Crash Analysis Studio – Session 1 Transcript

Introductory Trailer

Chuck Marohn: I want to give you two scenarios. Scenario number one a plane crashes. Scenario number two, two cars collide. In scenario number one, we pull out all the stops – we bring in the NTSB, we try to figure out exactly what went wrong. Scenario number two – we send out the cops, we sweep up the mess, and we go on our way.

John Pattison: If we, collectively – everyone on this call and the broader Strong Towns movement – if we do this right, we're going to save thousands of lives.

Edward Erfurt: Mayors and local council members want to do the right thing. They have the ability to solve it. We're going to help provide those tools for them.

Session

Rachel Quednau: Hi, everyone, who is joining us for this event. Thank you so much. We'll get started here in just a minute. I know Chuck wanted to make some opening remarks to our Strong Towns members that are participating in this. So go ahead, Chuck.

Chuck Marohn: Thank you, Rachel. Appreciate everybody who's here today to watch this inaugural episode of the Crash Analysis Studio. I just want to let everybody know what we're doing here. This is because we're doing this in this format through Zoom live. It is this kind of being treated as an episode, kind of. You can think of it as a webinar if you want, or we've been thinking of it as a as a show we are producing.

You know, what we're doing here is very serious work. And it is work that we are trying to have communities across the country copy. This is our inaugural episode. We expect some hiccups and some things to be awkward. We just found out one right now that we have our crash, actually… We all thought it was coming from a different way because the police report was different than what the on-site people are telling us.

But we'll work that out. But I want you to recognize that what we're doing here is not entertainment. What we're doing here is something and that has two hopeful takeaways. The first is we want people to watch these and say, wow, this is a really novel, important, innovative way to look at crashes. This is an impactful way for us to approach a crash, particularly a fatal crash or a traumatic crash.

This is this is really important that this be done, particularly when you compare that to the way we do it today, which is to go out and clean up the mess and point blame at somebody. What we're going to do is very important. The second thing that I hope people on this call are able to do and people who ultimately watch this is say, "I could do that", or "my community could do that", or "the people around us could do that".

And so what you're going to see - and I said this to our team here - this is not about razzle dazzle. It's not about entertainment. We're not trying to do anything really high tech. When you see the slides that I put together, you're going to be like, “Wow, that's like the boring-est slide show you've ever done, Chuck.” Yes, because we're trying to do something here that is, in a sense, clinical because we're trying to create a model that people can use around the country.

So thank you, Rachel, for allowing me to say that.

Rachel Quednau: Thanks so much, everyone. So I'm Rachel Quednau. I am the program director from Strong Towns, and I want to welcome you to the first strong towns crash Analysis Studio. In a moment, I'm going to introduce our expert panel. But first, let's talk about why we are here today. Last year, over 40,000 people died in car crashes in the United States.

Hundreds of thousands more suffered traumatic injuries. And despite the best efforts of public safety officials, these numbers have been increasing. All of our lives are impacted. There is a prevalent misconception that car crashes are caused solely by mistakes that drivers make. Looking at your phone. Changing the radio. Speeding. Even drinking alcohol. And when a crash occurs, the American response is typically to send out law enforcement and insurance agencies to assign blame.

Who made the mistake? Who are we going to blame for this? The reality is that crashes are caused by multiple factors, not just driver error. When a traumatic crash occurs, we need to identify all [of] the contributing factors and learn what we can from these experiences so that we can reduce the number of deaths and traumatic injuries in our communities.

What you're going to see now is a Crash Analysis Studio. Drawing from the best practices of the medical profession, we've convened a panel to review a crash in Indianapolis, Indiana, where a driver hit and killed someone on a bike. The goal is not to assign blame. It is to learn as much as possible about what happened and identify the factors that contributed to this unfortunate incident.

Before we go into the particulars of this crash, hear from our panel of experts, and start talking about this - we need to begin with the fact that this tragedy resulted in the death of a friend, a colleague, and advocate named Frank Radaker. Please take a moment of silence with me to honor and acknowledge Mr. Radaker and the loss of his life.

Thank you. So I'm now going to bring in our panel of experts for today and invite them to come turn on their cameras and let's meet them. So we'll start with Connie Schmucker, who is the advocacy director at Bicycle Garage Indy, a bike shop based in Indianapolis. She is the one who brought this crash in her hometown to our attention, particularly because Frank Radaker was a fellow employee at Bicycle Garage Indy. And Connie is very familiar with the intersection where this crash occurred. So, Connie, welcome. Thank you.

Connie Schmucker: Thank you.

Rachel Quednaul: Matt Duffy is an engineer for IndyGo, the Indianapolis Public Transit Agency, as well as a volunteer in the community. Matt has experienced this intersection where today's crash took place by car, by bike and by foot. And he lives nearby. For about six months, I'm told, he also gave the county recommendations on how to reconfigure this intersection and visited the crash site and observed it from a professional perspective.

Next on our panel is Damon Richards. He's the executive director of Bike Indianapolis, a local bike advocacy organization. And he regularly rides the Monon Trail, which crosses the road where the crash took place. And he's navigated this intersection many times on bike as well as occasionally by car. Melany Alliston is Toole Design's Civil Engineering Practice Director. She's based in Pittsburgh, Pennsylvania.

Melany is a project manager and civil engineer with more than three decades of experience in civil infrastructure projects. And we're bringing her into this conversation as an expert in civil engineering. Charles Marohn, who you met at the start, is the president and founder of Strong Towns, civil engineer and author of the book *Confessions of a Recovering Engineer. Transportation for a Strong Town*.

And he crafted the initial idea for this studio. Finally, we have Edward Erfurt, who's the Director of Community Action at Strong Towns. He is a trained architect and a passionate urban designer with over 20 years of public and private sector experience. And he has a keen eye when it comes to evaluating the safety issues posed by roads and intersections.

I'm now going to hand it over to Chuck Marohn to go over the details of this crash in Indianapolis.

Chuck Marohn: I appreciate that, Rachel. I put together a little presentation so that we are all on the same page in terms of the facts. I understand just from our discussion we spent a lot of time and there's a lot of stuff that's been submitted. A lot of my presentation here relies on the police report.

