NWX-DOC-NTIA-OTIA

Moderator: Jean Rice
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Jean Rice: First, we're going to have you put in the chat box any questions on the right – your questions. And, as you think of them, please put them in, but we'll be addressing them at the end of the session.

I also wanted to let you know that there will be a transcript and an audio recording of the session, and it will be available on BroadbandUSA's website within seven days after this webinar under Event/Past Events tab.

Finally, we hope you'll visit our BroadbandUSA website for information about technical assistance program including useful guides, products, publications, and other tools that can assist you with planning, funding and implementing your broadband projects.

The newest addition to our website was, I'm sure you'll find interesting, are the permitting section for Federal permitting as well as the American Broadband Initiative Milestones Report both under the Federal tab. Next slide.

So today, you know, we're focusing on how regions can have transformative impacts. You know, together, local governments, regional government,

companies, universities, non-profits are pulling together to work on ideas that can help with economic development, health and all of these items on this list.

And as you can see, depending on where you are, smart agricultural might be most important maybe smart water. All of those issues are the kind of things that really do kind of go beyond traditional city or county or other boundaries. And so, it's also the kind of project that takes a real collective effort from multiple sectors to see things progress. Next slide, please.

In July, NTIA and the National Institute of Standards and Technology and the National Association of Regional Councils and 10 smart regions started a new Global Cities Team Challenge initiative called The Smart Regions Collaborative. And like the broader Global Cities Team Challenge, the collaborative facilitates multi-stakeholder and multi-sector collaboration. The collaborative kind of elevates that smart communities conversation to the regional level.

It encourages the formation of teams that span across jurisdictions, sectors, and disciplines to find ways to work together to launch, manage and grow projects that will address issues that impact an entire region. So you see that the regions listed here, they are from all parts of the US and we have a few that aren't listed that are just working on getting the stakeholders ready to kick off the smart region. Next slide, please.

More broadly, the GCTC Smart Regions Collaborative seeks to share with local regional leaders insight into how regional process smart planning is critical to reach people in all types of communities. You have the public/private partnerships under this initiative really strive to leave no community behind. Next slide.

You know, whether the community is just starting up and brainstorming or looking at more a plan of action or starting implementations, it seeks to drive further influence and momentum for smart region-related projects. And, within the Collaborative, people do a great deal of peer-to-peer networking so that they can work with each other on relevant problems that cost.

You know, all kinds of regions in terms of stakeholder engagement, procurement, and other issues – governance – they're working on it together. And they also want to have available technical assistance and others who can come in and take a look and get some assistance as they go forward. Next slide, please.

There's just a variety of regions. Just to give you some ideas on additional ones. We have some that are working on Smart Transportation and Public Safety like this one in Lake Tahoe with the region being in two states – Nevada – parts of those two states – Nevada and California. Next slide.

And an example of a regional rural focused project, we have the Wabash Heartland Regional Initiative on Smart Agriculture and Manufacturing. And that's comprised of a 10-county area with Purdue University heading the innovation and IB Tech working on workforce development. Next slide, please.

In Colorado, this is the region that has 22 cities involved in Colorado along with National Lab and a number of companies working on how AI can assist smart cities in a community effort. So, we are also going to broaden these other regions as well. Eric Drummond, CEO of the Innovation Corridor, was scheduled to discuss this region.

But unfortunately had a family emergency which has called him away and he will not be able to join us. If you are interested in information about his region or other regions that we are talking about here today or participating in the Smart Regions Collaborative, please let us know.

But know we're going to go – next slide – to our first speaker who is Mark Fisher. Mark became the President and CEO of The Council of the Great Lakes Region in 2014. Prior to joining the Council, he served as Foreign Policy Advisor in Privy Council Office, which supports the Prime Minister of Canada and Federal Cabinet with focus on advancing Canada's interest in North America and the Asia-Pacific region.

Mark has had extensive experience advising senior decision-makers on the range of social, economic and environmental issues in government, business and nonprofit sector. In addition to council he is an elected school board trustee and a member of the International Joint Commissions Great Lakes Water Quality Board.

Okay, let me turn it over to you, Mark.

Mark Fisher: Thanks, Jean, and thank you for that kind introduction and the invitation to participate in the webinar today. And, I want to thank you for your leadership and inviting us to be part of the inaugural Smart Regions approach and the direction and advice that you've given us today to date.

And, hopefully, with my time today, I'll be able to explain a little bit about The Council of the Great Lakes Region and sort of who we are and what we do and, more specifically, our Smart Sustainable Great Lakes City's Initiative and our cluster and where that cluster is going in terms of its development. Next slide, please, Chris.

And so, just a little bit about the Council. So, The Council of the Great Lakes Region was formed in 2013. It's a unique bi-national organization that covers eight Great Lake states, New York to Minnesota, as well as the community and providences of Ontario and Quebec. And, our overarching vision is to really try and create the most prosperous, innovative, sustainable, and welcoming region in the world. And, we fulfill that mandate by undertaking three principle activities.

We serve as a connector and a convenor in bringing together the regions' diverse interests and perspectives whether that be from all levels of government, industry, academia, and the broader nonprofit sector. We also undertake evidence-based public policy and research and, you know, trying to find solutions to the regions' most pressing socio-economic and environmental challenges.

