

# ITE Talks Transportation

## How Carmel, Indiana Became the "Roundabout Capital of the United States"

*ITE Talks Transportation Podcast*

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**WAGENBLAST:** Today we're going to be talking with Jeremy Kashman, he is the director of engineering and the city engineer for Carmel, Indiana. Jeremy, thanks for joining us on ITE talks transportation.

**KASHMAN:** Thanks for having me. I'm pleased to be here today.

**WAGENBLAST:** Now folks who know a little bit about your city, probably will probably be able to guess why we talking to you and why Carmel is known and traffic engineering circles. But why don't we start off by you telling us a little bit about the city and paint a bit of a picture for us about why Carmel is called the roundabout capital of the United States if you would please?

**KASHMAN:** Yeah. So Carmel IN is located just north of the city of Indianapolis Indiana, currently we're home to 142 roundabouts. We just recently opened #142 over the last couple weeks, we have several under construction. We have handful of roundabouts set for construction yet this summer.

We constructed our first round about in 1986 and one thing about Carmel, is we've seen since that time frame, we've seen a pretty substantial amount of growth under the direction of our Mayor, Jim Brainard. He's done a great job of really looking forward to what he wants the city to be. How can we grow and compete in a global economy and really looking at how we can safely do that safely move vehicles through our city. So our first roundabout was constructed in 1996 and that was actually like a private roadway, a private development that went in. Then after that we constructed our first two early on a new North South corridor on the east side of the city. So that

was one of our one of the mayor's first big projects he completed and he really started becoming enamored with roundabouts after spending some time overseas, doing some grad school work studying abroad, so while he was there and he saw that there were roundabouts, he saw that they function very well. At some point in time once he started really looking at transportation planning, he decided why don't we try some here. So that was one of the first steps.

**WAGENBLAST:** Roundabouts take a little bit of space, I guess in some places to create. Give us a sense of the development and what is like in Carmel. Is it a problem finding the land to create these roundabouts or is that really not necessary?

**KASHMAN:** Well, I think it really becomes the context of where you're placing a roundabout. We actually have some studies in certain areas where you know when you're converting a 2-lane roads with a stop controlled intersection to a roundabout depending on what you're looking at traffic wise a roundabout might actually fit a little better because you know you're not going to have to have turn through and right turn in some instances. So, so some of the single lane roundabouts seem to fit pretty well. Carmel, Indiana, our East and West sides are more suburban, but our interior of the city is starting to become more urban. So not only are we constructing those roundabouts in the suburban portions of the city but in the last six years, we've been focusing on the internal urban core of our city as well.

**WAGENBLAST:** You mentioned that first roundabout back in 1996 was constructed in a private development, and obviously since then they've become more prominent on public roads around the city. What kind of reaction have you had from the public? Did it start off somewhat skeptical? And then people come to embrace it, or are you finding that there are still some who resist the idea of creating these roundabouts?

**KASHMAN:** You know, you always find some resistance to what you're doing. And I mean, the best thing to do is to have a clear vision of what you're going forward with and how, you know the benefits of what you're building them for. Those first roundabouts that we constructed, like I said, were on a new North South roadway, so what better place to put roundabouts on than a new road. So when the road opened up, they were there and people got the benefit of using them. So that corridor has since been a boom development on that side of the city, but it also gave a really good example of how roundabouts could be functional on our roadway system. Then you take that and move it to other areas of the city where as we begin to grow we were taking over some over some older county roads that were four way stop control. Obviously during peak rush hour time, traffic does not move. One of those corridors Spring Mill Rd was adjacent to US 31 and Meridian Street so at the time that corridor was all at-grade traffic signals. So there was a lot of progression issues

on that road as well. And one thing that we saw as we began-- this is prior to me being here--but one thing we saw constructed the roundabouts on Spring Mill Rd. It actually started pulling traffic off the state road because Spring Mill had better flow than the state route did.

**WAGENBLAST:** When you're pulling the traffic off of the state highway out to to Spring Mill. Did that resistance from folks saying hey now we've got all this extra traffic that we weren't having before?

**KASHMAN:** Yeah. I mean, there's always those kind of discussions take place. At the same time we were developing the corridor in between Spring Mill and US 31. that was to help fix that solution. You know, that corridor was, we saw as vital that to economic development as well. As we constructed that corridor, of course, all the intersections were roundabouts there as well. So I think that's where once you can really commit to a steady philosophy and have proper installation, I think that really starts bringing the public support on board because people see the benefits of it, and it actually gives parts of their lives back.