So I'm going to try to supplement it with some other screens here in a couple of places where I now understand it [the police report] may be in error. So let's go through this from the police crash report. This fatal crash occurred at the intersection of East 86th Street and the Monon Trail at 8:26 in the morning. The police report indicates that the skies were cloudy, but the roadway surface was dry.

The driver was traveling west along East 86th Street in the left lane. The victim, the police report says, was traveling north. But we have people here who are indicating that they think that the police report is incorrect, that the victim was actually traveling south along the Monon trail by bike. The victim actually commutes southward. And so there's a strong likelihood that that is actually the case, not what the police report indicates.

The driver crashed through the intersection and struck the victim on the far west side. We put together a little schematic demonstrating this. The vehicle is in yellow. The bike is in orange. Let me indicate this direction of travel by the bike would is the one in the police report. Some of our panelists are saying that they believe that the police report is wrong, that the bike would actually have been driving south through this intersection instead of north.

That makes some sense. The vehicle would have been traveling this way. So across the entire intersection, I apologize for the trauma of this event and the detail here, but the vehicle would have traveled through the intersection. The cyclist would have ended up being struck and projected down further on 86th Street, whether they came from the north or from the south.

The police crash report, the driver claims that the traffic signal was green when they entered the intersection. There were three witnesses in the police report that indicate that the signal was actually red. A couple of them were in the lane behind the driver that entered the intersection. One was an observer on the side. The police crash report indicates that the primary factor in this crash was a disregard of the signal.

There's no indications that there was any impairment from alcohol or drug use for anybody involved. The driver was administered a blood test. The overall site conditions East 86th Street is a stroad environment. The lanes are 11 feet wide. The enforced speed limit is 35 miles an hour. There's frequent intersections along this stroad. Turn lanes are there to facilitate through traffic.

Here is an overall view from Google Maps of the site. East 86th Street is the yellow that runs through here. The crash is roughly in this location right here. Here's a view of 86th Street. The way that the driver would have been going. You can see the signal in the distance there. That is the site of the crash.

The Monon trail is the backbone of a regional trail network. Again, here's East 86th – here [it] is in Orange, then the Monon Trail. This is a significant regional trail, carries a lot of trail traffic, accessing all these adjacent neighborhoods. Again, here's our crash site. This is what the trail looks like to the south of the crash site. As you're heading into this intersection, here's what it looks like from the north.

It's a significant enough trail that Google actually went out and filmed the whole thing. So there's good photos of the entire thing. The overall site conditions, the land use pattern on, say, the 86th Street is auto-oriented. There's a collection of anchor stores in this area drawing people from the region, targets Marshall Fields, Kroger, the North View Mall.

In this, a collection in this specific area of drive thru businesses, Starbucks, Hardee's, Jimmy Johns, Taco Bell, Steak-n-Shake. Around here, there's office parks, various retail office uses. There's a high school, a middle school, YMCA, other kind of public uses. You can see the overall general land use pattern again in relationship to the crash site. Surrounding this particular site,

You have predominantly residential type of uses. This is zooming out a little bit from the crash site here. Here is a map showing the platting and the layouts in the area. Typical suburban, auto oriented style of development with the crash site located right about here. We were able to do a preliminary speed study. That study indicates that a significant number of automobiles traveling through this intersection are traveling at fatal speeds.

We're referencing the Insurance Institute for Highway Safety report that states once you start to get over 20 miles an hour, you start to see an increase in fatalities over 30 miles an hour, you see dramatic increases. Now, when we look at this, the posted speed limit is 35 miles an hour. We did not see any speeding during our speed study.

The 85th percentile speed was 25 miles an hour. But again, going back to the Insurance Institute study, the significant number of the vehicles were traveling at speeds that would be fatal if you struck someone on a bike or someone walking. The approach to this intersection from an automobile standpoint, there's a center concrete separation median, not a median, that offers any refuge for someone on foot or bike, but wide enough to create a physical separation between the travel lanes.

There's two lanes of traffic moving in each direction. There's multiple access points along this road with in and out turning movements, but no crossover movements except at the signalized intersection. There's sidewalks directly adjacent - electric poles adjacent to the sidewalks - and then the typical turf, and then some trees that are medium height adjacent to the sidewalks. Here's what the conditions look like as you're heading towards the intersection in an automobile.

This is where [in] a little bit I'm going to flip over to a different screen because the trail merges here onto 86th Street. I had shown the south side. If the bike was coming on the south side, this is what that would have looked like. Let me flip over here and show just from Google what it looks like from the north side, which has some similarities.

This is the north side condition. You can see that little fence along the south side there. Here's what it looks like as an approach from the north. Let me go back then to my slides and we'll continue on.

The intersection itself. From the automobile standpoint, there's left turn lanes and both east and west approaches. So, the approaching traffic will be crossing in front of you in that left turn lane in your direction of travel. The turning traffic will get out of the way. So there's a certain amount of throughput. The center concrete separation median diminishes.

It's still there for a while and then it goes away. There are two lanes of traffic moving in the same direction. The north corners access point has a very wide curb radius and a very generous approach for automobile travel. The North access is designed to accommodate two vehicles in each direction. There's a total of 85 [feet] in access with there.

Here's the kind of schematics of the intersection in terms of its size. You can see the 80 foot, 85 foot wide crossing area with the two entrance at 24 foot exit at 28 foot coming through there. You can see the 11-foot lanes, travel lanes. Here's what this looks like from image standpoint. Again, continuing with the intersection conditions for the automobile driver.

The sidewalks in this area start to blend in with the driving surface. There's no crosswalks on the east side, so that would be the near side as the driver entered the intersection. There is a crosswalk present on the west side, the far side of that intersection. The signage there is a pedestrian sign and like a lookout for pedestrians that's hung from a wire above this intersection.

There's electrical poles that we see are still present here and the traffic signals themselves are hung from wires. So this is what that looks like. You can see the pedestrian sign there hung from that wire. And then the signals themselves. The conditions for the trail - you've got 70 feet of total crossing with, again, no refuge. There's two lanes of through traffic in each direction.

