

Ep.2.24 - Angela Flood

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SPEAKERS

Announcer, Ed Clemente, Angela Flood

A Announcer 00:02

Welcome to The Michigan Opportunity, an economic development podcast featuring candid conversations with business leaders across Michigan. You'll hear firsthand accounts from Michigan business leaders and innovators about how the state is driving job growth and business investment, supporting a thriving entrepreneurial ecosystem, building vibrant communities and helping to attract and retain one of the most diverse and significant workforces in the nation.

E Ed Clemente 00:28

Hello, I'm your host, Ed Clemente, and welcome to the show. We're fortunate to have a friend and a guest Angela Flood, she's the Director of Business planning for the American Center for Mobility. Welcome to the show, Angela,

A Angela Flood 00:40

Thank you so much for having me Ed.

E Ed Clemente 00:42

Well, you and I have worked together on a couple other things, and I'm so fortunate that you're here today, appreciate you doing this.

A Angela Flood 00:49

Well, thanks for having me.

E

Ed Clemente 00:51

So let's start out with the American Center for Mobility, I know that's a mouthful, and I know, you'll refer to it as ACM, probably throughout the show. But why don't you tell people who've never heard of it what it means?

A

Angela Flood 01:06

Sure. The American Center for Mobility is a purpose-built sustainable mobility and transportation testing facility. And we are located on the historic Willow Run site, which is in Ypsilanti Township, Michigan in Southeast Michigan. We're essentially between Ann Arbor and Detroit. And we've taken over this site, there used to be a GM plant here before right before we were here. And before that, it was a number of other things starting with Henry Ford, where he built B-24 bombers on the site. So it's been a facility, it's been a site that's been used for manufacturing for 80 years. And now we are here operating the next generation of sustainable transportation and mobility.

E

Ed Clemente 02:00

Yeah, in fact, it's hard to go through a World War Two history book without seeing a picture of the plant, because they were producing all those planes so fast there.

A

Angela Flood 02:08

Yes, it was the it was the largest building in the world when it was built, under roof. Not not tallest, of course, but it was it was almost a mile long. [I didn't even know that.] Yeah, and that building is no longer here. And so we have repurposed the site for a testing center, essentially.

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Ed Clemente 02:30

Yeah, I remember even back before you guys even started in the legislature. We were trying to help, sort of, because it was a brownfield site to I think, at one point too.

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Angela Flood 02:38

Yes, it is a brownfield site. Most of it is still a brownfield site and the State of Michigan, and especially the Michigan Economic Development Corporation, you know, really helped clean up the site. There were just a lot of legacy issues with with anything that's been operational, you know, for almost 100 years. You're just going to have a lot of issues because things were done differently in the past, right? And when you know, more you do better. And the state of Michigan has really put a lot of effort into cleaning up the chemical contamination on the side and protecting the watershed for generations to come.



E

Ed Clemente 03:23

Yeah, and I know that, you know, honestly, as someone who used to do a lot of economic development on the ground, like how important the Brownfield sites and it's so I'm so glad even when I was a legislator I'll how much you guys were with the ACM site was being retrofitted because it was such a great use for it. And, and why don't you kind of tell a little bit about how you how people actually use the site too currently?

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Angela Flood 03:49

Sure, absolutely. So the way that people use, essentially the ACM takes up 500 acres, more or less on this site. So it's a it's quite a huge site. And so what happened was that the plant, which was extremely old, was torn down, and the plant slab is still there. And so we, along with the State of Michigan, built a number of roads, the State of Michigan, loaned us some state roads that were no longer needed and then we went and built new roads to connect those roads into new road systems. And so essentially, you have a big site that has high speed roads, that have lower speed areas, and they're really not just roads, they're testing environments. So people who live in the State of Michigan are usually familiar with automotive test facilities. You know, they're just, you know, very large facilities where it looks like cars are just driving around. But that's really only part of what's happening here. So the first layer is the road systems what you need to have vehicles of all types doing different tests. And the second part of that is that you have, and you have an ITF layer, a communications layer above all of that. So we have high speed broadband, you know, working on getting 5G to the site, you know, we have DSRC units, which are roadside units that send messages directly to vehicles. And so it's not just the vehicles driving around, right, you can almost do that anywhere, but it's really the vehicles interacting with other objects in their environment and communicating with those issues. And so, or communicating with that technology. So now, then you add to that a whole set of simulation tools, which we are working on deploying, along with our partner, Deloitte. And so you have this, you know, whole center that enables really end to end development and testing of various types of smart vehicles and smart infrastructure.

