Season 3 Episode 2 of the InfraTalk Podcast:
FHWA Administrator Shailen Bhatt: Delivering BIL's Promise

Intro:

Hi, I'm Greg Nadeau, publisher of InfraTalk America. In this very special episode, I'm joined by Shailen Bhatt, administrator of the Federal Highway Administration. With an accomplished career in transportation, including serving as CEO of two state DOTs and the private sector, he now oversees the $350 billion Federal Aid Highway Program administered in partnership with the states. This program makes our nation's transportation network safer, more efficient, equitable and climate resilient. The Administrator speaks to safety, innovation and technology, project delivery and more. This is the InfraTalk America Podcast.

Greg Nadeau:

Federal Highway Administrator Shailen Bhatt. Welcome to InfraTalk America and thanks so much for taking the time to join us for this conversation.

Administrator Shailen Bhatt:

Well, thank you, Administrator Nadeau.

Greg Nadeau:

And of course, a little bit of that history is probably worth noting. The Administrator and I worked together in the Obama administration when we both arrived at Federal Highway for our respective assignments in 2009. Then, we worked for several years together under the leadership of former Federal Highway Administrator Victor Mendez and of course, ultimately, U.S. DOT Deputy Secretary Victor Mendez.

So, we both had the pleasure of serving an administrator who I always characterized as constructively impatient, which really was the catalyst to that team advancing the Every Day Counts initiative, which was all about accelerating the deployment of innovation. So, the administrator and I served in that era and both contributed to the development of that program over the years. He now finds himself in the position to administer that program in the years to come.

So, welcome Administrator Bhatt. We're looking very much forward to talking about innovation and other topics.

Administrator Bhatt:

Yeah.

Greg Nadeau:

Could you sort of give us a sense of where you are, what I call your storied path to your current position included service as leading an NPO; a deputy of the Kentucky Transportation Cabinet; CEO of two state DOTs, Delaware and Colorado; following several years leading ITS America. So, obviously an extensive background in advancing technology in the marketplace and technology policy.

So, what I've taken from that storied career of yours, leading to the current position as a federal highway administrator, is you may be the most well-rounded federal highway administrator in its history. Can you sort of talk a little bit about how that experience has prepared you to serve in this capacity, obviously in the Biden and Buttigieg administration, some of the priorities that you're charged with advancing, certainly in the context of digital project delivery and how innovation is changing the way we do business? Sort of put that all together and help us understand where that prepares you to take these opportunities in the future of the Federal Aid Highway Program.

Administrator Bhatt:

Yeah, well, I don't know if I was the most well-rounded, but I'm becoming more well-rounded with all the travel and food that I eat. So, that's an ongoing physiological process. You know, I think part of the reason that Victor and I saw really eye to eye, and you were part of that as well, was just on this idea that, you know, it takes us so long to deliver these projects. Right? And time is money. The longer we go, the more expensive the projects become. And, you know, I was also struck by how technology has been transforming every facet of our life. Right? So, the way we consume music, the way that we use our phones or BlackBerrys, back when we were in the Obama administration, the way we travel with ride sharing and Airbnb, and, you know, this has been this ongoing transition.

I was just thinking that, you know, in transportation, we haven't seen as much of an impact of technology on the way we deliver projects. And so, you know, when I was in Delaware, Michigan at the time was a leader in using tablets, right? So, getting away from like writing everything down on paper and that was considered digital innovation. I was like, we're going to do that. So, I actually sent a bunch of our folks up to Michigan and they were figuring out how do we take stuff down on tablets instead of writing everything down on paper. You know, I went to Colorado with a $1.2 billion project that was the largest highway project in the history of the state. And I remember when they were showing me some of the technical concepts before we selected the final proposal, and a lot of them were incorporating digital design elements, right? So, modeling groundwater, infiltration, just some of the structures, and sort of like the beginnings of what today we would consider to be parametric design. And I was struck by the way that they were doing it and it was impacting their cost to both show us and impacting their cost meaning making it cheaper to show all of these scenarios, all of these impacts, but then also how that would translate into the construction of it. And then when that asset eventually gets turned over to the Colorado DOT, how having the digital as-builts would

be critical for maintaining that asset. So, I've just always been a big fan. Then, I spent time at AECOM, who were leaders in digital delivery. I think a lot of the market is heading that way. HDR and all the different companies that are out there.

