Andrew:

Hello and welcome to Next Stop Transit Tech. This is Andrew Carpenter, the director of the National Center for Applied Transit Technology, and we are excited to be back and to talk about more great, cool stuff happening in the transit technology world. And as always, I'm here with Marcela Moreno, who is our transit technologist.

Marcela:

Hey everybody. It's Marcela. I'm really excited to be back for season two of Next Stop Transit Tech. A little recap on season one, in case you are just dropping in on the second season. We interviewed transit agencies from small urban, and rural communities across the United States on their transit technology implementations. To talk about their process, why they wanted to implement set of technology, and some of the lessons learned that transportation practitioners can take their home agencies.

Marcela:

And some of the highlights, if you want to go back and listen to our vintage episodes, are the use of artificial intelligence in scheduling in Chattanooga, automated vehicles being implemented by AECOM's automated bus consortium. And several software implementations, ranging from scheduling and dispatching software, to real time transit arrival information.

Marcela:

So, yeah. Go back, give it a listen. Everything is on Spotify, apple podcasts, whatever medium you use to listen to podcasts. All of that information is still really fresh and really relevant to today, since it was just in 2021, and I'll kick it over to you, Andrew, to talk about what N-CATT is doing for our second year.

Andrew:

Yeah. So in the next year, we're going to build on those topics that we covered in season one. And we're going to do that through these podcasts, but then also we have a growing library of guidebooks, and white papers, and fact sheets. These are all building into an ecosystem that will help you to walk through the information, and the questions you should ask yourselves about different types of technology that you might be interested in and see where you need to start. See how they apply to your situation, and then figure out the ducks you need to get in a row.

Andrew:

And so we have a number of guidebooks that are going through the final review process.

Andrew:

We're also ramping up different workshops that will help to give you really tangible outcomes, that you could walk away with to get started on different processes depending on the different topics.

Andrew:

So, so far we've covered data management and decision-making, and also digital tools to facilitate system redesigns. We're looking into holding those again, as well as holding better electric bus implementation workshops. And then also using open source GIS tools for smaller agencies who might not have access to a GIS department. And then also we are working on our technical assistance opportunities, we have our innovative technology strike teams. Those applications have just closed for

this round, but there are always more opportunities for that one-on-one type of technical assistance. So always feel free to reach out to us and we'll find a way to work with you.

Andrew:

We're also developing innovative technology state summits, and those are meant to work with state DOT's, and local transit agencies within those states on identifying statewide priorities, and working forward on those in a collaborative way.

Andrew:

And so other than that, we have a lot of cool stuff to talk about because there really is not a more exciting time to be in transit than now, as the world essentially reopens. And the past year has really forced a lot of transit agencies, and local governments, and the federal government to all rethink how we do everything, really. And so we're going to talk about a few different topics such as real-time communication systems, open data, contact less fare payment, technology and equity, and the future.

Marcela:

But yeah, those are some of the topics that we'll touch on. Like Andrew was saying, it's a really exciting time to be in transit and transportation.

Marcela:

Earlier I was thinking about... I hope you guys can't hear that dump truck. Earlier, I was thinking about how post pandemic and just the nature of the world right now, there is a lot of funding, and interest in the way we design our transit systems. Essentially COVID-19 has had such an impact, changing the way that we live our lives. So many of us are still working from home, or in some sort of hybrid way. There is a lot of stories that I think the pandemic brought to light, and considerations that we need ~~to make~~ to design a world that fits the diverse set of needs~~.~~

Marcela:

And talking about a lot of these technology implementations, I think they're going to play a huge role in how to steal a campaign slogan~~—~~to build back better.

Marcela:

I think the topics that I'm really interested to find stories about, is how to use technology as a force to advance equity. Because, as we all know and can see, implementing things without thinking about the impact on some of our more vulnerable populations can just lead to further increasing that equity gap. But how can we use technology as a force for good? And really use that to uplift people and give them the opportunities that others have, and just create a more equitable society?

Andrew:

But I'm going to dodge your question to start just because I think using equity as the lens through which we make technology decisions, and think about how we apply that to our transit systems and in general. Reconfigure them and rethink how we deliver transit service, is an important lens for us to start using. And that's because of just the, now that the impacts have really been laid bare of different decisions that we've made in the past, then this way we can make sure to bake that in from the beginning.

Andrew:

And so that feeds into that idea of the build back better campaign slogan. And, and the phrase how it's used in general, which is. Marcel I think you were telling me that it's used in resiliency circles. And so if you're coming at this application from that lens, then I think that's the right starting point.

Andrew:

And so with that background, I think we're seeing a lot of movement around electric bus implementations, the improvement around energy density in batteries. And therefore the range of buses is improving very quickly, as well as being able to store energy from renewable sources. Those coming together are going to help a lot when it comes to making it more practical to electrify fleets. But then also other alternative green fuels, green energies that are coming out. Such as hydrogen electric buses, those are sort of more in their nascent stage. And I think that over the next year or so, we'll see a lot of progress on those.

Andrew:

And in other areas I've read about cool alternative fuels that I'd be curious to see if there are any breakthroughs in the next year.

Andrew:

I also think that real-time communications and real-time information is going to continue to play a huge role in being able to provide much more nimble services. So it would be both, to be able to more easily adapt routes to current conditions. But then also to try new things, and then maybe serve areas that the built environment currently doesn't support traditional fixed route buses. Then we have some more tools at our disposal, to be able to address those issues.

Marcela:

I completely agree with you. I think, like you were saying, an equity lens. Especially with those two topics, electric or just zero emission vehicles as a force for good to fight against some of the environmental justice issues that we face across the country. And real-time communication systems, allowing agencies to be more agile in their planning, as well as give customers a better experience.