E

Ed Clemente 03:52

Yeah, we've had some previous guests, that have done little bits of that, but like, you're probably the first guests we've ever had that really talks about, like, sort of where the rubber hits the road, right? The but I know, we've done a lot of folks with edge computing, and all that data that's been collected. We've had people talk a little bit about LIDAR and radar. And so could you talk a little bit about why it's important to capture that that, you know, a little bit?

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Angela Flood 06:31

Well, as far as what the companies are doing with the data, you know, they are they're using, they're using the data to develop their products, and to figure out how their vehicles, you know, I may say cars, or I may say vehicles, because it's it's all sorts of sustainable mobility, right? But I think what's important about about ACM is that, you know, we provide a shared facility for companies to come together and collect this data, for example. Or we provide a shared, a set of shared infrastructure where companies can come and develop the product. These these sorts of facilities are much too expensive for everyone to have their own facility. And only the

really, you know, the very biggest OEMs, or the very biggest Tier Ones have their own testing and development facilities. But even then, they may not have all the, you know, infrastructure needed for connected vehicles, for example. And so, you know, certainly startups and smaller companies are not going to build this type of facility. And so we are here in southeast Michigan, and we provide a place for different companies to come and to work on their particular projects. And, you know, but we do it in a shared manner, but it's also very private manner, right? So companies can access different parts of the test track at different times, you know, or they can come here together to collaborate with other partners. And that's really the value that we provide. So we're not collecting anyone's data, right? But you know, the, of course, data is the next part of the auto industry.

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Ed Clemente 08:09

And you mentioned sustainable a couple times, but I see sort of on your resume, you went to the is it the Erb School for Global Sustainability?

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Angela Flood 08:17

It was the Erb Institute for Global Sustainability, which is a joint program for the Ross School of Business at the University of Michigan and the School of Environment and Sustainability. So really, you know, I'm interested in sustainability from all aspects, but especially how we can develop infrastructure, and seamlessly in a way that is going to support the future. So, you know, with infrastructure and vehicles, you know, you're interacting with that every time you step out of your house onto a sidewalk. Every time you get in your own vehicle, but most importantly, whenever you order something online, and it shows up at your house. There's so much behind that supply chain, from shipping to porch to over the road trucking, you know, and as how does that get to your house, right? And that's a for me, the most exciting thing about sustainable transportation is working on the inter-modality and the handoffs, between all that, all of that infrastructure. And you know, thankfully, you know, ACM is so big, and we have all the different, you know, high speed areas, the low speed areas. So, there there's a lot of, there is a lot of inter-modality work that can actually take place here.

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Ed Clemente 09:46

Yeah, I know I've been out there just once or twice, but you have a lot of like, even unusual structures, you know, in the area for to do this training, right? It's like a little town almost.

A

Angela Flood 09:57

Well, we do, we so the American Center for Mobility is fully configurable. So the most important thing about testing is that you have to be able to create, the situation that you're going to, the vehicle is going to have to act in. And so we call this the ODD. So how fast is it going? What is it going to interact with? What types of what types of situations is it going to encounter, right? What type are there, are there going to be pedestrians? Or if some, if a vehicle is on the highway, usually you wouldn't encounter a pedestrian, but once in a while, and that would be called an edge case, right? I mean, we've all been on the highway and seen a random person,

you know, their car has broken down or something has happened. And so the vehicle needs to be able to react to that. Even if that's not something that happens in normal operation. And so you know, the thing about physical testing is that it's, you can actually create these edge cases in a very controlled and safe environment. And so at ACM, the next level that we provide, the the next layer of support, is that we have all of these robotic targets, we have a variety of pedestrians, pedestrians, that that look like they're walking. So they're what's called articulated. We have a variety of cars that are made of foam. And they look like a car to a vehicle that's that is testing here. But then if something happens, you're not running into a real car. And so, you know, the stakes are significantly lower, of course, in a facility like ours.