And then thirdly as an organization, we bring different interests together to create a stronger regional voice in influence the decisions that affect the regions' long-term competitiveness and sustainability. Next slide, please.

And I think when you think about the Great Lakes mega region it is very much a key driver of North America's economic growth and sustainability. When you look at some of the metrics on the slide, you know, the Great Lakes themselves represent roughly 21% of the world's surface freshwater. In fact, in terms of North America, it's roughly 84% of North America's surface freshwater.

The region itself provides roughly – or supports roughly – 51 million jobs or one-third of the combined US and Canadian workforce. It's a region that's home to 107 million people, again, across eight states, two provinces and in

fact, if the region was a country, it would be the 12the largest county in the world by population.

And, most importantly, you know, with economic output estimated at roughly $6 trillion in 2017, if you were to put this region together as a country it would represent roughly the third largest economy in the world behind the United States and China. And so, very much an important economic region in the United States and Canada, North America, and the world. Next slide, please.

And so, in 2019, you know, working with Paul Carlson in Ohio, the city of Defiance and I know that Jeff Leonard and Jennifer English are on the line as well as Mark Zeller, we launched the Smart Sustainable Great Lakes City cluster which aims to create a really unique bi-national platform that will allow the region to collaborate in co-developing and testing protocols and, you know, looking at supporting the deployment of smart solutions in an open regional environment.

You know, it's a cluster that aims to support the scaling of smart solutions and being able to share best practice and lessons learned in a non-commercial sandbox. You know, they've given the size and scope of the region in terms of its cities, you know, the cluster also hopes to be a place where we can take advantage of shared investment and procurement opportunities.

But also adopting new techniques for measuring and communicating sustainability right from the city level to the Great Lakes level or even right up to the national level. Next slide, please.

And so, within the framework of development the Smart Sustainability Great Lakes City's cluster and – which will start with some visioning and

developing a blueprint and a roadmap for the regional cluster – we have a great opportunity to be partnering with Defiance, Ohio for the first demonstration project.

And, Defiance is a really exciting place for the first project. Again, when you look at the slide, the tri-state Maumee River watershed is the largest in the Great Lakes basin. It covers Michigan, Indiana and Ohio, the Maumee River basin governments spend approximately $1 billion on CSO improvements and combined sewer overflow improvements, improvement that are in many cases mandated by the sates.

But, here's the interesting thing about the Maumee River in Defiance. Roughly 85% of Maumee River's nutrient-loading path is the city of Defiance from upstream nonpoint sources. So, to improve Defiance's drinking water ensuring that investments have impact, the city is shifting its focus from investing in hard infrastructure and CSO infrastructure to source water protection and source water partnerships because, the majority of the nutrients that are impacting Defiance's water are coming from upstream.

And so, this project, the first demonstration project, which is being developed by the city of Defiance, Defiance County – but also industry partners like Sysco and government partners like the Ohio Department of Natural Resources, the Ohio Academic Resource Network, Bowling Green, Ad Tech Insight – this demonstration project will really look at a series of initiatives using smart digital solutions that will help improve our understanding and knowledge of nutrients and how they're finding the way from farm to our rivers and our watersheds in an effort to do a much better job of sort of managing nutrients in the agricultural process. Next slide, please.

And Defiance in Ohio are really in an ideal location for the first pilot project because Governor Mike DeWine has made two things top priority in his agenda. First being harmful algae blooms in Lake Eerie, and the second one being statewide broadband.

And, there are a number of initiatives that the government has been pursuing early on in its mandate. From the H20 initiative which is focused on water quality funding to innovate Ohio which provides some funding for broadband, Results Ohio which is leveraging private sector funding to achieve results, and the USDA Farm Bill which is supporting rural broadband funding.

So, between the government support and the work that the city of Defiance is doing with its many partners, you know, again both the state and the city really are an ideal partner in terms of developing this demonstration project which we hope will be scalable, you know, across the Great Lakes region and being connected to a much wider community in terms of sharing best practices and lessons learned and how you scale smart digital solutions in that nexus between water and agriculture. Next slide, please.

So, as you can see, there are many partners associated with this pilot project. I touched on some of them earlier. Again, from the city of Defiance, Nature Conservancy, The Great Lakes Commission, you know, looking at the University of Toledo, the Tri-State Watershed Alliance, and, you know, I think that that will be a key to this project's success – being able to leverage and connect to the many strengths and assets that they partners have and really trying to work at these problems in a collective, collaborative way and trying to find meaningful solutions to these problems but also combining investments and insights to make sure that we can get to where we want to go faster in addressing some of these regional problems. Next slide, please.

And so, as Jeff Leonard said quite aptly at the launch of the Sustainable Great Lakes City's cluster in DC last year, so big challenges require broader and more strategic thinking on multiple fronts and they believe that these innovative and collaborative efforts will lead to better outcomes for water quality not just in Defiance but throughout the Great Lakes region.

