Murat Ulasir (OHM Advisors): Welcome to the show "Advancing Communities: Thinking That Enhances the World Around Us", brought to you by OHM Advisors. I am Murat Ulasir with OHM Advisors. I have been with the firm for more than a decade and I am the Infrastructure Asset Planning Specialist.

I am here today with Brad Campbell. He is the General Manager of the North American Division of Assetic, a leading strategic asset management software and service provider. Brad and I today would like to talk about the challenges that we here in the U.S. are facing with regards to our infrastructure and how Brad looks at it more from the global perspective, I should say. Hello, Brad.

Brad Campbell (Assetic): Hi, Murat. How are you? It's a pleasure to be here. Thanks for having me in the podcast.

Murat: Absolutely. I am delighted to be able to have this opportunity with you. Brad, what I'm curious to ask you about is this. We, here in Michigan, certainly have been exposed to a crisis. The American Water Works Association, in collaboration with other agencies, has evaluated Michigan's infrastructure ranging from water, sewer, dams, bridges, roads; and in the end, they slapped the grade on us and that grade is unfortunately nothing to brag about. It's a D. In addition, the notion is that if we wanted to go from D to an A, we have to spend in the range of $3.8 some billion. When you look at it, coming from the outside, what are your thoughts?

Brad: It's interesting. It's certainly not a new problem and it's certainly not a Michigan problem or United States problem. We've dealt with this. We've been dealing with this in Australia and we're seeing it in the U.K. and Canada, as well. It's definitely a global problem and it's in the news all the time at the moment. Especially with huge amounts of infrastructure being built 30 years ago, 40 years ago, 50 years ago, it's really coming to bite us now and we're starting to understand that, especially with the current crunch on budget dollars.

Murat: Oh, yeah. Interestingly enough, as you were talking about this problem perhaps not necessarily starting back in the '60s, but some of the foundations perhaps were laid back then. I recently looked at a statistic which was striking to me. Back in the '60s, the amount of infrastructure dollars that were spent in this country was the equivalent of three-some

percentage points of the gross domestic product of the country back then. Since then it has tapered off significantly. There is a gap developing, of course.

The question then becomes: is the answer then really to open up the coffers and somehow start spending more money? I don't know. Is there a different way of looking at this problem?

Brad: Absolutely. The answer is certainly more money. That would be terrific, but the reality is that as the infrastructure gap arises, we have a few choices, and one of those being more money. Another one being that we raise taxes, and then your third one being a reduction in the levels of service that we provide.

None of those three solutions are really realistic. We're not going to all of a sudden have big infrastructure, spending the money simply not there. As councilors, mayors, politicians, we don't really want to raise taxes. Not only is it politically difficult; it also slows the economy. We don't necessarily want to be doing that. Reducing the levels of service that are being provided by these infrastructures assets is happening anyway.

Murat: So are we doomed or what? What are you saying?

Brad: What we found in our last ten years in the Australian market is we've come across a paradigm shift in asset management itself. If you allow me, I'll tell you a little story about when I first started in asset management, my first capital budget that I had to be involved in trying to develop with a small council in Australia. We actually got on the bus with the councilors and the mayor, and that was largely consisted of a group of "cockies" and some businessmen.

Murat: Nice. Quite the combo. I'm curious to hear the rest of the story.

Brad: Do you understand the term "cocky"?

Murat: Would you like to elaborate?

Brad: It's a farmer.

Murat: Okay, okay!

Brad: We got on the bus and we headed around the local government. The engineers on the bus would take us through the areas that they thought needed significant improvement or needed to be included in the capital budget. The farmers would then direct us past their properties and point out the problems that they had. The councilmen and the businessmen would take us past their places.

In the end, that was effectively how the capital budget was developed by that method. There was nothing incorrect with that method. There's the council, the elected members, and they had to determine the best way of developing their capital works plan. Not incorrect, but that was more of an art.

What we're looking at now is developing a science and we've done that over the last ten years. But all industries have done that. If you look around now, you'd see that. Data collection techniques now vastly improved from where they were in the past. Our understanding of the degradation profiles within different asset categories and asset classes and asset types is so much stronger than what it was in the past. Our data collection, our asset inventories, our understandings of what levels of service we are trying to provide are all combining to give us the basis of what we term 'strategic asset management'.

In Australia, some of the tools that we've developed take that strategic asset management, take the engineering knowledge, take the accounting knowledge and put it into an optimization tool that allows us to achieve the aim of asset management – which is to achieve the level of service we want to provide at the lowest possible cost. That's the answer. If there's no more money, you may just spend that amount of money in the best possible way to get your best outcomes.