And so, when I became the administrator, there was funding available in BIL and so I was like, you know what? If we've got funding that's available to deliver the largest transportation program that we've ever had, and my focus is on project delivery every single day, then we need to be giving people the tools to do it in a digital fashion.

Greg Nadeau:

So, there was an initiative, actually one of our alliance partners, Trimble led. The initiative resulted in language sort of directing Federal Highway to take on this type of program by directing utilization of existing funds within the TIDP Account of Federal Highway in the 2020 Appropriations Act. So, it gets into a little bit of the weeds, but that was kind of the first evidence of a program and coming out of Congress they could understand the benefits. And then the real breakthrough was that led to the similar program language being included in the Bipartisan Infrastructure Law. What that does is, as you pointed out, it really sort of institutionalizes an effort on an ongoing basis. A level of funding is going to be challenging, to say the least.

The NOFO that you issued had really been kicking around for a couple of years. So, the fact that you acted on it as quickly as you did, and certainly in the context of a lot of demand for putting together, you know, discretionary programs coming out of IIJA, historic demand on Federal Highway. So, getting that program out has really catalyzed a lot of thinking and creativity.

I've been aware of some of the topics, some of the scopes of several of the efforts that state DOTs are leading, and they're very creative. So, I think you're going to enjoy, you know, evaluating some really good ideas. So, your decision to put this out there and incent some real creativity as opposed to just, you know, distributing money on the kind of basis you described was, I think, something that the industry certainly would agree with.

If anything, I think the demand for the program that you launched is indicating certainly a long-term need for a bigger investment in helping to advance these programs at the state level. So, an important catalyst. On behalf of the private sector industry, the software sector, the consulting engineers, the contractors who are very much anxious to make this happen, thank you for your quick action on this. It's something that was noted and certainly speaks to your understanding of the role that technology plays and your personal commitment to it. So, going forward, any further sort of prognostications on how we can continue this momentum?

Administrator Bhatt:

Well, you know, Victor created Every Day Counts. I would say that I came up with the name, because I remember Victor sitting around saying, you know, it just takes too long. And I was

like, yeah, every day counts, and people will get that. And then you ended up leading that. And so, for me, my big mantra since I've become the administrator is that we need to be driven, right? And driven is also an acronym and it might not work its way into law, and people be talking about it ten years later.

But, you know, whether it's the 43,000 deaths on our roadways, like we all just need to be very driven every single day in everything we do. But driven being an acronym, you know, the D is for delivery, because at the end of the day, we can have all the money in the world. If we're not turning that money into just important projects for the American people, then we're not doing our jobs.

But, you know, it's interesting on the $34 million. The American Recovery and Reinvestment Act was $50 billion. We thought that was a lot of money back in 2010. You know, the IIJA, the Bipartisan Infrastructure Law, is $1.2 trillion. Federal Highway has about $350 billion of that; and more money from the CHIPS Act. And so, we're talking about a lot of money. We have a lot of NOFOs out there.

But that was part of my impetus for getting it out as quickly as I did and creating the NOFO. Because initially there was some discussion of let's just take the $34 million and, you know, distribute it amongst the states. In my opinion, you know, $700,000 going to each state, maybe it's a couple of licenses, you know, you're not going to get the impact.

And so what I asked them to do was, if we're thinking about the future, because, you know, those of us who lead organizations, whether it's a state DOT or whether you're leading the private sector, you have the responsibility of leading the organization you have today, but also setting up and transforming the organization you have today for the future that's coming at you.

And so, what I wanted to do with this was to take the $34 million and put out this NOFO. And you know, we've actually got, I think, 35 states that have applied. They've asked for well over $100 million in funding, when we only have $34 million available. But that, I think, demonstrates both the desire to deliver projects in a more innovative fashion, but also the critical need.