The city of Defiance is dedicated to working closely with the Council of the Great Lakes Region and Defiance County in order to protect water quality while supporting the local economy and agriculture in our region. And, we're very pleased to have Jeff and the city of Defiance as core partners early on in the development of our cluster. Next slide, please.

So, in terms of some other priority areas of focus for the cluster, obviously we're starting with again the nexus between agriculture and water. But, you know, just given the makeup of the region we see the cluster extending into areas of advanced manufacturing but also energy systems and transportation.

How do we use smart technologies at the border in tracking and monitoring the flow of people and goods across the border in the most efficient and secure way but also, again, looking at how do we support and measure sustainability throughout the region? Next slide, please.

So, just in terms of next steps, I think compared to other clusters we're still very much early on in our development process. And so, we're working to secure members and partners and, you know, looking at forming steering committees which will then drive the development of a cluster, strategy and a multi-year action plan to really then set a direction for this cluster.

And, much like most other initiatives and clusters, you know, we're also looking at how we'll procure funding to start scale and sustain the cluster. But

more importantly, also to see some of the demonstration projects like the one in Defiance.

You know, in addition to doing some of that groundwork, we'll continue to promote and scale the Defiance pilot and invite new collaborators and funders to support the project. And we'd certainly be happy to share more information with those participating on the call if you'd like to learn mor about how you can participate and support that initiative.

And, then we'll also be into the fall launching Smart Sustainable Great Lakes City's webinar series to really share best practices. And so, we know we have a lot of cities in the region right now that are already active in the Smart City space whether it's the city of Hamilton in Ontario or the city of Schenectady in New York to some of our bigger cities like New York and Chicago and Toronto.

There's lots of experiences that we can share and so, you know, as part of the development of the cluster, you know, the webinar series will certainly help us bring people together but more importantly to share best practices and lessons learned as the cluster forms and develops and moves ahead. Next slide, please.

And so, that just in closing, you know, we're very excited about the opportunity to be one of the inaugural clusters. We feel that the Great Lakes region itself, you know, both in terms of its economic and environment importance but also its bi-national nature really create a unique opportunity to look at how we can create not only sustainable communities – smart communities – but also Sustainable Smart Great Lakes and we're very much looking forward to working with the GCTC and NIST and many other partners to move this cluster forward.

And, if you'd like to learn more about the initiative, my contact information is provided. And, you can visit our website at councilgreatlakesregion.org. So, with that Jean, I'll finish there, and I'll turn it back to you.

Jean: Thanks, Mark. I appreciate – what a great presentation. And, I really do have to give a shout out to Defiance for their work on the initial piece, because they certainly brought a lot of partners in, and so the council region's off to a good start.

But, Mark, I was going to ask you because a lot of similar regions are working with regional councils now, what do you think the benefits are for a group that wants to start a region for working with a regional council?

Mark Fisher: Yes. No, great question, Jean. I think, you know, obviously, I think the benefit that we provide is being a place where a lot of people can easily connect and collaborate and to think through, you know, some of these complex challenges that are not only facing the region but facing every city, every community across the Great Lakes.

And, you know, I have often found that, you know, once you start exploring a challenge you often discover that somebody else if facing the same issues – the same challenge – and, perhaps going down their own path of discovery and exploration in terms of that issue.

So, you know, for the council I think we provide, again, that place where people can learn and collaborate and hopefully try to come up with solutions and responses to these challenges in a way that is perhaps on a faster timeline and perhaps in a way that really leverages I think some of the unique strengths and assets that might be out there in a larger ecosystem.

And so, its, you know for those on the call who are thinking about participating either in a smart regions cluster or, you know, these kind of collaboratives, you know, I'd certainly encourage you to do it and, you know, sort of add your voice to the conversation.

Jean: Great. Thank you so much. And just as a reminder for those on, if you have any questions, please put it in the box. You can ask them at the end.

Okay, well our next speaker from Arizona is Dominic Papa. He is the Vice President or Smart Safe Initiative with the Arizona Commerce Authority. In this role, he leverages his expertise in emerging governance models to teach partnerships to drive a broad portfolio of Smart States projects. Prior to the Arizona Commerce Authority, he was Executive Director and Co-Founder of the Institute for Digital Progress, an innovation-driven smart driven nonprofit.

In 2019, Dominic founded The Greater Phoenix Smart Region Consortium and applies research and implementation partnerships that allow local governments private industry, academic research institutions work together to design and develop technology, innovated pilots that present solutions to public challenges. That region included 22 cities and towns, higher education, association of government, economic counsel, and digital progress in the Arizona Commerce Authority.

So, let me welcome Dominic.

Dominic Papa: Thanks, Jean. And, Mark, great presentation. I was so glad to be following you. I think we're going to see a lot of similarities between your region and kind of what we're building here in the state of Arizona.

Great to virtually meet everyone. I'm excited to discuss with all of you how we're building the permanent governance and kind of innovation platforms that are going to empower us to really unleash the strength and innovation of our private industry partners.

It's going to allow us to leverage best and brightest minds of our universities as well, so at all times kind of maintaining that transparency, trust and really citizen-centric focus of government. So, we if we could move to the next slide.