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Ed Clemente 10:38

Right. Especially in Michigan, we have a lot of deer top, so you never know.

A

Angela Flood 11:35

And that's right, that's right. There are and you know, and if you think about all the different areas of the United States, or even the world, right, I mean, in some areas of the country, you may be encountering different types of wildlife, right? You know, it doesn't have to be a deer, right?

E

Ed Clemente 12:08

And you really are testing for the globe, because you want to, whoever these products, you got a lot of international companies too that might use your facilities, right?

A

Angela Flood 12:17

Yeah, absolutely. So we have, we have a lot of partners that that helped us start the American Center for Mobility, you know, great, great partners, and they've announced additional investments in our facility. You know, Toyota has, they, they rent garages here. But they essentially are doubling their footprint at ACM, and they're building a purpose-built building here. So they have announced that and they've made an additional investment in our facility, I believe, an additional \$6 million investment in our facility, as far as using our facility. Daimler Trucks has a partnership with us where, you know, they make these amazing commercial vehicles, you know, the Freightliner brand, the Detroit Diesel brand, for example. And they've been able, they have their vehicles out here, and, you know, they've been able to use our facility in a slightly different way. So they're able to showcase how these vehicles operate with all of the advanced technology that are on them. They're able to bring their customers here and their customers are able to actually get in and experience each of those types of vehicles, were in a normal city situation, it's difficult to drive a commercial vehicle down the street a lot of times, let alone you know, 12 different kinds, right, including, you know, a Class A vehicle. And so, you know, we're able to safely deploy, and test and demonstrate different types of vehicles here. And so that's really, that's really exciting. But of course, you know, any

automotive company is welcome to come here and do test and development activities or showcase activities to show their products or to interact with potential customers, for example, on our site.

E Ed Clemente 14:11

And, I mean, do you have any other partners or future stakeholders that are kind of helping you out beyond those?

A Angela Flood 14:19

Oh, of course, we we have a lot of partners. So all of our founding partners were were were companies that came in originally to help start the facility because this type of facility in economic development terms, it's called a public private partnership, which means that you know, it has support both from the state but also from private companies. You know, this type of facility could not wholly be started just by the State of Michigan, the investment would be very large. But but also you need you need industry involved because industry needs to inform what you're going to build, right? We We built test environments that were for industry to the specifications of industry.

A Announcer 15:07

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E Ed Clemente 15:24

So let's go to what you think are probably some of the future disruptors or trends, too, as you think are on the horizon for you guys.

A Angela Flood 15:34

Oh, wow, I think cybersecurity is a huge one. And I know a guest that you ask a lot is you ask people to give advice, you know, to their high school selves. You know, I would think for anyone who's listening who's thinking about a career, you know, cybersecurity is certainly one to look into. And Michigan has amazing training programs in cybersecurity. I also think that fuels are very important. So we talk about electric vehicles and, you know, we talk about alternative fuel vehicles. You know, there's a lot of interest in hydrogen, of course, from the federal government, it's going to take, you know, a really comprehensive approach to make sure that we have the infrastructure for hydrogen, but hydrogen has the potential to store all of this renewable energy that are that we're that we are producing, because hydrogen is an energy carrier, it is not an energy source. And I think that, you know, a concentration on fuels and looking at mobility as a well to wheels sort of activity, you know. We used to think of the vehicle industry is just, well, someone makes cars and someone buys them. But now you really

have to look at, okay, we have to produce the infrastructure, we have to, you know, where are we going to get the fuel? What are sustainable fuels? You know, and how is that going to impact people's lives? What are the operating models, you know, everything is changing. And so now, we can't just look at one piece of it, we have to look at the entire ecosystem and the entire supply chain at the exact same time.

