**Public Sector Future -- Future of Infrastructure**

**Jeremy Goldberg (Host)**

**Daniel Zarrilli, Special Advisor, Climate & Sustainability at Columbia University in the City of New York (Guest)**

[MUSIC]

**JEREMY GOLDBERG:** Welcome to the Future of Infrastructure. I’m Jeremy Goldberg, Worldwide Director of Critical Infrastructure at Microsoft. And I’m on a journey to learn more about how infrastructure is being built around the world, by talking with public servants, philanthropists, artists and placemakers, who have spent their lives working in the public interest. This is a series to help us build things and plan for the future while putting people first.

Today, my guest is my friend and former colleague. We worked together in New York City Hall during the de Blasio administration, Dan Zarrilli, who is a special advisor on climate and sustainability at Columbia University, and also the former chief climate policy advisor in the New York City mayor’s office.

Dan, so great to hear your voice, to see you. Welcome to the Future of Infrastructure.

**DANIEL ZARRILLI:** Thanks so much for having me here, Jeremy. It’s great to see you.

**JEREMY GOLDBERG:** You know, first, before we really dive into these discussions around infrastructure, congrats on completing the Brooklyn Marathon recently.

**DANIEL ZARRILLI:** Yeah, it’s a no small feat to go 26.2 miles. It was my first marathon. And – and a couple of days later, I feel like I’m still paying the price and – and limping through the workday.

**JEREMY GOLDBERG:** Well, I think it’s the expression of no pain, no gain. And you know –

**DANIEL ZARRILLI:** That’s right.

**JEREMY GOLDBERG:** – obviously, the marathon is in my favorite borough, Brooklyn, but I know you’re a Staten Island native. So why don’t you just start out quickly, what are some of your favorite things about or places to experience in Staten Island for our audience and share with them a little bit.

**DANIEL ZARRILLI:** Oh, for those of you, yeah, who don’t know Staten Island, it’s you know, there’s certainly a lot of stereotypes and I’m sure lots of people have this vision of it as like it’s the Fresh Kills landfill and that’s it. And it couldn’t be further from the truth. It’s really, it’s a great place to be, like being out in nature. There’s the Staten Island greenbelt, which is one of my favorite places in the entire city, miles, and miles of trails in the woods, up in the hills in Staten Island. And I spent a lot of time up there, take my kids there, go for runs. I’d encourage anyone to go check it out.

**JEREMY GOLDBERG:** I love it. I’ve been there. You’re absolutely right, a great amount of green space, outdoors, and just right around the corner from Manhattan.

So as people look at you and understand the work that you’ve done, you’ve got such a compelling career. But I want to give you an opportunity to introduce yourself. And I think what I’m interested in and what the audience would be really interested in is how and why you got into public service. You know, beyond that general desire to improve things, to make an impact, to help people, is there a moment or an event that stands out to you that motivated, your choice to pursue this career in public service?

**DANIEL ZARRILLI:** Well really, I enjoy that the topic today is around infrastructure because I feel like that’s been the driving focus of my career. I’m a – I’m a trained engineer. I’m a professional engineer. I worked for a number of years in the construction industry, and it was clear to me when I was the consultant for the contractor for a bunch of public sector projects, that the decisions, the real decisions obviously get made on the owner side and on the government side.

And when I had the opportunity to make the shift onto the owner side, know the government side of the industry, I jumped at it because it was a place to have great impact on the city I love and the city I live in here in New York City.

And I had the opportunity to join the New York City Economic Development Corporation in 2004 to help manage, oversee, and run the city’s waterfront infrastructure. And so, this is the city’s cruise terminals, ferry landings, heliports a variety of cargo facilities and other maritime infrastructure and transportation infrastructure that served New York City.

And it was a great place to then get onto the public sector side and really have an impact on job creation, economic development, making sure that the systems that serve New Yorkers are functioning well, are improving, and serving the needs of New Yorkers every day.