We just can't build projects in the 21st century like we did in the 20th century. It's a different world that's out there. So, I am really looking forward to I think we're hoping to announce these later this year at the AASHTO Annual Meeting. And, you know, there are a few states that are already leading in the space.

But I think the other part of the genesis for this idea was, you know, as state DOTs we're always trying to replicate success or, you know, rip off great ideas that other states have come up with. So, what I'm hoping is we put this money in the hands of a few states who will go on and do great things with it. And then other states will be like, what a great idea, let's go do that.

Greg Nadeau:

Including a number of efforts at AASHTO to address the opens standards question, our common language that everybody can design to to essentially accelerate that process of interoperability, whether it's e-Ticketing or BIM for Infrastructure. So, Federal Highway is really at the intersection of leading a lot of that and producing a lot of the content that is helping states really understand how to get there.

But EDC-6 was a real catalyst to meteoric expansion of e-Ticketing in, I think, more than 30 states at this point, which is really going to transform what we call the next generation of e-construction. E-ticketing is the gateway. Matter of fact, we entitled an InfoDoc that we produced exactly that, e-Ticketing: The Gateway to Next Generation e-Construction.

We're already beginning to see some very innovative approaches in addressing the policy objective of your administration on the environmental product declarations and technologies that can help states accomplish that with greater ease. So, there's a lot going on in a wide range of technology, and I'll give you a chance to sort of comment on any of that that you choose. And then I want to sort of connect the technology topic to the safety challenge that you just touched on.

Administrator Bhatt:

Yeah. So, you know, I, I think, you know, you started talking about policy, right? And I think we're always going to have ad nauseum policy debates about, you know, what should we build and what are the right projects. And there's always going to be a right left swing on what we identify through politics and policy as to what should get built.

But in terms of how it gets built, I think there is bipartisan support, and the American people expect that we're going to deliver these projects on time and on budget, right? And just thinking about the scale of the bridge program, right? So, like we were hoping in the Obama administration to maybe get Brent Spence done, right? Well now, you've got President Biden and Leader McConnell shaking hands on the bridge. That bridge is moving forward, but not only is that bridge moving forward, but, you know, Golden Gate is moving forward, you know, I-5 is being discussed, Cape Cod bridges, I mean, bridges all over the country. Well, we can't just take the existing tools and talent that we have and say we're just going to deliver the biggest bridge program in our history. And even like dialing in on a bridge, right? So traditionally, when you design a bridge, you know, you're going to have like roadway engineers doing the approaches and the roadway surfaces. You're going to have bridge engineers producing some of these big cathedral projects looking at different materials. You're going to have traffic and ITS engineers who are looking at their element of it.

And from a digital design perspective, this gets everybody into one model. Everybody's understanding what the opportunities and challenges are. You know, you were talking about e-Ticketing, from a construction perspective, it makes more sense, you know, that everybody is

looking at one digital document. And then, as I said earlier, the digital as-builts show up. So, you've got this asset to maintain over its lifespan and that makes that easier. But even on the NEPA side, right, like you can do digital NEPA now, right? We can get way better engagement if we're talking to people, you know, through their devices instead of like, “Hey, let's go do a charrette at a community center between 4 p.m. and 6 p.m.”

And so, you know, from my perspective this isn't a nice to have thing. The rest of the world has deployed innovation at scale. And, you know, if we as the United States of America are going to deliver projects on time and on budget, then we need to be leaders in this space. And that's what we're trying to do, both with ADCMS and then all of the different innovation tools that we’re deploying.

Greg Nadeau:

You had mentioned safety which you always do, given that it's every Federal Highway Administrators number one priority for good reason, and obviously the concern of late really since you know post-COVID and the growth in fatalities and serious injuries. It’s a big concern of every state DOT in the country.

We've adopted work zone safety as kind of a policy issue that we've done some work on over the last couple of years. And again, the technology relationship. There's a program that Federal Highway has developed. I think it was launched in 2021. The work zone exchange program, which has essentially become the data, you know, set. The interoperability exchange where you essentially it's an open standards initiative in that it creates a common language where a number of technologies can feed data into it in real time in work zones.