There are two main drivers or maybe ideals that have really driven our efforts here in the state of Arizona. The first being that really technologies now more than ever are being leveraged to help solve our most pressing urban issues But, we understand that technology is an incredible means, while it's not an end in and of itself.

And so, that kind of leads us to number two: What makes really a city smart or a region smart is not the technology, not the shiny widget, but it's actually the innovated process of how you tackle challenges and sort of that innovated culture that you're deploying that really, really makes you smart. And so if we can look at the next slide.

You can actually probably skip one more. Not too long ago we took a look around kind of the nation's leading smart cities at the time whether it be San Diego partnering with GE to launch the largest IoT roll out or Dallas launching the Dallas Innovation Alliance with then President Barack Obama, or of course, the City of Columbus winning the DOT grant turning that $40 million grant into a $140 million transportation project. It's going to completely reimagine the way cities function.

And so, we were starting to look at those cities and how were they being so successful and how were they driving these projects. And if you move to the next slide, we also noticed that a lot of these so-called smart cities 2.0 were having some challenges, right? And the main challenge that we really hit on in our region was the inability to really go from pilot to scale.

And so, we thought to ourselves, "With those challenges in mind and understanding kind of the driving factors that I mentioned at the beginning, how were we going to not only compete with the likes of the Columbus, the Dallas, the San Diego? How were we going to compete with them but also how might we usher in a new paradigm for smart cities?"

And so, if you go to the next slide, that's when we started to talk to a lot of the leaders around the cities, the state. We talked to the governor's office. We talked to the mayors. And that's when we realized that, you know, our competitive advantage and our ability to innovate was really all about who we are as a region. Right?

We're the fourth largest county. We've been the fastest growing in population for the last four or five years. You've got the nation's largest public research institution in that of Arizona State University. We've got the nation's largest community college district in the county. We've got 22 fairly large-sized cities all jammed up right next to each other in this greater Phoenix region.

And so, we thought to ourselves, "Could we get those 22 jurisdictions, that university, in a community college district along with other civic institutions and industry partners to start to think together, act together, innovate together and then procure technology and infrastructure together? Could we develop a smart region and start to out-scale everyone else that was focused on building smart cities?" And so, we realized that scale was our competitive advantage

but not only was it our competitive advantage, it was actually the business model to allow us to go from a pilot to a full-scalable solution.

And so, if we move to the next slide, it is out of that vision that The Greater Phoenix Smart Region Consortium was formed that is now called The Connected. And what I like to say because I'm a governance geek, is I'm calling this new the new Smart City 3.0 or the Rise of the Smart Region. And I think I'm in a circle of friends here with that kind of vision.

Because what we designed this to be is really a collaborate applied research and implementation partnership between the governments at all levels, academia, industry partners and in the specific institution but really what was it all about? It was building this first of its kind government technology and innovation do tank.

And really developing that process to use technology to, yes, continuously improve government efficiency – yes, continuously enhance citizen well-being, but really it was all about how do we solve complex problems, urban issues that we were really trying to grapple with.

And so, if we move to the next slide, we established a legal structure to drive this framework forward. And so, the executive team consists of the Arizona Commerce Authority, my institution, the University and Arizona State University, the Greater Phoenix Economic Council, Arizona Institute for Digital Products – this is a nonprofit – and then the Maricopa Association of Governments.

And if we go to the next slide, Mark, I think you're going to like this one. It was designed to be this permanent platform that sat in the region that 24/7,

365 days a year could be leveraged to really drive an innovative way to solve local challenges.

It was supposed to be that innovation engine for the region that moves projects from challenge to solution to scale. And what I really want to focus on here too is the importance that it was designed to ensure that all communities across the region had the tools, the skills and the resources necessary to proceed in this new digital age, right?

We didn't want pockets of dumb. We realized that we had to do this together, all ships rising together. And, so we wanted to create the permanent framework to allow this to happen. And so, we thought to ourselves, "If we build this governance structure, if we built this platform for innovation, the industry partners would come. The university partners would come." Right? We were trying to do our best Kevin Costner: If you build it, they will come.

Well, it worked. Not only did the community college district rally around this vision, the University rallied around this vision, but we were able to recruit some of the best and brightest industry partners in the world to come and join our initiative. So, we were happy to announce that Sprint, Cox, and Dell all joined the Connective as founding members.

And so, if we move to the next slide of course we like to kind of push the envelope here in Arizona so we thought to ourselves, "Could we go further?" Right? We realized if you want to go fast, go alone. If you want to go far, go together. So, we really thought to ourselves, "Could now that we built the smart region and the governance framework around that, how can we build a smart state? Is that even possible? Does it make sense?"

And so, if you move to the next slide, what we've realized is in building the smart region we had created this incredible horizontal platform of collaboration. We realized to ourselves that governments were – had to be very good at a lot of good but they couldn't be good at any one particular vertical. Because local governments, right, they have to be great at a lot of things. They have to provide trash, recycling, police, fire and water. So, they have so many services and it's such a little budget that they couldn't really become experts at any one vertical.

And then we thought to ourselves, "Well, the state is established a little bit differently. They were established to be real vertical experts." Right? We have the Department of Education, the Department of Health, the Department of Transportation. So we thought to ourselves, "Could a smart state really help us drive or leverage the regional platforms so they are sector specific focus and accelerate the commercialization of technologies in key vertical areas.

