Crash Analysis Studio – Session 11 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

Tony Harris: Okay, hello everyone. People are filing in, but I'm going to go ahead and get us started. Welcome to the Strong Towns Crash Analysis Studio. We're glad that you're here today. My name is Tony Harris, and I'm the Action Team Coordinator with Strong Towns. And in a moment, I'll introduce you to the rest of our expert panel. But first, let's talk about why we're here.

Last year, over 40,000 people died in automobile crashes in the United States alone. Hundreds of thousands more suffered traumatic injuries, and despite the efforts of public safety officials, these numbers have been increasing, and they affect all of our lives. There's a prevalent misconception that car crashes are called solely by mistakes that drivers make. Looking at your phone, changing the radio, drinking alcohol, speeding. When a crash occurs, the North American response is to send out law enforcement and insurance agencies to assign blame. We ask questions like, "Who made the mistake that caused this crash, and who should be blame?" The reality is that crashes are caused by multiple factors, not just driver error. When a

traumatic crash occurs, we need to identify all the contributing factors, and learn all we can from the experience, so that we can reduce the number of deaths and traumatic injuries in our communities.

So, what you're going to see now is a Crash Analysis Studio session. Drawing from the best practices of the medical profession, we've convened a panel to review a crash that happened in Denver, Colorado. The collision took place at an intersection on a summer night when a motorist struck and killed a pedestrian in a crosswalk. So today, I'll start by introducing you to our panel, then we'll review the facts of the crash, and alongside our guests we'll assess the design factors that contributed to the collision. And again, our goal is not to assign blame. Our objective is to learn as much as possible about what happened, and identify the many factors that contributed to this tragic event.

So, before we get into the details and speak with our experts, we need to begin with the fact that this tragedy resulted in the death of Gregory Robinson. So please take a moment of silence with me to offer and acknowledge him and the loss of his life. Okay, thank you.

So I'm now going to introduce our expert panel for today. So first we have Adam Spiker, who moved to Denver to attend the Colorado School of Minds in 2014. He has been living in the Denver Metro Area since, and Adam has multiple years of traffic engineering experience. Generally, Adam rides his bike to get groceries, commute to work, go to the gym, and meet up with his friends. He joins us today as both a technical expert and as a concerned local.

Next up, we have Chris Harlan, who lives near and frequently bikes through the crash location, and Chris helped our group of Denver enthusiasts with the crash selection process. Chris currently works to protect investors at an organization which oversees the securities industry. He has been passionate about urban design and architecture for all his adult life. And Chris found out about Strong Towns almost a decade ago when Chuck Marohn appeared as a guest on his favorite economics podcast. Chris heard about and joined the Denver Local Conversation

group earlier this year. And our next panelist would be Nam Henderson, who also lives near the crash location. Nam currently works in healthcare informatics. He is a friend of many architects and a lover of design. Over the years, Nam has participated in multiple advisory boards, concerned with redevelopment and environmental protections. He is currently serving his third term as the district eight representative for the greater Park Hill community regional neighborhood organization or RNO. Since living in Denver, he has also been a member of the Congress Park neighbors RNO and their green team. He isn't volunteering with the greater Park Hill community food pantry and sustainability programs. You can find him working with other local nonprofits like historic Denver and walk Denver, which is now known as Denver Street's partnership.

And then finally, we have Chuck Marohn who is the president and founder of Strong Towns, a civil engineer and author of the book *Confessions of a Recovering Engineer: Transportation for a Strong Town*. And Chuck developed the initial idea for the Crash Analysis Studio. So now I will walk us through the details of this crash in Denver. Perfect. O

Okay, so we'll start with what we know. We know that Gregory Robinson was fatally struck by a motorist when he was walking westbound across north Quebec Street along East 36 Avenue. The collision occurred at 10 p.m. on July 3, 2022. Robinson was pronounced dead on the scene at 10 11 p.m. with multiple blunt force injuries listed as the cause of death by both the media and the crash report. The crash report and multiple weather reports also tell us that it was cloudy weather with temperatures in the low 70s that evening.