One lane of left turning traffic. The crosswalk is present on that west side. There's a permission button on the pole that is coordinated with the signal. We did have some video of these intersections and it's a very, very long, excessive wait time for someone on a bike or on foot, especially in inclement weather conditions. Here's what that intersection looks like. The police report suggests that the person would have been traveling from the left of the screen to the right.

The panelists here from this neighborhood are suggesting it would have been the other direction from what you're looking at, the right to the left. Here's what this looks like. Looking north and that's it. Thank you, Rachel.

Rachel Quednau: Yeah. Thank you, Chuck. So now we're going to go to our panel of experts here and start talking about what you all consider to be factors that played into this crash in the built environment?

Melany Alliston: Can I ask one quick question about the intersection first? Do we know which lane the driver was in, right or left lane westbound?

Chuck Marohn: The driver was in the left lane. Yeah, I mean, the police report suggests that the driver's in the left lane.

Rachel Quednau: Yeah. Thanks. So, Connie, let’s start with you. What sort of factors do you consider that played into this crash? And my colleague Tony is going to be taking notes as we speak so we can track all these and make sure to unmute there. Yeah.

Connie Schmucker: Part of it is as you approach the intersection as a motorist, you have no idea that there's a major trail crossing there. There's some minimal signage. There's one

crosswalk that just looks like a crosswalk and there's, you know, over a million people who go through who use the trail on a yearly basis. So there's a lot of people who use that. And it's a major bike commuting route as well. So you get a lot of bike commuting traffic in the morning and evening. So I think part of it is lack of awareness of the motorists to really watch for anybody crossing.

Rachel Quednau: Yeah.

Connie Schmucker: So signage is one thing, but the photos pre-date – actually, there are a couple of changes that have been made to the intersection. Pretty minor, but there are no turn on red signs that have been added at three of the four approaches to the intersection.

And there is now a trail user phase only part of the signal phases. But most people who have used the trail for the last 20 plus years have no idea that there is a "trail user only" phase. And so a lot of times when the light turns green for the north or southbound parking lot entrances, the trail users will go because they don't realize that they have [their own phase]. If they push the button, they will get their own phase.

Rachel Quednau: So we have a bike trail that's highly used intersecting with this very busy road, and people who are driving are not aware of the trail. They don't or they forget about it and they're not paying attention and recognizing that there might be people trying to cross.

Connie Schmucker: Yeah, and there are two signalized intersections very close to this signalized intersection as well. So, it's you know, it's a very busy there's 35,000 cars a day. There's a lot of a lot of traffic that flows through there. But there's also, you know, part of the reason why people didn't get up to speed when the speed study was done was because they got stuck by the previous light. Really not a lot of room for them to get up to speed before they get to this intersection.

Rachel Quednau: Gotcha. Okay. Thank you, Connie. Let's go to Melany and ask again, what factors are you noticing that contributed to this crash, especially in the built environment?

Melany Alliston: Okay. So I don't know if somebody can bring up. First, I wanted to see kind of the overview photo of the intersection. This particular intersection has a particularly long sight distance to that that traffic signal.

Rachel Quednau: Thanks, Chuck.

Chuck Marohn: Melany, where would you like me to zoom in here?

Melany Alliston: So I want to see the the whole area between Westfield and the trail crossing.

Chuck Marohn: Do you want me to drop in so you can see it from the ground or is you?

Melany Alliston: Let's show the aerial first, because I want to show you where the sight distance starts at. So normally when you're looking at sight distances, the rule of thumb that we use as a quick check is ten times the posted speed, which in this case would be 350 feet. But as you saw on the graphic with the dimensions, the shopping center entrance and this intersection is 85 feet wide, just the crossing, the traffic light above the crosswalk is about 100 feet from the stop bar where the vehicle would normally need to stop.

So that adds another hundred feet, putting the sight distance point almost back at Westfield Road. And so if you want to drop in kind of yeah, right about there, you know, you showed this "what the driver sees", but you can see that they really can't see that signal. And certainly can't tell whether it's red or green from the point where they need to start slowing down to stop.

You can also see there's a lot – a lot – of visual clutter around here. So there are signs in front of those traffic signals up there. They don't block them, but they do. You know, distract from them.

Chuck, if you could go up close to the intersection to I think part of what may play into this is a maintenance issue. You know, first of all, these are pretty, pretty old looking traffic signals. They lack the backplates around the outside of them that make them more visible to drivers. But they also seem to lack the wire under the bottom of them that holds them in place.

And you can see that the one on the right even is tethered to the nearest pole with a wire that just stops at that signal head and it's crooked. If the wind is blowing and the bottom edge of those things are loose, you know, it's going to turn the traffic signal potentially away from the way a driver would see it.

In this case, knowing that a lot of wind travels from west to east, it would blow those signal heads toward and up toward the driver and upward. So, you know, something like that could have played in as well. So there's a lot of lot of different things. You know, they also - that push button for the cyclists and pedestrians who are traveling from north to south is in a location where, you know, typically a pedestrian especially might not even notice that it's there.

And it the is, from what I could tell from the videos that folks took is that you have to push the button to call the pedestrian signal. And so, would it be safer if the pedestrian signal came up automatically in this location? So there's, you know, a lot of different things. But the one thing in kind of looking at the data that was collected afterwards, don't forget to go out and take the bigger picture view and go to the extents of the sight distance for the drivers and for the cyclists.

When you're looking at things and look at everything between those far extents, not just the immediate area of the intersection.

Rachel Quednau: Yeah, so a lot of issues with sight distance to the traffic signal, visual clutter that would prevent people from noting that the light was red. You also noted some maintenance issues. Maybe those have been fixed since those images were taken.

But yeah, lots of lots of issues with drivers. Not seeing the traffic signal properly. So, Damon, let's go to you. I know that especially you have used this intersection from the perspective of someone on a bike, so maybe that plays into your perspective, but can you tell us what factors you see that contributed to this crash?

Damon Richards: Well, Melany hit on a big one is that there's an incredible amount of clutter for a driver in that section of 86th Street, and that's when they're worried about other motor vehicles coming in and out of those different driveways, they're less concerned about seeing pedestrians or cyclists they're looking for something going fast. That's a problem. As Connie talked about. This is a really, really heavily used trail. But unfortunately here in central Indiana. People who don't use the trails just really don't know where they are. And so a lot of people that are driving through there frequently aren't aware that they're crossing a very important part of our greenway system. So that is, I guess, reduces the amount of tension they've had.