And so, that was really our approach and vision behind building a smart state. And so we thought to ourselves, "Is this possible?" And then we realized if we move to the next slide that we were already doing it. Right? So, in 2018, our governor, Governor Ducey at the time, established the institute for automated mobility to really drive the acceleration of automated vehicle technologies in the state of Arizona. And move to the next slide, please.

But again, what's exciting is that it didn't start with the technology. Believe it or not, it actually started with the challenge. And the challenge was we realized that the lack of real safety standards out there was slowing down the commercialization of automated vehicle technology and really putting the entire industry at risk.

And so, what we decided to do when you moved to the next slide is we built the Institute for Automated Mobility as a unique public-private partnership to leverage the connective, to drive partnerships that could accelerate the development of these technologies, to solve challenges and really capitalize on unique opportunities.

And so, again, thinking that if we built – that if the government showed the leadership and really built the platform that innovated companies would want to – that wanted to drive change would come. That they would come and it worked out, not only the Intel become one of the founding members but we were very excited last year to announce that State Farm – the nation's largest auto insurer – joined and are actually actively driving projects and pilots on our road.

And so, when we move to the next slide so, we really thought to ourselves, "Why a smart state?" It's because we believe that this technology disruption, it's a global force that we have to harness and confront together. That collaboration is really the next competitive advantage, and this means that every industry, every university and every government at all levels in Arizona really had to step up to help accelerate digital transformation of the entire state.

And so, we realized that we had to build this unified, strong systems approach that created clear, connected, and aligned investment channels. And so, when we move to the next slide, I'm excited to inform all of you that the momentum in Arizona continues to build. That the vision of a smart state through smart regions through smart cities continues to flourish.

And leaders from southern Arizona just established their own smart region initiative with the intention of aligning and connecting to the connective and

the smart state. And so the momentum in Arizona continues to build. The vision continues to build. And we're continuing to move this forward. Next slide, please. So ultimately, I know I speak fast. I apologize. I'm Italian.

There's a lot of passion behind this. But I really want to reiterate that our goal in Arizona is to transform the state into this 21st century proving ground for innovative technologies. But that can really solve real world problems. And so this is the goal.

And so what does this look like in real life? And so if we go to the next page. It's really interesting what's just happened with the rise of Covid, one of the first big challenges that we saw was the inequality of remote education. In students not having the broad brand connectivity it home to really download and complete their homework assignments.

And add onto the fact that places like Starbucks and our libraries were closed through the pandemic, it made it extremely difficult for those students to keep up. We actually saw kids sitting with their backs against the walls of the libraries outside trying to access the Internet from the outside in.

While we were excited to partner with our friends at Cisco who are great friends in helping us develop the smart region, and we're excited to announce a new initiative partnering with the state to expand Wi-Fi Internet access at five of our state libraries.

With the goal of Cisco invested, we're now developing the solution, and we're testing it and prove it at five libraries in order to prove the technology and the requirements with the goal of commercializing and scaling to libraries across the state to, again, help solve the challenge remote learning and digital inequity in education. And so to close up, to summarize, I'd like to leave you

with maybe some inspiration.

Because if you would have asked me maybe five years ago when I was going through my masters in upper management, if building a smart state and aligning it with all levels of government was possible, I would have told you were crazy.

But whether you think you can or you think you can't, you're right. And we're excited to build kind of a first of its kind framework here in Arizona smart campus, smart city, smart region, smart state, to drive solutions to challenges to really advance the acceleration of innovative technologies here in Arizona. So with that, Jean, I'll wrap up and turn it back to you. Thanks, everybody.

Jean: Thanks, Dominic. And what a great presentation. What a great lot of work. And that so great that the southern group has started their own region and they'll be participating in the overall collaboration. Also glad to see that you have been able to act on some of the Covid inclusion issues that we've seen around the country. So that's terrific.

But I wanted to ask you this. You know, you're talking about smart states 4. 0. And your state is one of the leaders in move into a smart state arena. What prompted this? Was it the scaling problem people were having? What was it that prompted the state to look at, kind of, start smart state solutions?

Dominic: Definitely. There's probably two things there. The scaling is definitely one. But then it's the ability to help all cities within Arizona. Right? Help everyone solves challenges to issues that they are facing. So what we realize early and often that these urban challenges, cross municipal boundaries. They cross state boundaries.

They cross jurisdictional boundaries. Right? Homelessness doesn't start and stop in the city of Phoenix. It doesn't start and stop in the greater Phoenix region, but it's experienced by cities everywhere. So really, the State was interested in not only collaborating with the regions but collaborating with the regions to solve challenges that could help all cities within Arizona. Right?

So if the region, if the Phoenix region, if we connect to solve issue around remote student learning, could we then take that solution, import it to the City of Page, a small rural community in north Arizona, to help them solve that challenge as well.

So I would say the ability to help all cities and, of course, the idea that collaboration is our new competitive advantage, and we can no longer afford to work in silos with all of us facing these massive budget shortfalls because of Covid, now more than ever, we need to figure out how to collaborate.