So our volunteer and local expert today Chris Harlan confirmed that the speed limit on Quebec Street is 45 miles per hour and the limit on 36th Avenue is 30 miles per hour. We know that the motorist was driving a black SUV and according to the police report was issued a unified summons and complaint on scene for careless driving resulting in death, driving a motor vehicle when licensed was restrained, and having no proof of insurance. Now there was at least one

witness who heard the crash before first responders arrived and first responders were listed as other witnesses in the police report.

So, here's a map to illustrate the crash location. The red pin is where the collision happened on northbound Quebec at East 36th Avenue. So I want to note that southbound Quebec is actually to the left of this median that's gray here, right, so southbound Quebec is here and you'll see that a little more clearly on this next slide.

So, in this visual we've zoomed in a little bit and you can see that we have represented the pedestrian in yellow here crossing the north leg of the intersection. And then we've depicted the motorist with the orange rectangle traveling northbound and the collision location is outlined in red. And again, southbound Quebec Street is across the median over on the left hand side. So we managed to gather a few more details about the crash. The damage to the vehicle and airbag deployment suggests that this was in fact a high-speed collision. The motorist reported that they were traveling between 45 and 50 miles per hour. And then detected the enemy who was listed in the crash report conducted a Horizontal Gaze Nystagmus, or HGN, Field Sobriety test with the motorist and declared that they did not appear to be intoxicated or impaired.

Looking at the site conditions, we know that north Quebec Street is a roadway that used to be used as an approach to the Stapleton International Airport, which I believe closed in 1995. North Quebec Street has five northbound through traffic lanes at this intersection with the one on the far right ending shortly after the intersection. We know that north Quebec Street facilitates access to interstate 70 interstate 270 and state highway 35. And we know that there are signals present at the northeast and west legs of the intersection with the south leg having a stop bar and a “stop here on red” sign. And then there are also marked crosswalks on all four sides of the intersection.

So our nominator Ed Callahan and some of his colleagues gathered photos and visuals of the intersection for us that I'm going to share briefly. This first one here is a pedestrian perspective of the crash location. So this is looking east across Quebec and we know that Gregory was hit in the lane closest to us, which I outlined in red. And in this photo, we're looking at the north side of the intersection from the south west corner and we believe the crash occurred in the left lane closest to us in this picture, which again I outlined in red. And here we have a photo from the southeast corner of the intersection looking north and northwest. So now the crash location would be on our far-left hand side.

So, we're going to show what a pedestrian crossing kind of looks like in this intersection as well. So here you can see a pedestrian walking alongside someone using a wheelchair on the east side of the intersection. And then we even included a shot of the crosswalk on the west side of the intersection. So our photographer was looking south at oncoming traffic that was heading north when taking this photo. And then this last visual that I've included is just north of the intersection looking northwest. I wanted to capture the kind of whole area of the median between northbound and southbound Quebec. Southbound Quebec would be on our left here where you can see traffic kind of in the distance northbound Quebec would be on our right.

Our nominator and his colleagues also helped us get some measurements of where the crash occurred. So as we stated before you can see five northbound lanes. There is some variation in lane width that I want to point out. So the far left lane where the crash occurred is 13 and a quarter feet wide. So we've made middle three travel lanes are each 11 feet wide and then that far right lane the one that ends shortly after this intersection when you're heading north - that one is nine and a half feet wide. So when you add in the planting strip and the sidewalk on the right hand side. You're looking at a total width of 70 and three quarter feet.