And that data can be distributed through a number of tools in vehicles and in roadside technology. So, that interoperability between technologies provides real time, instant access to work zone information as they adapt and move and have an impact on the roadway. So, it's an example of how the broader digitization of the process makes possible this kind of real time exchange of data and can lead to obviously a much safer work zone for not only workers in that work zone, but the traveling public.

Federal Highway has done some really terrific work, National Work Zone Safety Strategy and other efforts. I think I need to give a shout out to the American Road & Transportation Builders Association (ARTBA). They've done some very good work in advocating for, you know, more hardening of work zones, hardening barriers, and other safety strategies as well. So, it's the private sector, the contractor community, obviously protecting their workers in work zones is their number one priority. So, a lot of great work going on in this space and I just wanted to acknowledge that. And I know Delaware DOT, your old shop, is one of the leaders in an initiative that's specifically working toward that end, but I think you'll see more about that in the future. So, safety is a great opportunity for technology.

Administrator Bhatt:

Yeah, you know, look, I think I've always been an evangelist for safety and when I talk about technology, I think about technology for outcomes, right? So, digital construction is about delivering the project on time and on budget, not about technology for the sake of technology. And on the safety side, I think, look, you know, when we were at DOT, we were cautiously optimistic because we were at 30,000 deaths in 2010 and we were like, oh, maybe we're on our way towards zero. And we've actually gone the other way. And I am actually sick to death of talking about safety as our number one priority. I am all about, like, what are we actually doing? So, you know, Secretary Buttigieg has the National Roadway Safety Strategy. Federal Highway is part of that. I am a big proponent, and I'm out there challenging everyone. If you have an idea, because you know this, we have our proven safety countermeasures. I would say when in doubt roundabout, roadway departures, separated bike lanes, high friction surface treatments. There's a bunch of stuff that are proven safety countermeasures that we can do more of. But I am just a firm believer, we're never going to get to zero unless we deploy technology at scale. You know, we talk about work zones. We had a horrific crash in Baltimore, six workers killed when a vehicle entered at high speed into the work zone. There's, you know, speed safety cameras that can be deployed. There's data that can be pulled in. There are just all sorts of stuff, you know, connected V to X technologies that can be deployed. So, you know, when I talk about being driven, I long for a day and I think it'll happen in my lifetime where, you know, fatalities, whether it's on the American transportation system or in our work zones, are a quaint memory. We have conversations that say, “don't you remember when people actually used to die on American roadways?” Because we've deployed all of the infrastructure and all the technology to make those things a thing of the past, just like we've conquered fatalities in a lot of different areas. We just need to apply technology and science to these challenges as well.

Greg Nadeau:

You think there's a speed epidemic in this country? And that seems to have evolved since really post-COVID?

Administrator Bhatt:

You know, I think there's a speeding epidemic in this country. And you can just see…

Greg Nadeau:

Better said.

Administrator Bhatt:

…we have the data. Yeah, well speed is also a problem, right? Because we sort of have three Americas when it comes to transportation: rural areas where, you know, you run off the road and you might not get to a doctor for a couple of hours or you might not get help. And that's a significant problem. We've got an urban challenge where we've got, you know, people walking and biking and people driving at high rates of speed in those areas. And then we've got this

arterial America where you are seeing huge upticks in people wanting to do things like active transportation. And they're on these arterials where people are going 50, 60, 70 miles an hour on non-limited access highways. And so, you know, we put up speed safety camera guidance this year. I'm a huge proponent. There should be a speed safety camera in every school zone in America. I mean, you know, I know they're politically fought, and everybody says, "well, you know, what about enforcement or what about…" I mean, to me, you know, there's no reason anybody should be exceeding the speed limit in a school zone. And if you look at the data around work zones where speed safety cameras are deployed, it is unequivocal that speed comes down. So, we have a speeding problem. We have a speed problem. It's part of the NRSS to make sure that we have, you know, a safe speed approach. And I'm committed to making that happen. But I'd also say we have a vulnerable road user problem because the vast majority of our fatalities and the massive increase in growth is amongst vulnerable road users. So, we need to partner with everyone to make sure that we're identifying those areas. We've got a plan and employment coming for that, and we've got an epidemic of distracted driving. Driving is down the distraction from what people want to be doing on their devices. So that's why I think technology partly created this problem. Technology is going to be a big part of the solution.

