting like it.

Outro: You've been listening to The Water Values Podcast. Thank you for spending some of your day with my dad and me.

Dave: Thank you for tuning in to the disclaimer. I'm a lawyer licensed in Colorado and Indiana. And nothing in this podcast should be taken as providing legal advice or as establishing an attorney-client relationship with you or with anyone else. Additionally, nothing in this podcast should be considered a solicitation for professional employment. I'm just a lawyer that finds water issues interesting and that believes greater public education is needed about water issues. And that includes enhancing my own education about water issues because no one knows everything about water.