So, on some site conditions we are looking at a suburban development pattern here with some commercial and residential properties. And as I stated before there is access to two major interstates and state highway 35. Just north of this intersection. And then I also wanted to note

that there's proximity to Colorado Boulevard, which is State Highway 2 to the west of the collision location. And also US route 40 to the south and then nearby you're also going to be able to find the central park neighborhood, again retail establishments, some hotels and a public library. I just wanted to include this map to show the broader surrounding area. So those major roadways that I mentioned such as Colorado Boulevard. Those are marked with yellow here and you can see there are some neighborhoods surrounding the collision location as well.

So our nominator Ed managed to conduct a speed study for us at the crash location and based on the information that I received it sounded like traffic flow was pretty typical what could be. Expected in this area when the study was conducted right there was no major construction going on or or anything too abnormal that was noted. So ad looked at both the northbound Quebec Street traffic and southbound Quebec. And during the study it was found that 36% of drivers were speeding they were going beyond the posted 45 mile per hour speed limit. We noted that there were 520 cars tracked during the speed study and 85% of them were traveling at or below 48 miles per hour.

So I'm going to stop sharing my screen. Perfect and I'd like to turn to our panel now. If I could start with Adam just based on what we've gone through here today and kind of what you've reviewed leading up to this session. Are there any factors that you'd like to highlight that would be contributing to this collision and if you have Google Street view up or would like to screen share please feel free.

Adam Spiker: Thank you Tony for the background the I guess one major factor that is. That our strong town of Denver group came together. The one major factor leading to crash is speed to put it simply the design out there is really interstate like we have multiple through lanes we have. High speed limit and even higher design speed out there. I know our typical interstate lane width is 12 feet so that's that's a lane with where we comfortably go 67 the time it's 80 miles per hour. And we have a lot of things we can do with here is just one foot thinner so with

that to you alone. We are encouraging speed. I'm going to go back to overhead guide signage so. Tony if you could share your street view of the intersection real quick.

This intersection looks like to a driver and it's simply it looks like an interstate freeway which is why we saw this, this high-speed crash occur it's one of many factors but really the main factor that we identified.

Tony Harris: It was turned around here okay now we're looking forward north.

Adam Spiker: Looking north the intersection here we have we have our 11 foot vehicle lanes and 13 feet on the left lane right and our interstate wayfinding guide overhead guide signage that's taking drivers' eyes off of the road and off of street level and up towards you know. Finally your next turn. So speed speed is a number one factor here when you're traveling at high speeds it's hard to. You have a long stopping distance when there's someone walking in the road just trying to get across the street whether they were shopping getting dinner or just returning home. And in our case Greg was across four out of five of the lanes of traffic before getting hit and that number one lane all the way to the left he was traveling east to west. So just just the wide right of way alone was another factor here it's not easy to cross five lanes of traffic. I've been looking at our speed study conducted by our Denver strong town group here. So I'd like to I guess pass it off to another panelists for the time being for other potential causes.

Tony Harris: Thank you yeah the crossing distance and kind of right of way was something that came up in a conversation I had with someone earlier this week. Maybe Chris would you like to to go next and speak about factors?

Chris Harlan: Yeah definitely. Yeah I know the street section pretty well living just a few blocks away and it's an intersection I've traveled by car and even maybe more often in the warmer months by bike and yeah I have a lot of thoughts.

Chuck Marohn: Yeah hey Chris for my purpose could you - which - which direction do you live, west?

Chris Harlan: Yeah I live west from here. I live west. Yeah actually. Gregory was a neighbor by like one block away from me I never met him. But I came to learn that through reading the police report so yeah, we both - he lived and I currently live in the neighborhood North Park Hill. So Gregory was making a trip that's a lot of trips I've made on foot and on bike you know from an area with some retail, some shopping, some transit towards his home is my understanding. So yeah I mean I think that's an important theme this is a street that divides but also connects to residential neighborhoods Park Hill and Central Park and also there's a lot of services restaurants retail around here so it's a natural place for people we're walking and getting places.