Murat: This is really interesting. I think it deserves repeating and it deserves underlining in some ways. From what I hear you saying, the answer to the problem we are facing is not necessarily in spending more money, but in optimizing your current spending. That's the shift.

In looking at the tail-end of the problem and saying, when everything fails, in order to get it up to where it needs to be, you spend this much money, you're actually saying, "Oh, wait a minute. Why look at the total collapse of the infrastructure before you decide on your spending? We have a certain amount of money – optimize it."

Brad: Absolutely. Optimize is the term. Strategic asset management optimization of our asset spending is key to what we're trying to do here. As engineers and as financial advisors, we understand that the longer we wait to spend money on assets, the more expensive they're going to be.

Levels of service start to come into here. Can we afford to let certain assets that are not critical last longer? Can we afford to continue to put heavy maintenance programs in there so that they last longer, so that we can spend money on assets that are further up the degradation path which is cheaper?

Let me give you an example. If I have $10,000 in my budget and I have a certain amount of assets that are going to cost me $500 to fix, but I also have a certain amount of assets up the chain that are going to cost me $10 to fix and so on and so forth, how do I best spend that $10,000? Do I spend it on 20 assets for $500 in the worst-case scenario, or do I look at the levels of service? Do I look at the optimization? Can I package that all up and ask a software system to say how I best spend that money and reduce the consumption of my assets?

Just one more point before you ask your next question. If an asset drops from that $10 to the $500, automatically I've lost $450 straight away and assets will always move down that path. That's what we're talking about. We have case studies within Australia that have managed to reduce the rate of consumption for their assets significantly saving you money.

Murat: I understand the paradigm shift. I kind of like the notion of taking our eye off the disaster to look at it more from the preventative side of things and from an optimization view. At the same time, I don't believe we are necessarily talking rocket science here. Optimization, if somebody were to think of it and say, "Wait a minute, I don't have a PhD in aeronautics or some optimization algorithm. Can I do this with a spreadsheet?" Brad, are there some tools available that are simple, easy-to-use visuals that you can put already available data into it, and with some intuitive input do a little optimization routine and get a good result? Is there something available out there?

Brad: Absolutely. Assetic provides a range of software solutions for asset management, but in particular, our real point of difference is our optimization tool called Assetic myPredictor. This is a tool that takes levels of service into account. It allows you to identify a target level of service. If I want to maintain a certain section of my community, if I want to maintain their roads or water to a defined level of service, it can predict how much that's going to cost. It can then

compare that to the current budget. The real benefit is that it can then show, if I spend this amount of money, the condition of my assets in a certain period of time.

What if I said to you that I can tell you what that is going to look like in ten years' time? What if I said to the councilors, "If you reduce my budget by 20% or by 5%, I can tell you what that's going to be in five years' time, in ten years' time"? If you can put these answers, if you can put the future in front of the decision-makers, it allows them to say, "Okay."

In the past, it's been an easy decision to reduce the infrastructure spending. If we can make that a more difficult decision for decision-makers, or a more enlightened decision for decision-makers, then it allows them to say, "Okay. If I'm going to reduce spending, that's what's going to happen so that I have to be okay with that. If I can increase spending or if I can make sure that we spend it in the most appropriate way, then I have the information to make those strong decisions." That's what the software does.

Asset management has been happening for 100 years. Engineers are good at it and finance people are good at it. What the asset management itself is doing is trying to take those decisions and present it in a way where decision-makers are forced to look at what's happening in the future.

Murat: Wow. Very interesting. In wrapping up this podcast, what I understand you say is, firstly, that this problem that the state of Michigan is facing is not necessarily a problem confined to the state. It's more of a global problem.

Second, we have to look at this problem differently. This is where the paradigm shift comes into being. It's not about spending more money. It's about optimizing the level of spending that you have.

Thirdly, what you're saying is there is an emerging set of tools that are becoming available – smart technology, smart tools. We have now robots that you can put into the sanitary sewer system and it does imaging of your entire sanitary sewer system. Then you're saying take it and put it into a smart tool like Assetic or similar emerging technology. Tools are becoming more and more available, so let's take advantage of them, is basically what's you're saying.

Brad: Absolutely. The infrastructure gap is real. If we just look at the massive numbers that are out there, it's overwhelming. But there are ways to deal with it and the technologies you're talking about are out there. They're available.

Murat: Wow. We started the podcast with a dooming message, but we emerged from the podcast with some hopeful science. Brad, thank you very much for your time and sharing your thoughts with us.

Brad: Thanks, Murat. It's been a pleasure.

Murat: Thank you.