And that’s what drives me is wanting to improve the city where I live, where my kids are growing up, and to really help make a difference here. And as you know, when – when you do things well in New York City, there’s like this is one of the hardest cities to get things done in.

**JEREMY GOLDBERG:** That’s right. It sure is.

**DANIEL ZARRILLI:** But it’s also when you do that, it has this outsized impact because people notice what happens in New York City. It’s the media capital of the world, all of those sorts of things.

You have this ability to not only do right by New York, but to also shape a global conversation around infrastructure, and certainly we’ll talk a lot about climate change and – and the work we’ve done here in New York City. And so, it’s a great place to work and there’s no better place to be.

[04:59]

**JEREMY GOLDBERG:** Yeah. I mean, and you’re absolutely right. I mean, what happens in New York, right, the world is watching, right? They’re paying attention. New Yorkers obviously are paying attention.

Who knew, if we take it back to 2012, Hurricane Sandy, right, and – and there you are, right, working in New York City, working in government. You have this engineering background. You worked in construction. And we have this catastrophic devastating hurricane that hits the city and the region $70 billion estimated, right, in terms of damage.

And so, I’d love for you to go deeper into the work, right, that you’ve done in the city and that very important work and that moment and that time and standing up the new flood protection in the city after that hurricane.

**DANIEL ZARRILLI:** Yeah, it was a real pivotal moment for me, for my career, and certainly for the – the city in lots of different overlapping ways. You know, after the devastation of the storm and understanding the lives lost and the – you know, the livelihoods upended, we were in a different moment in New York City.

[06:01]

**JEREMY GOLDBERG:** Could you remind the audience a little bit, like what happened with the hurricane, right? And before even getting into like what that response looked like. I mean, time has moved on. It’s ten years, right, since.

**DANIEL ZARRILLI:** It’s going to be ten years in October, which is almost hard to believe. Yeah, New York, Hurricane Sandy, still to this day, is the worst natural disaster that – that we have ever faced. And it was the – you know, it was a storm really like no other. And a lot has been said around the fact that whether it was a hurricane when it hit or when it didn’t. And – and some of that’s almost irrelevant because it was the largest, it was one of the largest storms on record and it pushed a lot of water onto the coast. And so, the dominant damage came from storm surge that had basically was something like nine feet on top of normal high tide that hit New York City.

**JEREMY GOLDBERG:** Amazing.

**DANIEL ZARRILLI:** Was 40% higher than the previous you know, the previous records that had been set decades earlier.

And what that meant was that we had water in parts of the city that had just never seen it before and at record level – record levels, subway systems flooded homes and neighborhoods damaged and destroyed in many parts of our coastal communities, the Rockaway Peninsula, Staten Island, Brooklyn, Lower Manhattan, parts of the Bronx. It was just a totally devastating event. And tragically, 44 lives were lost here in New York City during that event.

You know, of course, there’s the immediate response and recovery efforts and –

[07:35]

**JEREMY GOLDBERG:** And what does that – yeah, what does that look like? I haven’t been through that, right, or I don’t know how many people have, but like what does that look like in those moments?

**DANIEL ZARRILLI:** Well, it’s the life safety recovery efforts. It’s what the NYPD and FDNY are doing – charging into the worst of it to go save lives.

And then there’s the immediate need to work on getting power restored and getting people back in their homes and the housing recovery efforts that need to happen and that have – that went on for years afterwards, in fact.

But what the city did was unique in that, in the sort of aftermath, was to recognize this as a moment not just to make sure that we recover from the storm. Of course, there was lots that needed to happen and that went on for a long time, but that it was a moment to really situate ourselves in this, in this new era of climate change and recognizing that climate change made Hurricane Sandy worse than it otherwise would have been. It was sitting on higher levels of seas.