Rachel Quednau: Got it so lack of awareness about the trail, drivers paying more attention to cars intersecting from those parking lots instead of paying attention to somebody that might be on foot or on bike anywhere. Edward let's go to - .

Matt Duffy: Sorry, Rachel, to the jump in on that. Just to give people more context about the modern trail as you head. This is in Indianapolis, but as you head to 96 three, which is one of the next major Ross streets up and you have a big interstate there. A lot of these crossings are grade separated and so you don't have the conflict at all further north.

But this is an area where you don't expect to see a lot of pedestrians. Generally, people are looking out for vehicles except for the Monon trail, where, as people said, there are a lot of users here. And so I think it does catch people off guard. And oftentimes people have this experience right where you're walking down the street and car almost runs you over and they don't even see you, right, because they're not expecting you because on most of their trips they don't see people walking or biking.

And that's pretty, pretty common in this area of the city.

Rachel Quednau: Got it. Yeah. Matt, why don't you keep going? What other factors do you see that played into this crash?

Matt Duffy: Oh, sure. Yeah. I think one thing and I apologize if you mentioned this, Melany, but - the signal heads themselves. Typically you want one signal head per lane of travel. And so to having another through traffic signal head and then a left turn signal head specific would be advantageous here. And then another item to note is back plates onthe signal heads.

Indiana Department of Transportation usually will put back plates on the signal heads and the city does that sometimes as certain locations.

Rachel Quednau: So that would you clarify for those who don't know - what's a backplate on a signal head?

Matt Duffy: So a back plate is sort of border around the signal heads that has a reflective strip on it. And it just sort of makes the signal head pop a little bit more and contrast with the environment behind it. And studies have shown that they are more visible and easier to spot. So in Indiana, they do a back – black, back plates with a yellow reflective strip around the border.

Some other states just do black around the the signal head itself just kind of depends. So those are a couple of things that that could draw more awareness to the signal itself. And as Melany mentioned, that it's very close to other adjacent signals. I mean, easy to lose that with everything else that's going on. One other thought, this.

Chuck Marohn: Is the kind of thing you're talking about, right?

Matt Duffy: Yeah. Yep.

Chuck Marohn: As opposed to you can see the signals up here. Don't don't have that. They're just the can without the - It's like having a picture frame that brings it out a little bit. Yeah. I didn't uh - Okay, very good.

Matt Duffy: Yep. Another thought on the crossing itself. I know the city has implemented new timings, so I think this is a lot better for the trail crossing, where it limits the permissive turns across the trail, which is common for a lot of pedestrian crossings. And they did install the no turn on red. But again, that's one of those things where everyone kind of points to if we just had no turn on red, then we wouldn't have this conflict at all.

But, you know, you still need the person to follow that regulation, which oftentimes doesn't happen either. And this is a spot location, a very auto-oriented area where maybe on someone's entire drive they go through 10 to 12 intersections, signalized intersections, and maybe none of them or in this case, one of them has a no turn on red.

So it just kind of makes you question what the compliance would be or if they even notice it, if they're used to that number of intersections where there is no "no turn on red" there.

Connie Schmucker: I'm going to jump in a little bit. We did a citizen led traffic study and with our 5 hours of non-overlapping video, there were 91 instances of people turning on red.

Rachel Quednau: Even with the signs?

Connie Schmucker: Even with the signs and 11 people running red lights. So that's two an hour and 44 encroachments of the sidewalk, meaning the trail users had to go around the cars because they were blocking the crosswalks.

Rachel Quednau: Thank you. Yeah, that's good to know. Edward, let's go to you. What factors did you notice from your perspective on this crash?

Edward Erfurt: Yeah. So when I'm looking at these intersections, I'm looking at it from the urban design perspective and I'm looking at through the experience that people are having and probably a little bit bigger perspective than maybe we would look at the individual intersection. So looking at this condition, this intersection as you're approaching it, because this is about the point that you'd have to realize that the light is either red or green as you're going through the intersection, no matter how many signs you put here, the built environment of these driveways are all telling you to go faster and get on or off the road as fast as you possibly can.

Your perspective here and you know, the retail folks like Taco Bell and I think there was a Steak-n-Shake. They all get where the driver's eyes are. They're all up here where all the wires are. It's up high. So there's nothing here focusing you down to the street and you can see again, I may be catching the traffic light -

I'm definitely not catching anybody in the intersection. And it's reinforced in this particular intersection because right in the center for the pigeons and the hawks is where the pedestrian sign is. It's not in the lower area where I'm expecting to see a pedestrian. So from an experiential environment, you just, your eyes are in the wrong place.

And looking at land use and why - why is there so much traffic on 86th Avenue and why would there be this type of speed in the overlap? I like to look at these places and kind of what I call x-rays or a CAT scan and I had to look at it without all the noise on it. And so I'm looking at the cross streets and I'm looking at the network and I found I couldn’t on this small area, well, essentially not small, but within this spectrum I could only find one east west alternative outside of 86th Avenue.

I had to actually go up much, much further. So if you just draw on the roads where all of the contributing network is, you can see that we're pushing all the cars into these four cross streets in this multi mile range. So we're forcing a lot of cars in one area because there's a lack of network and that results in these giant super blocks.

So all of the traffic that needs to get in and out of these locations have to go to these intersections. So if we just look at the site, this is really now a little more clear when you get down to the site level because things aren’t connected. So within this, you can see on the right where Nora’s corners is, this entire parcel to get from here to Hardee's or here to Aldi.

You have to get in your car and go out on 86th or out on Westfield. You actually can't get through. It's blocked. You also have driveways right next to each other. They do the same thing

and if they were combined or removed, you could yield out more parking and more development in these locations. So observationally, frankly, I'm surprised that cyclists aren't going to break through here when we see these.

But again, here's another break where there's -

Chuck Marohn: Are you – moving your – are you showing something beyond the one PDF that you've got out?

Edward Erfurt: Yes.

Chuck Marohn: Okay. Because we're seeing the one pdf Crash x ray final and it shows. Yeah. There you go. Now we're seeing more.