Marcela:

Having those systems will allow people to have more freedom in planning their trips. As well as giving agencies a platform to respond to something as big as service cuts from a pandemic, to something small like a fender bender that's blocking a bus from completing its typical route, or just making it late.

Marcela:

So that's really exciting stuff. It's a very interesting time that we live in. And I think all of this technology, and the speed in which technology is advancing has a lot of potential benefits for the people running and planning our transit systems, as well as the people who are riding it. So just generally very excited for this post pandemic time period.

Andrew:

And hopefully people will go back to transit. And so they'll have these tools at their disposal, to use it and know what's available to them. And so for our listeners, I've been doing a masters in sustainable

transportation for the past year. And one of the main takeaways from basically every class, is it's all about perception. And so having these different tools will improve people's sense of waiting, and improving their idea of what's available to them. And the ability to discover what they have available to them, and where they can go.

Andrew:

And even as someone who is curious about the design of my local bus network, there are many routes that I'm not aware of. And then using different apps with real time routing information, I discover new bus routes almost every month, and skip them where I need to go. So for those who are less enthusiastic about transit, and don't work on it for their lives, then this is a particularly valuable tool and set of tools to have.

Marcela:

It's very true. I have a story on how real time communication systems definitely saved me. Today when I was flying into Savannah, I was really hoping to get on the local transit system. And I was pretty sure, because I used to live in Georgia, that there was an express route from the airport to downtown Savannah.

Marcela:

And I looked online and I found an old system map, and I noticed that it said 2017 on it... Google maps and I looked up the directions from the Savannah airport to where I'm staying in downtown Savannah, and I noticed that the closest bus route was a five to seven minute drive away. So Google maps was routing me to take an Uber or Lyft to get to the bus stop. And I thought that was unusual.

Marcela:

So because of that prompt from the system, I was able to find out that the express route from the airport to downtown Savannah had been discontinued earlier in the pandemic. So that definitely saved me a lot of time and heartache, from waiting and the summer heat of Georgia and ultimately delaying me from getting downtown. So I'm very grateful for those systems personally, and also just seeing the impact they have on folks.

Andrew:

Agreed. And so with all of this exciting stuff happening right now, where are we going with it in the future? Hot take.

Marcela:

That is a very good question. I think that a lot of the implementations that we have seen during the pandemic, like contact less fare payment, real time communication systems, and the use of software to facilitate a more agile planning process.

Marcela:

So like we were talking about earlier, the GIS workshop that we're planning. Having those tools to visualize data and service changes are, I think, going to continue as well as we're going to see... innovative technology to improve infrastructure like zero emission vehicles, better way finding, digital

signage and annunciators, so that that same information can be accessible regardless of what you're able to see or hear.

Marcela:

And I would like to see, and I think that we will see a greater push for universal design so that transit can accommodate the needs of more people. So that's what I'd like to see in the future. And what I think will happen. It's time for your hot take Andrew

Andrew:

Agreed to all of that. But then also, one thing that we've been focusing on behind the scenes, is this idea of building a lot of partnerships outside of the transportation world. Because transportation and transit in particular, feed into the quality of delivering just about any other service that exists out there.

Andrew:

So because you can have a really great anything, but if people can't get there, then it doesn't much matter. And so, one of the things that a lot of this information that we're developing, and collecting. And using can help with these different partnerships to expand the decisions that transit systems make to feed into these bigger structures of what we're developing. So from infrastructure, when it comes to the built environment, roads themselves, to housing development, commercial development. But then also if you're talking about electrification, working with energy companies or the department of energy or the EPA on citing different charging infrastructure, or other alternative fuel infrastructure. And putting that in a space that can maximize its benefit for the transit agencies, as well as other public users.

Andrew:

And so creating more of a mesh of decision-making that can maximize the impact for everyone's good. And so the data and the real-time data that we're working with is, I think, going to keep working its way into the different feeds and mindsets of the folks that in adjacent topic areas, we'll say. And informing their decisions and we can use their work to inform ours.

Andrew:

And so I highly encourage everyone listening to start thinking about their planning in that light. So both from the equity lens, and then how you can work with other adjacent industries on leveraging your decisions to make a bigger impact.

Marcela:

I totally agree. I think that that cross industry collaboration ends up with really powerful ideas and solutions that you just can't get when you're staying within a certain bubble. You really get the creative juices flowing. I'm really excited to see where that's going. So everyone should listen to Andrew on that piece of advice.

Andrew:

Thank you. That's my big hot take.

Andrew:

Right. And so one thing, while we build our resources going forward, these podcasts, as well as our guidebooks and fact sheets, and all of that whole ecosystem that we're putting together, we would like to hear from you. And this way you can suggest topics that are important for us to cover that we might not have covered yet. And we want to hear from the industry, get the industry's feedback. So that way we make sure we are helping you to address those key challenges that are frustrating you, or kind of holding back the ability to provide even better service than you already do.

Andrew:

And so you can reach out to us, you can go to our website which is N-CATT.org. Or you can reach out to us on social media where our handle is @transitncatt. And yes, reach out any thoughts, any ideas are welcome. We want to hear, and then we will make sure that we work that into our products.

Marcela:

Yes. Please share your ideas, your pain points, or just what you want to learn more about. We love finding new topics. But it would be even better if we hear from our listeners, and are able to cater to some of the things that you all are facing, or just interested in learning more about.

Andrew:

And with that, that is a quick recap of both where we have been and where we're going. And so going forward, we're going to release a new episode every other month. This way you have a nice constant drip of information coming into your feeds. And again, reach out to us with any questions or information you have. And we look forward to recording these, and putting them out. Thank you.