It was – so there was more damage just because of the fact that we’re now in an era of climate change, that it was Mayor Bloomberg at the time, decided to pull together a task force to look at how we were going to really understand what happened during the storm, what could have happened or what could still happen to us with climate change and really widening our – our view of not just coastal storms, but more intense heat, more intense rainstorms, and the threats that that can bring to New York City.

And then to lay out a comprehensive plan for how we’re going to move forward, how we’re going to invest to reduce those risks and prepare this city for this new era that we’re in.

**JEREMY GOLDBERG:** I mean, Dan, the conversation today, right, ten years later, globally around climate action, climate change, right, there is a broad base of support, awareness that there’s a problem, right, that people have a responsibility, partners, people, governments, enterprise lots of work that to be done.

But like, if we go back ten years and we look at the conversation around climate action and climate change, what was the discussion like? What were people saying, if you could kind of recall, right? There’s this event that takes place. Like, what did this discussion feel like from your point of view, at that point?

**DANIEL ZARRILLI:** There was some pushback at the time that, oh, this isn’t the right moment to be talking about climate change, that we’re in the middle of this disaster. And some people still weren’t making the connection at that point that these are the same conversation, that we’re in a new era of climate change. It’s causing these disasters and making them worse. And this is happening now all over the globe, of course.

But again, back to the point of when things happen in New York City, that people take notice, I think there really was a different reaction because it happened in New York City, because the – you know, the media’s here, the TV cameras are here showing flooding in New York City and all these iconic places that people recognize around the world, that it does really change the perception. It does really change the conversation.

And ten years on now, of course, we are in a much different place with general acceptance that science is real, that climate change is happening, that we need to do something about it in a way that was not part of the mass media conversation or people’s just general conversations around events like that ten years ago. It’s – I think it’s we’re in a much different place.

And not all of it can be attributed to the fact that Hurricane Sandy hit New York City, but I did think that, I do think that spurred the conversation in a – in a very new way.

**JEREMY GOLDBERG:** Right. So, this event happens, right? You painted the picture for us. There’s a response, there’s the reaction, there’s the recovery efforts. There’s a plan that Mayor Bloomberg – Bloomberg puts in place, the work that you’re doing. Obviously, right, not being prepared in terms of the infrastructure in those moments. Like what were the operational challenges when we talk about this flood protection that we’re looking at? Like what were the challenges to implementing, right, the improvements that you faced and – and how did you overcome them?

**DANIEL ZARRILLI:** What’s interesting is that we’re a coastal city. New York City is defined by its harbor. And yet when Hurricane Sandy hit, there was basically zero coastal protections here in New York City, that like for as much as we are part of the harbor, the idea that the –that the ocean and the harbor presented some sort of threat from coastal storms just was not, really was not part of the conversation, and our infrastructure reflected it.

We didn’t have any of those flood protection projects or anything like that here in New York City. We did have certainly robust sand on our beaches, but mostly for recreational purposes, lots of wetland restorations for biodiversity and other things. And they did serve some purpose during the storm, but it wasn’t part of a comprehensive approach.

And so, what we were intending to do at that moment was to then begin standing up a brand new class of infrastructure here in New York City that we’d never had before.

And in some parts of the city, that’s easier than in others. When we want to build out more dunes and integrating those with our boardwalks, like we did in the Rockaway Peninsula, an easier process to develop. But when you get into a place like Lower Manhattan or certainly on parts of the Brooklyn and Queens waterfront on the East River, as different – different ideas for flood protection are being discussed, you’re – you’re doing it in a way where you’re – you’re thinking about putting new infrastructure to serve new purposes on top of an already dense urban environment.

**JEREMY GOLDBERG:** You’re right, that – it’s a mix of that old and new kind of like weaving of together, right? I mean, that’s – that’s what your – your – I think some of your background in construction and engineering helped a bit, too, right?