Edward Erfurt: Okay, let me. Yeah. So looking at, looking at these aerial views, again, the site along the corridor, all of the focus is to the top. All the focus is up when you look at the street network within this area and we focus on the crash location. We, as we look at this, there's only two cross streets in this view.

So you really have to go and zoom way out to be able to see where all these cars are coming from. And granted, 35,000 cars is a lot, but not for the frankly, low density in this location. But it is a lot when you only have one East-West connection for this whole distance of true contributing network and you could see the super blocks, then that form within that network, just around this crash site and zooming in on the site, we can begin to see where that network doesn't exist.

And I could, I can begin to see as I start to overlay locations of where Nora's corner is, again, completely isolated and that there are, you know, it's great that you have one twos, twos really bad. So you end up with two of the two of the same type of entry points in and out close to the trail.

You can also see there's another driveway out where again, this would be an area that I would think be high risk for the cyclists at this area related to the crash. But as we look on this short stretch, there's a lot going on that does not focus you on where the bicyclist coming across this trail would be.

And trying to increase connectivity and reduce clutter, I think would really help at this location.

Rachel Quednau: Thank you, Edward. Yeah. So there's a ton of volume of traffic being funneled into this area, a lot of clutter, a lot of driveways intersecting with the street that are all contributing. Chuck, do you want to add anything in terms of factors yet that haven't been mentioned yet?

Chuck Marohn: Most of what I had written down has been mentioned. I think everybody's brought up some the most salient points. I think maybe I'll start where where Edward was ending, which is kind of like a macro view of this. I wrote down, I think putting this trail on this major roadway intersecting this way just from an overall planning perspective is very reckless.

Chuck Marohn: You know, Edward Said you have limited connectivity, I'll say, it in a different way - You funneled all the traffic to one East-West corridor and you funneled all the bike traffic to one North-South corridor, and that was done intentionally. I mean, these were major investments over multiple decades to do this. The idea that you wouldn't have some awareness of how the intersection of those two would be done with great care is - just reckless to me.

Like, I don't know how you get to that point. A couple little technical things as we're moving along East 86th and I will share my screen. We've talked a lot about the clutter and I think the clutter to me is one of the proximate factors. It's one of the big things here. But if you're a driver in the left lane, you're getting the signal here that, you know, everything is all clear.

You're going through multiple signalized intersections. But, you know, you are getting - essentially being told by this design that all is good, like this place is set up for you to not have to worry about conflicting traffic. They've taken out the crossovers. So you essentially have - on that inside lane, on that left lane in this direction - you essentially have something that's designed to function very much like a highway high, higher speeds through traffic.

Let's get that turning traffic out of the way. There's not going to be any crossover traffic when you combine that with the way that all of this electrical line clutter just kind of blends in to the traffic signals - it all kind of seems like one thing you can just zone out. And I do think that that is the kind of primary thing here, is that you had someone who was driving along who every subliminal factor in the design was telling them not to worry about anything, that there is nothing in their way, nothing that they should be concerned with.

And all of the devices that were put in to try to signal something the opposite of that were blended into the background. So with that, I will end I think everybody else has brought up all the points I was going to bring up in a really productive way.

Rachel Quednau: Thank you. Alright. So I'm just going to we're we're we're doing this as we go. So Tony's been taking notes and I want to just review the factors that were brought up so far. Are you seeing -

Tony Harris: I can’t see them on your screen.

Chuck Marohn: No we’re seeing your Slack on your screen.

Rachel Quednau: Alright. How about now?

Chuck Marohn: Yes.

Rachel Quednau: Alright. So here's the factors that we've discussed. You know, this is a brief summary, but a huge one that was brought up - lack of awareness that the trail is there. And related to that, you know, any lack of signage that would tell drivers there is a trail crossing here. Another issue that was discussed at length was visibility issues.

So the traffic signals don't pop for drivers. There's a long – the sight lines from farther back are not it's not easy to see the signal. There's visual clutter that is distracting people from noticing that the signal might be red. And generally, there's just a lot to look at that would prevent you from noticing that a person is crossing the street and that you need to stop for them.

So a lot of different visibility issues. There's also some maintenance issues brought up and, you know, those may or may not be resolved, but that the signals are old, the design is outdated and things like that that would contribute to people not, again, noticing that they need to be stopping. Volume of traffic and the way that the street network is funneling people into the - just a very few set of intersections means that a ton of people are driving through this area and then to round us out as Chuck brought up the we're also funneling this trail traffic into this area and not necessarily not great planning in that regard, having that much cycling traffic intersecting with that much car traffic.

So I'd like to go around to everyone and just ask you to, as you think about these factors, again, you know, the lack of signage, visibility issues, maintenance issues, the volume of traffic, the street network, what for you is the number one thing that contributed to this crash from your observation, what's that primary factor?

So I'm going to start with Connie and just ask, what are you seeing as if you could point to the biggest, most significant factor here?

Connie Schmucker: Well, since the motorist was in the left lane, you know, Frank, coming from, you know, from the north to the south, wouldn't see this vehicle approaching the intersection. They would have been hidden by the other lane of traffic.

So, you know, having you know, having people be aware that there is a trail there, although people know about the Monon, if anybody knows the name of any trail in Indianapolis, it's the Monon. Whether they know that that's where the Monon crosses 86th Street is another story. But the Monon is like the icon of greenways in Indianapolis, and it's a Hall of Fame trail from the, you know, from the Rails to Trails Conservancy.

So it's well known. But this crossing obviously is not necessarily well known. So I think, you know, making it more, more visible to everyone so people know how to find it and all that.

Rachel Quednau: So lack of awareness of that trail is there and making that really clear to drivers, especially. Melany, let's go to you. What would you identify as the most significant factor here?

Melany Alliston: Well, in addition to what, Connie, I think, too, it's creating distraction for drivers, again, with all the visual clutter, with the signals that are not very visible from where the driver needs to begin stopping. You know, we've manufactured some of those distractions in the way that this intersection is configured. So and, you know, as Edward pointed out, drawing the driver's eye upward instead of to the crossing where the bicyclist or pedestrian would be is another, you know, part of that distraction.