**WAGENBLAST:** When I grew up and learned to drive, I learned to drive in New Jersey and New Jersey is the home of one of the first traffic circles that ever was created in the United States. Now traffic circles, I guess, are close cousin of roundabouts, but I know here in New Jersey they decided to get rid of many of those traffic circles. It was kind of a Wild West than subways of driving because there were no real rules about who had the right of way or anything like that. Tell me a little bit how does a traffic circle differ from a roundabout, if you would.

**KASHMAN:** I think the main thing between the traffic circle and the modern roundabout is all to do with design and geometry and a big part size as well. Some of those, those are really traffic circles and pretty large. There's even instances where a modern roundabout was built inside of the traffic circle to take its place. Those are some of the key things with the roundabouts roundabouts. We're looking at proper geometry. We're looking to slow vehicles down, getting into the roundabout, really focusing on the fastest path through the roundabout cases, and I think those are some of the biggest differences between the two.

**WAGENBLAST:** As the city engineer, obviously you're in charge of designing these, not necessarily that you are the designer of these but you're in charge of that and share with us some of the the more interesting design or operational challenges you've faced and how you've overcome them. If you would please Jeremy.

**KASHMAN:** So some of the challenges that we have put forth with some of our roundabouts where obviously we're taking a large initiative to really study to make sure we're not oversizing our transportation network. You know, one of the sayings that we have is first, we wanna fix our nodes,

fix our intersections and try to leave the existing roads the same size and shape. Whatever we build today, we have to maintain tomorrow. So there's no reason to building twice as big as it needs to be. So then there's a couple of instances say, near our high school where we've had to make the decision whether or not to go multilane or single lane, because the peak hour's really a 15 to 20 minute time frame in the morning during school. You know we've use some innovative methods, we put a roundabout there and we have a traffic meter on that's similar to an Interstate on ramp during peak times. So that actually helps regulate the traffic, helps balance that flow. You could probably add multiple lanes to that, and you might still have a good gesture problem during school traffic. So it's just trying to be smart about it. Some of the challenges we have in our urban core is we're really trying to make our urban core more pedestrian and bicycle friendly. So one of our projects that we're about halfway through is our range line road streetscape project, that's a project where we've taken 5 lane roadways, so two lanes in each direction with the center turn lane, the suicide lane, and we're taking that down in some instances to one lane in each direction, with the landscape to median, and replacing the traffic signals at the intersections with roundabouts. And then one added key to those roundabouts that we've added are raised pedestrian crosswalks. So taking that pedestrian crosswalk to kind of a different level of finish where we're adding the race crosswalks to slow people down. Really more of a visual cue that people are going to be crossing at those intersections. So that's one of the projects that we're very proud of and we've seen as a success so far.

**WAGENBLAST:** Talking about pedestrians, have you found evidence that the roundabouts have decreased the number of pedestrian and/or bicycle crashes and at the same time, maybe if it's not necessarily fewer in number, at least decrease the severity of those events?

**KASHMAN:** Yeah so our pedestrian data is pretty good. It's actually sometimes when you look at it, we don't have a lot of data on pedestrian crashes just because we feel like our system's working pretty well. I think the one other thing that we do is like to give a lot of different options to people so in certain instances we've also created some midblock crosswalks, especially in the areas where we can get traffic so you don't have to go out of your way to cross the roadway, there's some different things we've done on our roadway network that also help with that. We do have a fair amount of Boulevard style roadways in the city. So that helps with the midblock pedestrian crosswalks because you get center refuge for safety. Also while we've been building a lot of roundabouts, we've also been building a lot of multiuse paths throughout the city. Since 1996, we've also constructed over 200 miles of multiuse paths throughout the city. So really looking to connect our residential areas to our urban core and our expansive parks network as well.

**WAGENBLAST:** You touched on this a little bit before, but I'd like to get into it a little bit deeper. You talked about landscaping at the roundabouts and from some of the pictures that I've seen of the roundabouts in Carmel, there is even artwork and such that's involved. Talk to us a little bit about the design and the aesthetics, if you will, of the roundabouts.

**KASHMAN:** That's one thing that we're also very proud of in the city is that we not only do we use the roundabouts as a safety network and a benefit to our climate, but really focused on them as a enhancing our quality of place. We've taken all that asphalt out of the middle of an intersection, and we've planted flowers or we've added artwork throughout the city. That's been a more recent push that we've done through the years here, and really just kind of creating a sense of place throughout the city and we do those things also the slope vehicles down. I like to say is if you really look at it kind of takes the outliers out of entering the roundabout. There are times where if a person's entering the roundabout at a very high rate of speed, they can because they can clearly see across the center of the roundabout that nobody's coming. So, adding the landscaping in, blocking the views just to the point where the appropriate sight triangles for speed, we do design off of that, but that way start to slow people down. Also for the very timid driver, there may sit at a sit at the entry to a roundabout if they see somebody across the roundabout. This also allows them to focus where they need to focus, maintain safe driving habits.