**DANIEL ZARRILLI:** Hopefully. Hopefully. And like some – some of the important lessons from the past in New York City, when we built out the subway system there are these really like interesting photos of the subway being built out almost through farmland in parts of the – of the city and it was the first thing that got there that enabled the city to grow.

Much like the water, when we built out the water system to upstate forward-thinking infrastructure that enabled the city to grow.

We’re already a built-out city, and now we’re in a position of having to react differently to a changing climate and the threats that that’s throwing at us. And that means we’re building out this infrastructure in very dense places where the layering of infrastructure is already there.

And so, what it means is a much more complicated design process over and around and above transit infrastructure, electric and power infrastructure, water, and sewer infrastructure that’s in place and needs to continue to stay in place to serve New Yorkers.

And nowhere has this been, I think, more complicated than in – in lower Manhattan, in the lower east side, where flood protection projects are being now built out. They’re under construction. They’ve gone through very extensive project development processes, very extensive public engagement processes in order to get to the point of being able to start that construction.

And there’s been a lot of interesting lessons learned on the community engagement, the communication of the challenges that you’re facing and the infrastructure that you’re – you’re working around as you’re building out these projects, that has made it an interesting test case for other things that we need to do here, but also for what other cities are grappling with at the same time.

[TCR 00:15:40]

**JEREMY GOLDBERG:** So, lessons learned the side of this and how to approach an event or a project, something like this, of this scale and size. And what would you like to share now with the audience when you’re going to implement something similar like in their government or city? Like what are some key kind of top two or three takeaways?

And curious whether any of those include looking to other cities or places for any inspiration. We know New York City is the center of the universe, right? I mean, we’re two New Yorkers, so we’re going to always say that, feel that. But just curious if there are other places that you did look to that have accomplished some of this as well for inspiration.

**DANIEL ZARRILLI:** Yeah, absolutely. I mean, we looked far and wide for good examples around the world. And nothing is a perfect fit necessarily, but you can learn a lot, certainly, from different innovative approaches in Copenhagen or in Rotterdam or in Venice or like there’s a lot of interesting examples to draw upon.

The challenge, of course, is to figure out what parts apply and what parts don’t apply and what – and what are the local conditions that you need to really consider in a different way to make something work in New York City.

And so, there’s no perfect model. No one has the right answers per se on this that apply globally, but there are good models out there. But you’ve got to also make sure you make it specific for your own local situation.

But the other, I think, major point here is the need to overcommunicate and work with local organizations. People in government can tend to think that they are overcommunicating and it’s almost never true.

**JEREMY GOLDBERG:** Right.

**DANIEL ZARRILLI:** And with certain projects that we’ve had hit here that have had some bumpy roads because of the tendency to make decisions in different ways as you’re bringing the community along in the design process, and then certain things change, and then you take some different directions, has not always been an ideal approach to project development.

**JEREMY GOLDBERG:** Right.

**DANIEL ZARRILLI:** To put it lightly.

And so, it’s important that the community has trust in what’s happening, that they understand the general details of what is driving the decision making and that the government does everything it can to overcommunicate and in a lot of ways over – to empower communities to be part of the decision-making process, which is a really hard thing for government to do.

[18:08]

**JEREMY GOLDBERG:** I love all of that. I mean, trust and transparency, the overcommunication piece, it’s really, again, remembering who you’re working for and why, right? That’s the community-centric part of this, the people’s side of it. This is – this is about New Yorkers and the city that we love. And I think those are all fantastic lessons learned and insights.

You know, a lot of the other questions I hear regularly from public sector leaders as we are working on climate action efforts and climate change work when it comes to a response today, right, where, again, we’re in a different place than we were ten years ago there are both mitigations and adaptations required.

So, what’s your advice, if you could share about what kind of work followed on, right? As we look ahead, as cities and places are tackling climate action, what are the things that they should keep in mind?