E Ed Clemente 17:12

I know Toyota is really big into fuel cells too. They've published several papers about it, how they start committing a big chunk of their research to it too.

A Angela Flood 17:22

Toyota, you know, is one of the you know, that hydrogen has been around a long time. But you know, Toyota is one of the first companies to commercially deploy fuel cells on a large scale.

E Ed Clemente 17:34

Yeah. My nephew just graduated from high school, and he did go into cybersecurity computer science program. [Look at that Ed, you're full of good advice.] I told him to do it, too. But I didn't know if he'd listen, he's a kid they don't always listen. But is there anything else you wanted to give yourself advice for when you went to back to school, if you could go talk to yourself in a time machine?

A Angela Flood 17:58

You know, I would say find something that you're so interested in, you want to learn about it continuously. Because we don't really know what all the jobs of the future are and if you keep learning, then you will always be well positioned.

E Ed Clemente 18:13

The other thing I wanted to ask too is, what do you like, where do you find interesting in Michigan? Like do you go up north, do you like festivals? It's like a Pure Michigan sort of question.

A Angela Flood 18:28

So I grew up in the western United States and the so the most interesting thing about Michigan to me is the amount of water that exists here. So you know, when you look at natural resources, Michigan is extremely rich in water. And I always like to say a four out of the five

Great Lakes prefer Michigan. It is, you know, there's, there's so much water here. There's, you know, there's rain almost every night in the summertime, and, you know, other parts of the country do not get to experience this. And so I think it's a great asset.

E

Ed Clemente 19:06

We've had some recent, we had some guests in from Saudi Arabia, and they were like shocked, they had never been to a place with so much water before.

A

Angela Flood 19:15

Yeah, it really, you know, but I would say, you know, one of the most important things about the American Center for Mobility is that the State of Michigan helped develop it in order to support the future of transportation in Southeast Michigan. You know, I talk to people from all over the place, especially California, and I hear that Michigan is steel on wheels. And, you know, and I say, wow, you know, I don't see that where I am on a day to day basis. And so, you know, we're doing a lot of future automotive work here, but I don't think it's always obvious to people who are outside the industry and outside of Michigan around the time of technology that we are working on. So I think that the State of Michigan making the investment in the American Center for Mobility and making the investment to help get us started, you know, is the State of Michigan announcing to the world that it is serious about future transportation. And so we exist as part of this big ecosystem that includes the Office of Future Mobility and Electrification, you know, that includes the MEDC, that includes MichAuto, that includes includes all of our economic development partners, such as Spark or the Detroit Regional Partnership. And you know, and of course, you know, the Ypsilanti township where, where we are located, and everyone is working on a piece of it. And, you know, we are all great collaborators in the State of Michigan, which is something that I don't think is true for every place in the United States.

E

Ed Clemente 20:52

I just want to say you put that pretty well, as someone that was in the legislature when this stuff was being crafted. Because, you know, often that's other states, we say things like that for federal dollars too, sometimes, right? So it's not just because they don't know what's going on, they just don't want to act like there really is competition here and so they find out the hard way. But anyway, I want to thank you very much again, for our guest today, Angela Flood. You're the Director of Business Planning at the American Center for Mobility. And you did a great job today Angela, thanks a lot for taking time to do it with us today.

A

Angela Flood 21:28

Thanks a lot for speaking with me Ed, I really appreciate it and I love the podcast.

E

Ed Clemente 21:33

Thank you. Join us next week where our guests will be Heather Linear. She's the Chief Operating Officer at NBC Commercial Interiors, a Steelcase Premier Partner, and some

Operating Officer at NBS Commercial Interiors, a Steeicase Premier Partner, and some opportunities where the future of workplace and hybrid might be headed.



Announcer 21:50

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