**WAGENBLAST:** Talking a little bit more about safety, we talked about it as far as pedestrians, but as far as vehicles are concerned. Tell us a bit more about the safety benefits and how you've used that data to back up your decisions to install more and more roundabouts in Carmel.

**KASHMAN:** Yeah. So we're very proud of our safety data. You know, some of the early studies that we used when we were developing them come from the Insurance Institute of Highway Safety, showed that there's a 37% drop in accidents at roundabouts and a 75% of reduction of accidents with injury. We recently completed an additional study with. The Insurance Institute of Highway Safety where they actually took all of our data, and compared--there was a whole big process to that but it was a study that was released last August, and it showed that at 64 intersections that were converted from signal or stop, we saw a 21% reduction in accidents and a 47% reduction in accidents with injury. So those are big. I mean if you look at our data from 1996 to the present time, our city basically tripled in population from 30,000 to just over 100,000 today. But we actually had less personal injury accidents last year than we did in 1986. To me, that is just, you know, because not only has our population grown, but our land area has grown as well, and when I give presentations like kind of put that slide up the show the city limits before and the city limits now. The other positive in that is that people look at some of the National Statistics per 100,000

people I think for fatalities that rate is somewhere between 11 and 4 fatalities per 100,000 people. We've been holding steady at 2 for the last dozen years, so it's contributed to roundabouts and it's also contributed some other things we've done in our roadway network.

**WAGENBLAST:** Obviously, safety is one of the biggest benefits that you get from roundabouts, but there are some additional benefits as well. Tell us a little bit more about how they approve.

**KASHMAN:** Nobody likes driving home from a 9:00 o'clock meeting and sitting at a stoplight when nobody else is driving around. So that's one of the major benefits. We've had this discussion when we work with other industry partners, as far as somebody brings up, well, by putting it a roundabout in versus something else, maybe the peak hours is efficient, it's like, well, but they're still 23 hours out of the day as well. So those are very important. So that's where we see the biggest benefit as reducing idling and emission. A fair amount of our roundabouts we've constructed with CMAC money or congestion mitigation air quality money. So that's a method that you have to go through to prove what the reduction of carbon emissions is in order to apply the funding.

**WAGENBLAST:** We talked about Carmel being called the roundabout capital of the United States. You mentioned you're a suburb of Indianapolis. Obviously people around the country have come to Carmel to see what you're doing. You've talked to groups around the country about what you're doing, but I'm curious about your neighbors, the city of Indianapolis, some of the other suburbs. Have they followed your lead with doing roundabouts, perhaps not as many as you have in Carmel. But doing some more of their own because of what they've seen that get at their neighbor?

**KASHMAN:** Yeah. I mean, I think translating what we've done across our region, I think some of our neighboring cities in Hamilton County have been more of an adopter than others, the City of Noblesville, City of Fishers, and City of Westfield and then even Hamilton County Highway Department have adopted a roundabout. So I think probably regionwide between all of those entities, they probably don't have as many to do but you know they're steadily improving their roadway network as well. One of their main north South corridors, State Route 37, is currently being kind of mirrored off of what we did on Keystone Parkway back in 2010, 2011. That's a high-volume state road that's being grade separated and the majority of the interchanges would become a roundabout interchanges. So we're happy to set the tone and we're here to advocate for roundabouts.

**WAGENBLAST:** Well, I'm sure you can get quite a few detailed answers to this, but just in terms of the big picture for someone who's listening to this that's thinking about installing roundabouts in their city or town, any general suggestions you might offer as to what they should do to start off?

**KASHMAN:** The general way to start is I'm thinking you don't wanna try your most challenging intersection first, I don't think. You want to choose possibly sometimes even a new road or new project that's coming in to solidify success of roundabouts. Maybe try a different intersection that's just a single going around about sometimes even in a series and then really let people see that benefit of how smooth the roundabout works, the progression through a series of them how well that works. And once you get that base now you can start working to--maybe there's some more challenging intersections that you think a roundabout would work at. There's nothing better than opening up a new roundabout, you know, even sometimes we might get a call from a constituent about striping or something like that. Because sometimes we're still working, you know, modifying some things, but then afterwards. Oh yeah, forgot to tell you that cuts 5 minutes a day or 10 minutes a day off my trip to soccer practice. So those are good calls to get. There's nothing more that you can value than your time. And if you can get some of your time back during the day, that's fantastic.

**WAGENBLAST:** Jeremy, thank you so much for taking the time to chat with us. We've been talking with Jeremy Kashman. He is the director of engineering and the city engineer for Carmel, Indiana. Jeremy. Thanks so much for staying the time to chat with us on ITE Talks Transportation.

**KASHMAN:** Yes, thanks so much for having me.

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