**DANIEL ZARRILLI:** One, so we just spent a long time talking about flood protection and we could do the same thing around heat mitigation or preparations for intense rainstorms. And there’s a lot of things we need to do to prepare for the changes that we’ve already locked in, in our climate.

But we’re also, I think, rapidly approaching a point where we’re going to exceed our ability to adapt to what we’ve done to our climate if we don’t slash emissions as rapidly as we can. And so, there’s a whole other conversation around making sure we’re really getting at the root cause of the problem.

And one great example of that that just became real here in New York was the approval of two new clean energy transmission lines serving New York City. And it’s very difficult to build out extensive renewable energy in New York City because we have a lot of the land that you might require for big solar farms and things like that.

But big projects like offshore wind or upstate wind and solar and hydropower are a big part of the answer on how you decarbonizing and get at the root cause of what’s driving the changes in our climate.

But those are complicated projects just the same way because you need to overcome all of the concerns around transmission and how your sitting facilities and – and just all of the local impacts of any infrastructure project and how it plays out.

And in many ways, these conversations are tougher because the impacts may be in communities that aren’t getting the direct benefit of the project. And so, if we’re building transmission lines that connect to upstate or to Canada it’s a lot of those – a lot of that construction is happening outside of New York City in order to decarbonize New York City.

So how do we align those incentives in new ways, whether it’s through job creation and the air quality benefits, or like finding the right ways to – to get everyone to agree that we’re going to do this and do this together.

You know, it’s certainly bumpy roads on all of these projects. We’ve seen projects in other states that have been shot down because of these same concerns. We were fortunate that we had the right leadership to be able to get two big projects approved here in New York City that are going to cut fossil fuel generation here in New York City by 50% by 2030.

So big, important air quality benefits that we get out of that and of course, slashing our emissions, which is going to help decrease the impacts that we’re going to see from a changing climate. So, all these things are connected in ways that we need to be able to come together and work across jurisdictions in order to get good outcomes.

[21:50]

**JEREMY GOLDBERG:** Excellent. Wonderful. Well, I have one final question for us today. And what’s one thing you’ve read, watched or that you listened to lately that had an impact on how you were thinking about this moment in infrastructure and – and technology and recovery.

**DANIEL ZARRILLI:** The one book that stuck with me the most, and I’ve been doing a lot of reading, I feel like I’ve been a voracious reader on all sorts of things climate and infrastructure, a book called *Merchants of Doubt* by Naomi Oreskes that has helped tell the story around why we haven’t been able to take deeper action on climate.

And it’s because there are folks out there that have been sowing doubt on what’s causing climate change and its impacts. And it’s the same playbook that we saw from the tobacco industry trying to tell you that tobacco didn’t cause lung cancer. Same playbook, in some cases the same people sowing that same doubt about climate change and have really held us back.

And so, we need to make sure that we’re not just approaching this climate challenge is a bit of a technocratic challenge. There is a real social aspect to this and a need to see that the bigger forces at work that are holding us back and – and overcome those.

So, I would really recommend everyone take a weekend, read that book, watch the documentary, whatever. And I think it’ll open your eyes.

**JEREMY GOLDBERG:** On my list now, so thank you. Well, thank you so much, Dan. I really enjoyed our conversation today. Again, congrats on completing the Brooklyn Marathon, all the great work you’re doing at Columbia. It’s so great to reconnect with you. I look forward to more conversations and continuing to follow the leadership and things that you get done.

And of course, thank you so much to our audience and our listeners. And until next time, this is the Future of Infrastructure.

**DANIEL ZARRILLI:** Thank you.

[Music]

**JEREMY GOLDBERG:** Thanks for listening to this episode and being a part of the Future of Infrastructure, and for joining me on this journey to meet and learn from the people improving life in their communities. If you liked today’s episode and want to help other people find it, please take a moment to share, rate and review the show. To learn more, visit us at **wwps.microsoft.com**, or find me on LinkedIn and Twitter at **JeremyMGoldberg**.

#

END