Rachel Quednau: So a lot of distractions for drivers. Yeah. Thank you. Damon, let's go to you. What would you say? Seems like the biggest, most contributing factor here?

Damon Richards: That when they designed the Monon, they didn't spend the extra money to put in a bridge or on everybody who's ever been involved with this recognizes that, these two flows of traffic should be separated. It just - you saw all those power lines. Those are high voltage power lines. So getting those moved in order to make a bridge gets really expensive. As soon as you start going under in an urban environment, you just rack up prices. So the decision to build that intersection where it was built is really the problem.

Rachel Quednau: Okay, So yeah, just having those two flows of traffic intersecting with each other in the first place. Okay. Matt, let's go to you. What would you identify as the most significant factor here? to your mind.

Matt Duffy: I think that crashes like this - it seems to be a symptom of the way that people routinely drive their cars through environments like this, right? Where they have no idea the risks that they are exposing to people outside of their vehicle, to that matter, to other people in other vehicles as well. It's just that they're less susceptible to that danger.

I mean, you can jump in a car with somebody and go on a street like this. I mean, they can get up to 40, 50 miles an hour. And, you know, I often sit in the passenger seat and will observe how people drive, because I'm curious. I don't say anything. I'm not commenting on it. I'm not being a backseat driver.

But I'm just curious genuinely, how do people, when they are comfortable, when they don't see the risk in front of them, how do they drive? And a lot of people have no idea that they just are not aware, they're not expecting it. And I think most of these crashes like that, I'm sure the driver who killed Frank here just feels terrible, right?

There's - this was not intentional, would be my guess. And so, like, the big factor here is that they are not able to assess the risk while they are traveling at certain speeds where they need to make a quick reaction. You know, and that varies from person to person. And the older you get it's harder to assess that risk and that perception and we’re putting people in really challenging situations,

I think, in times like this where you run a red light and you can kill somebody, right? But people don't think about it in terms that way. So I don't know. I think the the biggest factor is, is that people are complacent when they drive and they don't understand the danger that they're posing to others on the road.

And that's because of the way the roads have been designed. And they can't - I don't think we can put the onus on the driver which often happens, right? Mistakes happen. Everybody is prone to mistakes, but limiting the severity of the mistakes is the goal or should be the goal, right?

Rachel Quednau: Yeah. Thank you, Matt. Ed real quick, do you have a primary factor that you would identify in your observations of this crash?

Edward Erfurt: Yeah. I want to build on what Matt is saying, and I think it's more than complacency. I am… - I don't know how to say this in a polite way, so I'm trying to think about this in more of a clinical way. There's a lot of apathy at this intersection. There's apathy in the way it's been designed. The distance of this intersection is the same dimension as Westfield.

So when you come to 86th & Westfield and you look at those intersections, there's an expectation of a driver that that's what you're going to see. There is no reason at this intersection for the two cross streets that come off the shopping center cannot be two lanes that the turn radius there can't be tightened up. This is standard practice that's done everywhere else.

You can see it could be overlaid with, you know, ADA could support this. The bike pedestrian could support this, a traffic engineer could support that. So that the experience on this again, I don't know how you get to 35 miles an hour and I don't know how you justify posting 35 miles an hour when it's that distance.

So that that's where I just I want to be real frank and cold about it because I think that there are a lot of really bright people that have looked at this. When I looked at the police report, it states the driver didn't even know she hit somebody until they were on her windshield. So there was absolutely no expectation of that, and even Frank, I mean, as I think some folks have described, he's an avid cyclist and is fully aware of the conditions out there.

So the conditions for both, it's just not set for this. And I think there are some things that could be changed that I'm excited to hear and see how that occurs there. But I would push it a little bit further from complacency to really apathy because there's an opportunity to build for the end result that you want at this intersection.

And I just don't think the exercise has gone to know what it is and that's why there's so much confusion and overlay here.

Matt Duffy: And Rachel, if it's okay, I've got one thought and I'll keep it brief. But there's a reason that the crossing doesn't line up with the trail itself, right? Because they decided that it would be better to have a signalized intersection at driveway access points to these developments versus prioritizing - and then fitting in - wherever this trail crossing is versus prioritizing the crossing itself, which if you put it right in line with the trail, you don't have the driveways next to us.

You don't have turning traffic to worry about. You just have through traffic. So you could, you could still have somebody run a red light there. Of course, that's still a risk. Yeah.

Edward Erfurt: I agree with that. I mean, I, I understand that. But where, where I look at is, okay, so we brought the trail to an intersection and right here, this doesn't meet any standard. It doesn't meet ADA. I mean, it's not safe where the cyclist is at. And I think if you zoom back on some of the street views on this, you can see where the cars roll up over this.

So this has been designed again, not for the car, not for the bicyclists, not for the pedestrian. It's just kind of leftover space and that's where I think there's more than just -

Connie Schmucker: Yeah, I want to add that a little bit as well. I don't know if you can get a view of looking north, but the crosswalk does not line up with the sidewalk. So, where the cars are driving, they're crossing right where the crosswalk is when they when they're turning right. There's absolutely no space for a trail user to what I call stage themselves in front of the crosswalk.

They're going to get hit by a car turning right. You have to be closer to where the crosswalk signal is and that's where you stage and so they're coming out, you have to basically come out into roadway in order to hit the crosswalk.

Rachel Quednau: Thank you. Chuck, if you want to add any comments about contributing factors and -

Chuck Marohn: In terms -

Rachel Quednau: Of your recommendations.

Chuck Marohn: In terms of this particular crash, to me, the primary factor is and I'm going to agree with Matt and with Edward, but maybe say it a little bit differently. The speeds that are facilitated through this corridor, through this intersection are just way too way too dramatic for the intersection of a trail. And the - I think apathy is a good way to state it.

As Edward said, you know, you lull the driver into a sense of security as you bring them through this very dangerous place that has been engineered to create, you know, the conflict. But ultimately, it's the speed at which people are entering this intersection and the automobile that

both magnifies that - the danger, but also, you know, interacts with that clutter and that apathy to create the dangerous situation.

So to me, it's the primary factor is that - the speed that's being facilitated.

Rachel Quednau: So now we'll move into something that we've already started talking about, which is recommendations that might be considered to improve this intersection and make it safer for everyone. Connie, again, let's start with you. What recommendations would you offer that might contribute to making this a safer place.