Greg Nadeau:

And given your background, your stint in the private sector with ITS America, what role is sort of the onboard technologies? Is the onboard technology the balance of becoming a distraction versus enhancing the vehicle's role in protecting people on the highways? Where do you see that technology evolving and at what point does the entire fleet come armed with that kind of safety technology?

Administrator Bhatt:

Yeah, you know, there's like 300 million vehicles in the fleet and obviously the vehicle side of this belongs to NHTSA. You know, Federal Highway, we're more on the infrastructure side. But, you know, a lot of states have been leading in deploying roadside technology and detectors. And, you know, luckily the FCC, you know, allowed C-V2X to move into the safety band. So, we have a lot of C-V2X that is deployed out there. I mean, at the end of the day, you know, cars have become driving computers, right? They're essentially just driving computers. And again, if you look at the technology side of it, like ADAS, automated driving assistance systems, so automatic emergency braking is unequivocally reducing crashes now where distracted drivers are creating a problem. Automated lane keeping, right, where, you know, the vehicle is keeping you in the lane. That's going to help with some of these roadway departure activities, you know, connected vehicle technologies. We still have vehicles crashing in whiteout conditions, whether it's a snowstorm or a sandstorm in the desert. And to me, in the 21st century, this idea that you'll be running down the road and there's a vehicle stopped just ahead of you when your vehicle isn't detecting it, just seems like a very 20th century approach to things. So, I think there's 200 million vehicles in the fleet. It takes about 15 to 20 years for that to turn over. So, you're going to see more and more technology being deployed. And that's why I think that the

states and cities that are leading in this space now, we want to provide them the solutions so that we could just get to zero even quicker.

Greg Nadeau:

It is by far your most important challenge, and the leadership that you and Federal Highway are providing is extremely important at this juncture. So, best of luck there. And I know without exception, every state DOT in the country is employing every countermeasure that they can possibly do. So, it's an ongoing battle, there's no question about it. And sometimes when I'm on the highway, I tend to use the technology that's now available and tend to set my speed at where it's certainly within limits. And I sometimes feel like I'm standing still as I get passed regularly by vehicles that have to be going, you know, 80 to 85 miles an hour. So, there's just no question. And the reality is in very few years, the ability to enforce speed with technology is clearly available. It's practically off the shelf technology ready today. I'm just not sure the politics of America would enable that kind of rigorous enforcement to occur.

One quick example, I remember back when I was at Maine DOT, back in the 2000s, we had a grant to do a study of red light running, and we did this study, and it was rampant, I mean rampant. But an effort to put legislation in that would enable us to expand red light technology, red light running technology, and, you know, obviously highly vulnerable intersections never got out of committee. The sense that people have to have a reasonable right to get away with speeding over, you know, essentially prevailed in that particular era, which is kind of a real issue. So, do you think the day is coming that technology is going to more, sort of, directly govern the speed that vehicles can travel?

Administrator Bhatt:

Yeah, you know, I think politics in America can be challenging. And, you know, look, I've worked in a blue state, I've worked in a red state, I've worked in a purple state. And I always feel like it's important that, you know, we give respect to people who don't agree with our, you know, our point of view. And so, I can completely understand if somebody says something like, you know, "I just feel like it's a violation if you're putting up more traffic enforcement." But we need to have that conversation. I can remember in Colorado, you know, a certain member of the legislature telling me we were arguing for snow tire laws because we knew like the vast majority of our crashes and breakdowns on I-70 were caused by snowstorms. We were just saying, "hey, let's mandate snow tires." And this person telling me, "No, we're not going to do that because there's no mention of snow tires in the Constitution." And, you know, that's where we start to lose…we get a little bit detached from reality when, you know, if you if…and this is on the right and the left, right? If you're going to make sort of extreme statements of like, hey, you can't have a snow tire because it's not in the Constitution or I mean, I think there's like a lot of common sense, a lot of common ground. And so, we've got a few years, you know, to like, have these conversations. But I think we need to like, say, "here's the data." I think you're always on safe ground making data driven decisions. So, the data is pretty clear that, you know, technology, whether it's red-light cameras or, you know, speed safety cameras or, you know,