I think you're right, Adam, though that the street design definitely seems to encourage going in high speeds. I don't think it's on your slides Tony but reading the police report I'd seen that there was evidence that the motorists was going over 80 miles an hour right before the collision so despite the posted limit on it and despite the fact that most people during the daytime when that study that our group said was conducted tended to be going close to the speed limit. The design definitely encourages outliers especially at night it seems. So I think one factor that's related to that is just how many lanes there are that the wide but also there's the five of them. And in the street view that you were in some of the photographs that you're sharing Tony you can see that there's a bit of a street wall on the. Eastern side of the background cool back but as you look to your laps as you look towards the west there's a whole lot of nothing.

The enormous median and so you get to some hotels that are kind of often in just as so it really enhances the feeling of being on a freeway. Additionally I think kind of a bigger theme this may be speculation on my part but based on the details we were reviewing Tony it seems like that the motorists have his suspended license. Who knows what where he was headed to or what he maybe was going to work or something social. But a person who's not able to drive legally or

in other cases may be physically is kind of left stranded in many parts of Denver in much of America. So speculation on my part perhaps but the city and this region of the city doesn't offer a lot of great alternatives. If you're trying to get from point A to point B beside taking your car so I wonder if that might have played a role just the overarching design of the city and the types of transit options and they're frequency. Yeah, I would say those are probably. Yeah, the biggest fact is that staying up for me.

Tony Harris: Thank you. Yeah, I hadn't thought about if your - if you have a suspended license right and you don't have other means of transit or transportation open and available to you, you know what are you. What are you going to do when you need to get somewhere that was a that was a good point. Um, Nam, could we hear from you?

Nam Henderson: Yeah, um. Uh, you know, I'm probably not going to say anything that's particularly different than I think what was already touched on. Uh, you know, I've been so I like Chris with just a block west of Quebec. I've been here seven going on eight years now. Uh, commute regularly back and forth across Quebec generally in daytime hours, uh, but, um, you know, with my now almost four-year-old child. I'm going frequently to the to the home depot when we're working on things around the house. Um, you know, I will say that, you know, again, the speeds were highlighted. I can hear those speeds just in my backyard, frankly, um, uh, on a regular basis, you can hear the high speeds, the acceleration. Um, the crashes not infrequently, um, you know, luckily we've had few fatalities, but I think, um, you know, if you look at the the the crashes that occurred, there's there's a high, high number of those, um, or, you know, higher than. Um, and, um, yeah, so I mean, it's it's certainly a problematic, uh, intersection, uh, for all the reasons I were mentioned both the with the, you know, sort of the highway like design.

Um, and, um, yeah, just, you know, as a, as a, some of my personal note, I will say that I, um, I actually interacted with, you know, I wouldn't say we were close, but, um, I literally, um, I live directly catty corner on the same block across the street from Greg and used to interact just,

you know, seeing him in the yard or, you know, kind of walking down the street, you know, very kind of, kind of, as you will, interactions, but, you know, I feel, you know, when I got pulled into this, I felt bad that I didn't realize because all of a sudden I stopped seeing him and, you know, it wasn't until I kind of engaged in this process that I realized why I had stopped seeing him.

And so, you know, that certainly hit very close to home for me and, you know, again, it's, it's a, it's a very, um, dangerous, you know, roadway design that I'd love to see improved. But, yeah, I think that's, you know, again, more just, uh, we didn't, not sure that that added anything particularly new, but certainly would agree with everything like I said.

Tony Harris: Yeah, I appreciate that. And I think as I was reviewing some footage, the noises right, of cars accelerating and traffic and, and all that was very apparent. Obviously, it's different when you're right on top of the intersection taking photos and videos, but I can imagine what it would be like to live nearby. Yeah, great. Um, Chuck, could we turn to you?