And that means all levels of government, that means cross sector, that means cross industry and so it was really with the connective piece to really drive innovation forward for all of us.

Jean: Great. Thank you so much, Dominic. Just a reminder, folks, if you have any questions, additional questions, please type them in. And let me then go to our final speaker, Jonathan Fink. He's a professor of geology and the Director of the Digital Test Center at Portland State University.

He's also a visiting professor at the University of British Columbia. That's a lot of hats, Jonathan, but moving on. Where he co-directs the Urban Analytics Cooperative. Which seeks to help build a technology corridor between Vancouver and Portland.

He's previously with VP for research at Portland State University and Arizona State University, he's a board member of the Smithsonian Environmental Research Center, and the Nature Conservancy's Oregon chapter, and the Oregon Museum of Science and Industry. And Jonathan's also been very active in the transportation cluster plus GCTC. So Jonathan, I'll turn it to you.

Jonathan Fink: Thanks, Jean. Can you hear me okay?

Jean: Yes.

Jonathan Fink: Great. Thank you very much for having me. It's kind of ironic for me to be bridging between Mark and Dominic, since the region that I'll be talking about is also a binational region involving the US and Canada. And 12 years or so I could have probably given Dominic's talk because I was Vice President for Research for ten years at Arizona State. And it was really nice to see the progress that's happened since I left to move to Oregon.

So as we talk about smart regions, there are two end member cases that we could be discussing. One is the regional aspect, and the other is the smart and the smart city aspect. Our involvement in this initiative grows out of our participation with the global city team's challenges.

And this program. So I'm going to start focusing initially in this presentation on the city piece and how we evaluate things that can make cities work better for their residents, and then scale up to talking about the Cascadia region. So next slide. Please. Next one. Hello?

Jean: I'd say keep going.

Jonathan Fink: Can you hear me?

Jean: Yes.   Go ahead.

Jonathan Fink: Yeah. Next slide. Hello?

Jean: Chris maybe having a problem. Sometimes it does jam up so if you don't
                   mind, just keep going through the presentation.

Jonathan Fink: Oh, okay. All right. Fine. So what I was going to talk about is what do we
                   mean by a smart city or a digital city. And the idea that there are both positive
                   and negative aspects bringing technology into the urban environment.

                   So the positive ones are that we can improve city operations, we can make
                   resources more accessible, and get better health outcomes, which is something
                   we're focused on quite a bit right now around the world, reduce carbon
                   emissions and so on.

                   But the negative aspects of bringing technologies into cities are that there are
                   privacy issues. There are questions about monopolization. Who owns the
                   data? How equitable is the access to the new services that can be provided?

                   And so this all boils down to three questions that we can ask. Which are
                   three. Back up, please. That one. Perfect. So how do cities evaluate all the
                   different options they have? Because there are so many technologies that can
                   be brought into the urban environment.

                   And the second, how do those of us in the public assess which ones are the
                   ones that we really want to support. Then final, how does the private sector

align the various components that they are designing with each other to meet these needs of both the cities and the public.

We'll go to the next one. Hopefully. Well, what the next one is going to say is that what all three of these need is for the technology to be tested in some way. And so to have some more limited places to evaluate these things before hoisted on the public at large.

Next slide. So our approach is to use campuses as smart city test beds. And these are academy campuses, nonprofit campuses, government campuses. Private sector campuses. We are creating a network of campuses in the Pacific Northwest. We have five so far.

Next slide. And this slide shows the first three. So the three that you see here, Portland State University on the left, the Oregon Museum of Science and Industry in the upper right, and the University of British Columbia in the lower right.

And what we have here is a range of sizes, but what they all have in common is there's a single owner and there's more or less a single purpose for each of these campuses, and we can bring in a number of technologies, see how they work in these places before we distribute them across the city or across the region more broadly.

And but for this to work, it only works if we're working in partnership with the city government. So in each case, both in Vancouver and in Portland, also, another test bed in Seattle, we're working with local governments to make sure that the priorities we work on are the ones that the city is also in favor of. Next one.

So, we currently have, well, we started out with three test beds on the left. Portland State, Oregon Museum of Science and Industry, University of British Columbia. It this year, we have added the Portland airport and University of Washington Seattle campus. We're in discussions with Microsoft, the Oregon Zoo and the Oregon University as future campuses.

Next slide. And so the basic rational, which I've already discussed, is to test before we deploy to partner with cities, to use a range of types of campuses to keep our focus on this particular geography, this region, which I'll talk about more at the end. We're looking at questions about replicability.

So as Dominic mentioned, or maybe Mark did, having just a series of pilots that don't go anywhere doesn't really serve anybody's needs. We need to figure out how the pilots can be scaled up. And so we're trying to do this across a number of different application areas.

And one of the main areas that we're focusing on in this meaning is accessibility. It's specifically for people with disabilities. How do they take advantage much technology to improve their ability to move through urban environments?

Next one. So we have a set of large corporate partners that we're involved with. Several of these are through the city governments. So Intel, AT&T and GE have been working with the city of Portland on a smart innovation project in Portland. We're working with Cisco and Siemens on a building operations project.