Connie Schmucker: Ultimately, a tunnel. So, but even if we had dollars tomorrow to build the tunnel, it's going to be years before it will be built.

So I've been working on, you know, with a number of people to do a tactical urbanism project this year for this intersection, for this crossing. And part of that is to put some information in the pavement itself as you're approaching. So put the Monon logo and trail crossing words. And ironically, when we were doing the speed study, I noticed that they did use to a long time ago, it's faded, have PED crossing in the lanes as we were approaching the intersection.

There's just bare remnants, but you can see that they actually did do that at one point, put those in, extend the curves in all four directions. Put crosswalks on the north and south sides of the road as well, because there are a lot of kids and students that come from north central, just west of there and come from Westfield and go to the Monon trail and people on either side of the road head towards the trail and there's no crosswalks at those - at the intersection except for the trail crossing.

I was going to put it on all four, but it was pointed out to me there's no signals on the east side of the intersection, so I don't want to encourage people to cross because there's not a crossing signal. And then just we're working with an elementary school that's nearby to work on a mural on the sidewalks that lead from the trail to the intersection.

I think it's telling that the elementary school that's very close on 91st Street and the Monon, they will walk down to the Monon to 86th and then turn around. They will not take their students across that intersection. So so those are the things we were looking at, you know, doing some bump outs.

I don't know if there's enough space to do pedestrian and refuge in the middle of that intersection, but also extending the crosswalk, so it's wider when you get people going from north to south, trail users multiple time - you've got bikes and walkers and runners crossing at the same time - the width of the crosswalk that exists is nowhere close to what it needs to be. It needs to be extended farther west, I guess, or farther into that intersection one way or the other.

But anyway, those are those are what we're looking at doing with the with our tactical urbanism also signal timing, making the signals so that they are more visible and doing something to make people more aware of the No Turn On Red signs, which are really small and obviously are getting ignored anyway. But but that's, what we're attempting to do with our permit.

Ideally stuff will, you know, we'll get the permit, we'll be able to do the project this year and some of that stuff will be able to go into some kind of permanent solution until we get a tunnel.

Rachel Quednau: Yeah. Thank you, Connie, and really glad to hear about the changes you all are actively working on. Melany, any recommendations that you would add?

Melany Alliston: So I like what Connie said, and I would start with a tactical urbanism kind of project or something that can prevent something like this from happening tomorrow. But then also, you know, seeking out the funding for the changes that you want needs to start today or it's going to be another 30 years. And so, you know, working through kind of a multiphase plan of improvements, you know, particular things that I would also think about here - lower the speed limit to 25.

There are intersections pretty close on either side of this. There is absolutely no reason for it to be posted at 35. I know the slide with the measurements showed 11 foot lanes, but actually moving them or measuring in Google Earth that looks like that doesn't include the gutter pan. So there is a little more space there. So stripe it, just do it with striping, narrow those lanes down to about ten feet, get some pedestrian refuge in the middle.

And a couple of the videos that were taken, I saw people getting stuck in the middle in a very dangerous little two-foot space. Those are things that we can do today. And then in the larger sense, you know, I would first look at replacing the signal heads, getting those back plates around them. They look like they are the older incandescent bulbs which get dimmer over time.

Replace them with LEDs so they're more visible just making what's there visible - get rid of some of the signs that are up on the wires and put them at ground level where they should be. The tunnel - I agree that, you know, with the volume of bike traffic and the volume of car traffic through there, you need one.

But then also neglect the fact that there are attractive destinations like fast food restaurants and schools that are generating kids who like to eat at fast food restaurants - you are going to have people who want to cross at grade there and they're not going to use a tunnel because they have to go 500 feet away to slope down to get into the tunnel and slope back up.

People are lazy. So, you know, making sure that they can cross safely at grade is still important. So I would encourage you to not forget that part as you go forward as well.

Rachel Quednau: Yeah, great points. Thank you, Melany. Damon, what recommendation would you offer to improve this intersection?

Damon Richards: Well, I'm all in for the tunnel, and you make a point, Melany, And we wrestle with that. Another major crossing for the Monon is at 38th Street and at 38th Street, we put in a bridge. And there was a big discussion about, "What about those folks who want to access things on 38th Street?" And we did end up having an at-grade crossing in addition to a bridge. So it's possible to get to the stuff that's there. And I would assume that the same process would happen here. But the majority of the users of the Monon don't get off at 86th Street because just a little south of there's a broad ripple where all that stuff is available in a much more walkable and bikeable environment.

So getting a tunnel I think is a critical piece to solving this problem. In the meantime, I think the efforts that Connie's leading to do some modifications to that intersection will build on it. And then it goes back to what we talked about a lot earlier is we need to create more awareness of the importance of this crossing to drivers on 86th Street.

I just don't think enough of them are aware of what they're crossing, even though, as Connie said, you told them,"Oh that's the Monon!" and they go, "Oh, I know what that is." But I've dealt with enough here in town to know that – knowing of it and knowing where it is – completely different concepts.

Melany Alliston: And can I just give you one follow-up point, too, because it alludes to what you were saying and what Connie talked about, that art project, giving people visual clues that this is a people space and not a car space is going to be really important.

Damon Richards: Yes. Yes.

Rachel Quednau: Thank you. Matt, would you add any recommendations to this list?

Matt Duffy: The only thing I'll add, I think I completely agree with the speed change. I think that's something comprehensively that the city needs to look at. And that's that's just a whole tangled web of a mess - the speed management of corridors like this. Melany I really like how you put that, making people understand that it's a space for people and not necessarily for cars, but to that end, to one idea is just to add planter boxes, to block off the right turn lane in the southbound direction coming out of the driveway there limiting that to one lane. So that way you have vehicles that are a little bit farther away from the crossing.

And when they finally cross the pedestrian crossing itself, the vehicle is more straight on. So it's just a higher - if they are going to turn right on red - a higher likelihood that they'll see somebody crossing there and then also work with the private development there, the bank on the northwest corner to potentially block off the driveway. Looks like you can still maintain circulation on the site, put planter boxes there, that way, you don't have that driveway conflict where people that are using the Monon are getting around to the crossing on 86th themselves.