Chuck Marohn: Yeah, um, this is quite a few, I mean, there's a lot going on here. I think like one of the things that jumps out to me is that, that issue of the number of lanes, which was brought up before, but I think in the context, you know, if you, if you back out and you look at this corridor on the north side as you get through this intersection, it does flow into highway. There is, you know, you can get into this I70, right, that you get through in there. But if you go south of here, the, in a sense, the stuff feeding into this is two lanes. I mean, there's no, that, that there's no. Let me put it this way. If you think of it as like a funnel, if you went from five lanes to two lanes, you would get traffic congestion. But what you have here is the opposite. You have two lanes going into five lanes. You have two lanes that opens up into five lanes for like this last stretch, but for you dive into the highway. Or, you know, there's the, the other side takes you to more local streets. Um, what you've done here is you created, in effect, where all of a sudden, you know, you're driving in traffic and all of a sudden everything opens up. And I think as drivers, it gives this natural sense of like, okay, now, now put the pedal down and go, right, like it's, we've clearly entered into something different. And that's something different is signaling

to me that I could, I've got a free open road. Um, whatever volume congestion constraints you had back, you know, a few blocks that way are now gone. Everything opens up and now go.

The, the, the sign that hangs down, you know, the, the sign that hangs down over the roadway right when you get through the intersection was, was brought up to, I think, I was thinking a lot about that sign because. This logical sense, like I understand why you would want to signal that the sign right up here, I'll zoom in a little bit more, you know, that's the best way to signal that it probably shouldn't be a sign on the edge of the road. It, it needs to be an overhead saying, if you're going to 70 or 270 you need to get into these lanes, I get it. When you put it in the context of, you know, the road opening up back here. So let's turn around and look at it from here when you do that. That combination just signals go right like speed like get get through here. You know, go very, very quickly. And I feel like this was captured in the speed data that you had. Tony, you, you, you shared that speed data and it wasn't. Well, let's remark a couple things.

First, the speed limit is a lethal speed. So, you know, the speed limit is 45 and anyone who gets hit at 45 is going to be killed right, I mean, that's, so everyone's operating legally at the legal limit. There's, there's going to be a certain amount of death for people outside of a vehicle. And it was noted and I think it's worth noting here. You, you don't often get the spikes that you get here. I mean, look, we had someone clocked at 68. Someone at 62, someone at 60, someone at 58. These aren’t anomalies. So it's not like this is, you know, where the median's at or even where the 85th percentile speed is at. You do have a lot of, you know, a significant amount of speed in, but I feel like the important thing here is the distribution. What this tells me is that it is, I was just going to use the word safe from a driver's standpoint. We are signaling with a driver that it's safe to drive really fast. And some drivers, you feel so empowered by this that they, they go excessively fast, right? You know, the signals that they're getting. And I think that's why you see, I mean, you know, 68, I think we would all sit and think about that as like deviant behavior. Here's someone like really deviating from the mean. My sense is that if you did this speed study for like a week straight, you would get a really big cluster of people that

would be high up in that range. And you wouldn't get that in most situations, even where you have excessive speeding, excessive speeding tends to be on the edge of that that curve where you're at, not these like distant out anomalies. The distant out anomalies to me is a function of the, the design here signaling that this is really a highway like drive highway speeds, right?

I want to say a couple things about the neighborhood. If we look at this and I was looking at Zillow a little bit earlier and I realized that Zillow is not the definitive source of what values are. But in the Denver area, the median housing value is a little over $600,000 last year. The homes in this neighborhood are valued significantly lower than that. No offense to the people who live in this neighborhood like these are these feel like good, working-class homes, right? Maybe even with some poorer homes mixed in. There's certainly were some wealthier parts of the neighborhood, but these are not this is not your. Nobody in this neighborhood is getting chauffeured around, let's say. And so I just looking in Google looking at the neighborhood itself looking at the Zillow information. I think it's fair to say that there's a high propensity [proportion] of people who walk in this neighborhood, walk and bike the demographics just lead very much to that. And I've got a question for our Denver people because I was looking at the zoning.