Roger's communication which is a large telecom company in Canada has a 5G networks pilot set up on the University of British Columbia campuses that we're working with. Microsoft has provided a lot of funding for the regional

integration across Cascadia, and then we're working with the Pacific
Northwest National Lab and Verizon on some projects.

Next one. But in addition to these large players, we're also working with a
dozen or more start-ups that have a whole range of applications that they are
trying to implement. And each of these companies has one specific
application that their trying to develop, one sector that their focused on. Part
of what we're doing with our test bed is to bring groups of these companies
together to say, okay, you're focusing on traffic management.

Or you're focusing on how people move around the city in wheelchairs.
You're looking at building management systems. Can we combine what
you're doing and come up with some additional new applications? And we've
had some really exciting discussions involving many of these start-ups.

Next one. So, the basic idea is that we have locations on our campuses where
we're bringing in a number of different applications, co locating them, in part
so that we can look for these synergies, but also in part so that we can start to
educate the public and get public feedback about what is it we're doing.

So if we have three or four or five of these applications that are all being
worked out in one area, we can put some signage and we can have some
digital ways of interacting with the public to see what their views are, see how
they feel about these applications, which ones they think work, which ones
don't.

Next one. So this one is on the Portland State campus. These are some of the
applications from the earlier slides that we're trying to locate on one area in
downtown Portland. Next slide. And I'm going to just give you two examples

here. One is Numana which is a company that has video monitoring of traffic. And what you see is what the output from the Numana sensor would be.

It's a series of tracks, different colors represent bicycles, pedestrians, cars, buses, trucks, and one of the questions that we're looking at is can you see when you have near collisions of vehicles and pedestrians or vehicles and bicycles. We have excellent data what somebody gets hit by a car. We have very poor data on when they almost get hit by a car. And so this is kind of application we could do with the Numana software and hardware. Next one.

And then, another company is called Access Map which comes out of the University of Washington. And this is an over lay for a map application that shows people in wheelchairs who cannot go up or down steep slopes how to get from point A to point B without having to do that. So the photo on the right shows downtown Seattle.

It's very steep. If a person in the wheelchair needed to get from this corner that you're seeing to the next street up, the app would tell them, well, go to one block over, there's a building where you can ride an elevator up and come out on the next floor.

So these are the kinds of application that we're working with and that we're testing on our various campuses. Next one. So this goes back I think to Dominic's last slide. We can look at a whole range of scales from the individual household to a block to a neighborhood campus to a city to a region to a larger multimetro region or a megalopolis.

And with each scales as you go up, it becomes we can have more contact. But it's harder to actually get things done. And I'll skip this one. Just move to the next a couple of slides. Skip this one too, please.

So finally, what we're trying to do now in the Cascadia region is to link initiatives, not just the digital test bed center but a whole variety of projects that involve Portland, Seattle, and Vancouver, involve governments and universities across the region, to see how we can get this diverse but in some ways homogenous region to start functioning more as a single entity.

Next slide. So, it's my last slide. So Vancouver, Seattle, and Portland are distinct, but they also have a lot of similarities. So in contrast perhaps to the Great Lakes region where you have everybody is linked together by their proximity to the great lakes, here we have quite common, we have common political and social and cultural aspects.

There's a lot of focus on the environment. A lot of technology through the companies that are shown in the bottom on the slide here. Also speaking as a geologist, each of these cities has a beautiful active volcano in its background.

And we are in a very geologically unstable area where Covid 19 is a problem today. The Cascadia earthquake will be the biggest problem that we face in the future. So there maybe one more slide. So the point of all this is that we have this specific project of linking smart city testing on campuses throughout the region as one of the ways to knit the region together.

The potential of Portland Seattle and Vancouver linked together is really great as a test bed region because there is so much innovation that is located in this region. But we're all very pleased to be part of the national effort or now, international effort, that is what brings us together in this panel. Thank you very much.

Dominic: Jean, you may be on mute.

Jean: Sorry, Jonathan. I was on mute. I want to thank you very much for your presentation. And you just did a terrific job. And I really appreciate how much work you've done to get the University as test beds and have partnerships with the cities and the large companies and the small companies.

I was very interested in the innovation that seemed to be coming out of these smaller companies and I was just wondering. How do you get in touch with them? And how do you kind of foster their innovation in your test beds?

Jonathan Fink: Yeah. Thanks. All of the time we've met through third parties. In particular, the Technology Association of Oregon, and their sister organizations in Seattle and in Vancouver, the Washington Technology Industry Association, and British Columbia Technology Association.

And each city could have a whole range of different companies that they're working with. The ones we have, there's nothing magic about them. They happen to be the ones we met. But our goal would be to have at least one of each kind of application available in each city. And then to see we can link those together.

Jean: That's great. I know that's of interest to a lot of people who want to promote innovation in their regions. Well let me throw out a question for all of you. It seems that all of you are doing a great job trying to get stakeholders engaged.

One of the questions I have is on an on-going basis, how do you keep that kind of engagement switching over to alignment? So that a you can see that they have the same goals as they continue to go forward? And let me go

ahead and start with Dominic on that one.