whatever these speed monitoring things might be, they unequivocally can help reduce these crashes. So, let's try it out. Let's give it a shot. You know, the Department has a smart intersection challenge that's out there right now. So, just, this is more on detecting vulnerable road users and flagging it. Holding like a walk signal or a red light if a bicyclist or a walker is approaching. And so, you know, I think Winston Churchill said something like, you know, "Americans will inevitably do the right thing once they've tried everything else." And so, I am hopeful that we'll go through all the other things. But again, let's keep our eye on the prize, which is right now 43,000 Americans are dying every year on American roadways. And there's no other industry that has a safety track record like that. If there was, we would regulate it out the wazoo. And so, let's just take a commonsense approach and say, "what can we do to get us to zero and let's go try that out."

Greg Nadeau:

A good note to close on. The most important issue that I've heard you speak, at a number of venues, very passionately about this and thank goodness for that and your colleagues in the states across America. So, a continued area of focus and a constant area of focus, which it deserves to be.

Administrator Bhatt:

I'm naturally an optimistic person and, you know, like I said, there are sort of big, seemingly intractable problems that we have in this country. But, you know, the law that I'm implementing is called the Bipartisan Infrastructure Law. And in that law, there's climate legislation, there's safety legislation, there's legislation that, you know, speeds up environmental permitting. And so, what you see is Republicans and Democrats were able to come together and say, "hey, we can agree, and I don't love everything that's in there, but I'm getting some stuff that I think is important to me." And because of that Bipartisan Infrastructure Law, we've got a $1.2 trillion funding bill that is going to reshape infrastructure in America. And so, you know, we do seem to have a lot of challenges sometimes speaking to one another and finding common ground. But, you know, I'm just a big believer that, you know, we not only need to, we have to find this common ground as a country to find success in the 21st century. And I'm really hopeful that the delivery of the projects that are in the Bipartisan Infrastructure Law are going to convince the American people that this is a wise place for America to invest our funds, that these infrastructure projects are important, and that they contribute to a better country, a more economically sound country, and that this can be a blueprint that our transportation system, which truly binds us together, can hopefully be the road map as to how we come together once again as a nation.

Greg Nadeau:

Well said. And you know, our sort of overall topic of how do we advance innovation in the Federal Aid Highway Program and the challenges associated with simply the way it's structured. You know, I like to say to advance innovation, you've got to go door to door to 52 different

DOTs who proceed with advancing how to adopt said innovation 52 different ways. So, it's a broad challenge, but those decisions are being made at the right level because they deliver the projects, but they need to be open to the new and advanced ways, whether it's new age materials or new age processes or digital approaches to it. It's sort of the infrastructure that would address those real high-level challenges you just articulated.

The partnership that you share with AASHTO and the states, it is our absolute best hope to advance and accelerate the use of proven, tested, but underutilized technologies.

Administrator Bhatt:

Yeah, I'm laser focused on project delivery. I think we've got to deliver projects for the American people. And I am just convinced that, you know, whether it's new materials or digital construction, we just have to build projects in the 21st century using 21st century tools. And this is sort of our first step on a long journey. But ultimately, it will be a successful one.

Greg Nadeau:

Thank you, Mr. Administrator. We have arrived at our appointed hour, and you don't often have a chance to spend this much time in a conversation like this. So, it's very much appreciated.

Administrator Bhatt:

Pleasure's all mine.

Outro:

Thank you for listening to this episode of the InfraTalk Podcast. We hope this discussion inspires you to ask your own questions and encourages you to have discussions with policymakers and your peers. If you want to know more about InfraTalk America, visit us at infratalkamerica.com, follow us on social media at InfraTalkUSA, or subscribe to the InfraTalk Podcast on your favorite listening platform to be notified of all new episodes and features. And remember, every innovation starts with a conversation. So, let's start talking.