The zoning looks like it's a CMU which I'm going to take as a commercial mixed use. Does that sound, does that I couldn't find a clear explanation of what would be allowed in that. Here's the zoning map. So you've got this CMU zone in here. Even if it is a mixed-use area, I'm not seeing a lot of mixed use, right? There's not a lot of commercial type of grocery stores, pharmacies, other things. All of that seems to be on the other side of this nasty stroad. And so I guess what I'm suggesting is we've created this design where we've cluster the commercial over here. We have what is in relative terms slightly more affordable homes over here. And we have this expectation that people navigate on foot or on bike or drive, but I think the demographics are going to suggest that, you know, we're good with people walking and biking. We certainly built the infrastructure for them to go from one to the other. And we put this really dangerous obstacle in the way without much kind of thought about how it will be navigated. I've got two

other really quick things, Tony, that I want to point out, I asked you yesterday if you could get some signal timing data for me and we had someone go out and do that. I'm very grateful. Who ever did that? Thank you very much. Thank you.

Tony Harris: Thank you, Chris.

Chuck Marohn: My, my, my, my real question was about the, the timing of these signals. You know, I know you don't live in Minnesota. You know, it's not going to be 30 below there, but you are going to have periods of time where it's cold, which is very windy, certainly odd days when it's raining. There's a lot of things that make standing at the corner of that intersection, waiting for the signal timing to come very problematic, very difficult. You also have this kind of large gap where there's no trees, there's no shade, there's no shelter, there's nothing to buffer you from the wind from the elements. Again, you know, Denver is a very nice climate personally. I think, but you know, those, those create concerns when you're walking and when you're biking, particularly when you get on the older end of the spectrum, right. I was interested in what the timing of these intersections were, you, you have, and I think from an engineering standpoint, there's a certain logic when your ideas to move cars very quickly through this intersection.

You have very long throughput and in comparison, a little bit shorter crossput, right. That's very common. You're dealing with the traffic dynamics, but what it's telling me is that it hasn't really adjusted to the human dynamic. But what we have done at this intersection is we have elevated their throughput of vehicles way, way, way higher than any consideration for people walking. And I'm, I'll just use the obvious, if I'm sitting in a climate controlled car and it's raining out or it's snowing out or it's windy out. The stress that I experienced sitting stopped at a traffic signal is very minimal compared to the stress that the person who has to stop and wait. Very long intervals before they cross is experiencing when they have no shelter. That being said, I am, I was trying to understand how this crash could have happened because literally the individual walking cross four lanes before they got to the fifth lane. When you showed this to

me originally Tony, I'm like, you had to be walking the other way. He had to step out, no, it was the other way. I can only surmise a couple of things. One, this is a long, it's a long way to go across and while the cross signal does seem to give a typical walker time to do that, I don't know the capacity of this, you know, I'm not going to call them elderly man, but let's, you know, not as young as the other guys on this call. So, you know, what it had taken longer, I think certainly someone who was not nimble someone who needed a little bit more time would not have time to safely cross completely in the time allotted with this crossing.

The other thing is that when you have this design, again, the reverse funnel where things open up and then you've got the highway signs up ahead, if there's two or three cars parked in the other lanes, but the far left lane is open. It would be very easy to have basically the whole thing blocked and have the individual be able to cross and not have the driver see and then the driver is, you know, on a freeway with a green light, speeding up to accelerate onto the highway and that far left lane. And by the time they reach that intersection and their reaction time and reaction distance would not allow them to stop the person steps into front of them and I can actually see how that would happen heading into that intersection.

The last thing I want to point out and this is subtle, but I think it's very important this crash happened that 10, 10 something at night 10 p.m. What time of year was it Tony?

Tony Harris: July 3rd it was right before July 4th.