Dominic: Great. Yeah. That's a great question. What we realized, you know, we actually learned from a mistake. Whether we are spreading the vision about the idea that smart region and the collective front at first, you know, we told them we could get the 22 cities to work together with the University and the industry partners, we could really get this move.

So we got them all to agree to that. Day one. They came in. And we already had a prepared vision and mission statement. Because we thought we know where they wanted to go based on our conversation with them. We immediately were told to slow down. Who was the one that decided allocates vision statement? Who was the one on that vision statement?

So we actually had to stop, go back, and we actually went through a couple of vision mission workshops. With everyone in the room together from day one. And so what really helped us continue the engagement was having everyone kind of co-create and co-develop the vision mission and the impact areas together.

And then move forward with those at hand really helped us to keep the engagement from day one. I think sometimes we think we know what other people want. We think okay, they want to drive innovation. So we know what they're looking for. But really, it's a co-creation process.

You have to engage on everyone from day one around a common goal. To really align them around that common vision to keep people engaged throughout. That's kind of where we were successful.

Jean: Thanks for sharing that. Jonathan?

Jonathan Fink: Can you repeat the question?

Jean: How do you engage your stakeholders and kind of keep them aligned over time?

Jonathan Fink: Yeah. That's an interesting challenge. In part because we're looking at stakeholders across multiple metros that are in two states and a province and two countries, there is no overarching governance structure that can hold them together. I mean in some ways, I'm jealous of what Dominic was talking about in Arizona where he can scale up from the Phoenix area to the state, you still have a state government to work with.

In Cascadia, we're making it up. So we have to really make this a priority which requires a lot of repeat phone calls and e-mails. And it's not a natural thing. I think the benefits make it worthwhile to move in this direction. But funding mechanisms, taxation, political, voting and all, none of them are aligned with our particular regional structure. So we have to work really hard the typical.

Jean: Thanks. Mark?

Mark: Yeah. I think Cascadia, you know, the region really function at two levels. I think for the cluster, one is creating a space where people can develop and share common vision and think some common challenges across a variety of different sectors and issues.

And trying to provide a place where you can share best practices and lessons learned. And those things that are common. And then I think at a finer level

and we're seeing it this with the city of Defiance is how do you create those innovative demonstration projects, those pilots that are trying to solve a unique local problem but also share the approximate promise of being scalable across a larger region like the Great Lakes. Right?

So you think you have to calibrate and sort of recalibrate the interest, depending on the level. Right? And obviously we have seen that, again, with Cascadia and Arizona, there's a whole a bunch of things that can happen in between that larger macro-mega region scale and that local level. So it's a bit much art.

But I think just being in tune to those interests throughout the process I think is important to ensuring you have the connections and the collaborations you need to be successful.

Dominic: Can I jump in there one more time?

Jean: Yeah. Absolutely.

Dominic: I think what made us particularly successful is that we really tried to diversify the funding. So we're actually receiving membership dues from all the cities are paying in. The industry partners are paying in as well, and the university is paying in a yearly sort of fee in order to drive us forward.

So not only do they have skin in the game, but we're not relying solely on one of those. Because what we saw early on is that the very can come in and help subsidize it, but if we're requiring them to continually subsidize it for the long term, they're going to, the interest is going to fade and they're going to walk away. So by making sure each them are paying in a smaller amount but

they're paying it in allowed us to really keep interest in the program.

Jean: That sounds great. One of our regional groups started out at the Pennsylvania Ag Department. They said that the two things they also found were leadership was key because you need to keep it move, and the other thing is that each subgroup have kind of ongoing milestones to work on. Have you found out those to be the case as well? And I'll leave it open.

Mark: Yeah. It's Mark here. I'll start. I think there are always two sides to that coin. Right? It's great to have industry leadership. It's great to have government leadership.

But what we've also seen in the Great Lakes is that that interest and that leadership can ebb and flow. And we've seen some great ideas and some great initiatives started only to stop when someone from the company moves on or that there is a change in administration at the state provincial level or city level.

And so I think some of the value that we provide as a counsel because we are outside of government, but government sits it our table is ensuring that you remain, that you keep the focus in that continuity and driving some of these important initiatives forward.

Otherwise, you could find yourself into an ebb and flow cycle. Which will do more harm than good in trying to build out these kind of projects and clusters.

Jean: Good point. Anything quick Dominic you want to add?

Dominic: I think he hit the nail on the head. We established the connective as a nonprofit organization so it sits outside of government. If it sits in the

community it continues to drive innovation, and technology from the outside in no matter if a mayor changes over or a company representative changes over.

So he hit the nail on the head. That kind of outside entity that can work as a trusted partner for government but not be inside the government is kind of a sweet spot in my mind.

Jean: Okay. Great. Well, thank you. And I want to thank you, the speakers, for today. It was great presentation. And we'd like all of you to interact with us and with them if you're interested in this area. And just a reminder our websites available for the transcripts and the audio within seven days.

And do take advantage of our Technical Assistance Program. Which works on broad brand connectivity, digital inclusion, and adoption and smart cities. And for more information, please e-mail us, call us, and we'll be happy to get back to you. And I thank you all for joining us. And have a great afternoon. Thank you. Bye.

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