Connie Schmucker: One of the things that we have in our draft plan is to put planters, as Matt has suggested, as well as cross or take out that that entrance and exit of the bank that crosses the sidewalk that's connecting the Monon to the intersection.

Matt Duffy: Just as a way to draw people's attention to the crossing itself and take them out of that complacency that we've talked about.

Rachel Quednau: Yeah. Thank you. Edward. Any recommendations to add to this list?

Edward Erfurt: Yeah. So a lot of my experience has been working in small towns, way smaller than Indianapolis with way smaller budgets where - there are all of these conditions existed. And when I look at this particular intersection, I would look at the things that could be done really almost tomorrow. And I joke about it where it can be done with paint.

It can be done with paint, flower boxes. It can also be done through maintenance. So anywhere that you can go and get one of the driveways consolidated or removed off of this section. So again, you remove some of those conflicts, you should do. My experience has been normally if you talk to a lot of these property owners, there's something else that they need or think they have a shortage of and by removing that, it improves their condition.

The other thing is the entranceway to all of these shopping centers - with what I've heard today of about how many people have run the red light and how many people are not paying attention to the right turn on red - it only leads me to believe that there needs to be a reduction to all of the entrance ways to these shopping centers and frankly, an in and an out is all that's needed.

And for a lot of these retailers that will help to drive. So it will help to drive traffic in front of the shops. It can be done through a maintenance program. You know, I look at all this stuff, all these curbs have to be replaced at some time. You can start with paint, start with some movable objects. Those are things I would be putting in right away.

The other thing talking about the Monon is a Hall of Fame trail. It's far from at this intersection. It's really far from. And again, putting some of that in the wayfinding and the experience here, so that is at a scale that the cars understand that they're in an area by lowering the speeds, building it so that they drive those speeds ,and then providing some of those celebratory things that make this place special, I think can be put in there. All of those.

And the fundamental thing that will make this successful, my recommendation is to get as many partners involved. So we've talked about property owners. There's an opportunity to include public arts, there's opportunity to involve, bike ped and trail folks. There's opportunity to involve the schools. Again, these are the things that provide in these projects. The more hands-on that you can get to the awareness of this, it will help the drivers that drive thru here

and the cyclists that ride to this intersection understand that this can be a more compact, urban, walkable area.

And with some really simple improvements, you will start to yield those results and I would encourage all of that to occur.

Connie Schmucker: I want to speak a little bit to partnerships. We have enlisted the Nora Alliance, which is alliance of neighborhoods and businesses in the north area, and they applied for a grant from the State Department of Health for our tactical urbanism project, which we got approved. And they have been doing a lot of reach out. But because of that application, we had a letter of support sign on letter that had 15 different organizations.

And then we had Indigo signed on, that had a separate letter of support. The state senator for that area has a letter support. So there is groundswell of community partners who are very interested in seeing this, seeing this project and seeing this intersection improved.

Edward Erfurt: Yeah, I would get them out there on a walking audit. I would put them in this intersection, I would bring them all there because the things that we've observed today, 95% of that is maintenance. And there are things that if we're all there, they start to see that. So the shopping center realizes, hey, we're repaving next year. Melany and I did a project in a small town where we had to fix an entrance to a shopping center and we did a road diet.

That would be the best terminology for it, and it resulted in an acre of pavement being removed. You're probably pretty close to that with some of these driveway areas. And what that resulted, the bottom line, is it saved several hundred thousand dollars in new construction. It was actually cheaper to do the right thing than to put back what was there.

So - in - when you get the folks out there and you experience it, the partnership is about that experience. They realize, “This is really ridiculous. I didn't know I had to stand in a in a turn lane to cross the street. How can we fix it?” Well, we don't need two 14-foot lanes into our shopping center. We could do one.

So those are the things that that I would encourage you to keep pushing and I hope that through the tactical urbanism project that you get the opportunity to invite those folks ahead of time to see how bad it is today. And then with your minor changes, they can see how that little bit of effort has - can result in significant improvement in this area.

Melany Alliston: And when you do your walk audit, bring a wheelchair.

Rachel Quednau: Good advice, Chuck, anything to finish this up? I know we're running over our time here.

Chuck Marohn: Yeah, well, I feel like there's two, you know, two things. I want to go back to what Matt had said earlier about the back plates on the lights. I mean, I do think that part of

making this intersection work is actually recognizing that with all of the aerial visual clutter, there's a responsibility to make those signals really stand out. And really, you know, not be something that could be easily overlooked.

Whether that if they're going to stay hanging, there's got to be some kind of a back, you know, backing on it to make them stand out. I think if you're going to have it be a signalized intersection, you really need to make the investment in a pole there and have it go over and make it, you know, much more visible for people.

I think the other thing and I respect, you know, the other panelists here - I'm not on team tunnel. I get why from a recreational standpoint if you're a through traveler a tunnel would be great. But the reality is that, you have a lot going on here and this intersection is not safe for people on foot. It's also not safe for people in a vehicle.

You know, I know there are a lot of vehicle-on-vehicle crashes that happen in the same intersection. Somehow going back a distance and tightening this thing up, Melany said Narrow the lanes I think that's an absolute prerequisite. I think also, you know, as this place is reconstructed, widening out that refuge, tightening things up so that as drivers are traveling in this part of the corridor, the signal that they're getting is that, “I've got to be more heightened aware. I need to naturally slow down. I need to have a greater awareness going into this intersection.” It's just going to augment all the things that everybody else has brought up.

Rachel Quednau: Thank you so much. We'll close out here with some gratitude. Thank you, Connie. Especially who nominated this crash for our discussion and helped provide many of our materials. Thanks to my colleague Tony, who's been working behind the scenes and to all of our panelists today for contributing your insights to this conversation. Thank you, also to our sponsor, who's an anonymous donor.

You can find a recording of this session and all of our Crash analysis Studio Sessions by going to strong towns dot org slash crash dash studio (www.strongtowns.org/crash-studio). And you'll also find resources soon there for starting your own crash analysis studio in your community. On behalf of my colleagues and our panel, thank you for watching this session. Keep doing what you can to build a strong town.

Take care.