Chuck Marohn: Okay, so I don't you guys will have to fill me in on day and night 10 30 at night or 10 at night here in Minnesota in the winter. It's twilight it's getting dark. I'm assuming you're a little bit further south than us. I assume it's completely dark at that time of night. So yeah, my guess is that it was dark out if you look at the lights here, the streetlights have been configured. Because they're configured for people stepping out to cross. If you if you look here, you know, you basically have a light that is designed to light up the traffic stream. The person who would have been walking across here where my cursor is at right now from coming from this way

would have been well lighted when they stepped off here at the beginning. But by the time I got over here would have actually been somewhat in shadow by the light cast over here say would not have been well illuminated. And would not have been kind of seen. In fact, the way this light is installed and the way that it shines. I suspect they would have been somewhat in shadow here. This is not uncommon because the engineers are actually trying to in a sense light up the intersection for traffic conflicts more than pedestrian conflicts. If we were going to design this intersection to be more friendly and kind of light things up for humans. The space where they're waiting on the side would be more lit and then the entire crosswalk would be very well lit as they went through here. In this case. It's very likely they would have been in shadow as they got to that very critical part of the end where where the crash occurred. So that's what I've got to.

Tony Harris: Thank you. That's really helpful to think about particularly the streetlights and and how that might have been a contributing factor for sure. Any responses or replies?

Chris Harlan: Yeah. I would just add some color to Chuck's observations about the local context that I think we're spot on. You're right in your assessment, Chuck that the neighborhood, especially to the west of Quebec Street here is more working class. It actually has a good mix of single-family homes, town homes, do classes. So you have people at different stages of life here to the east especially to the southeast, you have a neighborhood that used to be the airport. It's now called Central Park. That neighborhood is actually. And New urbanists redevelopment, you know, from the 90s from that era that had a lot of how the lot of promise for being more mixed to being more walkable, pedestrian oriented so I think it's especially after point that out. It you're right like the more working class demographics do live in self some more walking but also the city set out a few decades ago to build a neighborhood of the future that wasn't as car-oriented that offered lots of options for mobility. And it doesn't seem to. A, that didn't seem to have happened in terms of how people get around but secondarily they didn't take into account well how are we going to fix this road in between that connects these two highly pedestrian potential neighbors.

Adam Spiker: To expand on why we have such a wide right of way going both north and south we have we have five through lanes going north and believe for going south here. The Quebec Street here was established as a state highway in 1972 to serve the Stapleton airport. And. A pull up a screen share here here is our intersection of Quebec and 36 the entrance to the airport was a few blocks south at Quebec and MLK Jr. Boulevard. So. This was the traffic engineering reason for this wide wide right of way the airport when it was commissioned in the mid 90s I believe. So we've had almost three decades of what I consider to be unneeded capacity in the stretch of Quebec. That is designed for high traffic volumes that are no longer there. So we've led to this this high speed crash earlier this year. And it hasn't gotten any love in a few decades here since it's original purpose and disappeared it's no longer serving the high traffic volumes. That were serving the Stapleton airport. So really there's there's room for improvement here so if can improvement to serve both neighborhoods east and west of Quebec here. Provide some level of connectivity that doesn't require waiting in the hot Colorado summer sun. It gets pretty uncomfortable here in summer these days. Right. We have our fair share of pulled cold winter days. So there's lots of potential for improvement here.

Tony Harris: Yeah. Would you like to segue us toward recommendations if if we're ready as a group for that?

Adam Spiker: Sure. One like a small effort. Recommendation is the tweak the traffic signal timing. Something that would be great would be a dedicated pedestrian phase to get across. Quebec at 36 or nearby intersection currently it's you're always in conflict with both right and left turning vehicle. Just trying to cross across the road here.

A more minor stop gap that could be implemented quickly would be a leading pedestrian interval. So people get ahead start of three four five seconds or clearly established in the intersection and right or left turning vehicle. There are much less likely. To I guess aggressively drive while there's someone in the crosswalk.

Chuck Marohn: Can I, can I add to that since Adam's on that topic?

Adam Spiker: Absolutely.

Chuck Marohn: I do feel like there needs to be just because of the speed differential that those crazy outliers. There needs to be a period of all red at the intersection before the traffic goes. I think just from a traffic safety standpoint. My guess is that there's plenty of crashes that occur here from from just traffic to like not just pedestrians, but plenty of people hitting each other in cars. When it goes red it should go all red and sometimes you know we'll have a longer yellow. I think longer yellows would be the wrong answer here. It needs to be red everything needs to be stopped calm and then you take off because there's just too much on that through traffic. There's just the stakes are too high there the speeds are too high and it's just way too aggressively designed. So thanks, Adam. Sorry about that. I wanted to add to what you were saying so I didn't repeat.

Adam Spiker: From being out there, I think there's at least a second maybe two seconds of all red but maybe that's not not quite enough for the 45 50 55 mile per hour speed coming northbound here. I think this intersection could use a lot more than just the small effort of tweaking the traffic signal timing. So stopping more peep more more of the north and south through movements. It's kind of anti-traffic engineering to intentionally stop a platoon of vehicles traveling at high speeds but it might make sense here just from a safety perspective. There's always the mix of operations in safety trade off and traffic engineering. And we we often kind of ignore safety and favor of operations vehicle throughput or what we kind of value that convenience for commuting vehicles. So that's another minor small effort thing we could do we could. We could time the signal so that we don't have vehicles getting five six green lights in a row. And speeding down the road although you see that could be controversial. Other, I guess small scale efforts we could make here a thought from our fellow attendees.

Chris Harlan: I might have a few in some of them might be more than small scale. Yeah, I think we've talked about let me start small. Adam and I actually toured this intersection and some of the other intersections nearby. And we're able to kind of see parts of the street I think Tony you were pointing out how, maybe it was Chuck pointing out that a few blocks south the road is only two lanes. So I would really love to see. It looked at about just reducing the amount of lanes and frankly, I feel like we have nearly enough asphalt whether it's the northbound or the southbound section to kind of put all the lanes there. But before we get there maybe intermediate step would be improving street trees so that's one thing add and I noticed when we walked a little bit south. In okay. Pull of our there are some pretty nowadays mature trees that are right up against the street I guess, Quebec where it's a little slimmer and it really provided a lot more comfort as pedestrian. And definitely notice that the cars were driving at the slower I know myself I drive the street. Quite often and I can tell that the myself and the other drivers around are definitely behaving differently over here and I think that's largely due to the amount of lanes. So the amount of lanes and the width of the lanes and and just the street wall that's created by these matureing trees so yeah I feel like trees would be a cheaper solution to begin with.

But yeah if we if we're okay talking about bigger picture. Obviously obviously one of the solution here is to get rid of this giant median maybe you put all of the north and the southbound traffic in what is currently the southbound lane. Which would leave you with a lot of real estate left over which could be, certainly park land could be a great place for these big mature trees to grow up or maybe so that could be sold off for development to funds this reworking industry to me that's the biggest thing. And I think that's a big for the near term but also echo what what Chuck was observing about and speculating on correctly I think. And that's one of the trees and we're from the buildings or anything else in the landscape you feel very exposed and yeah if it was a time of day when there's that a lot of traffic it would it would do very natural just to go ahead and cross the street and kind of end the suffering. In this kind of barren landscape.

Tony Harris: Yeah absolutely. Thanks for, for sharing that with us. Nam, anything from you in the way of recommendations?

Nam Henderson: I mean again nothing that hasn't really been covered certainly you know. It seems like there's some opportunity you know both in the near and kind of bigger picture you know possibilities there. I will just I think I dropped it in - maybe just for us and I forgot to switch to make it visible for other folks - I will just point out that the city did sort of a vision zero analysis of this entire kind of Quebec arterial and. So there's a lot of things that we've talked about maybe not all of them were captured there so. And that that's actually a relatively recent study so you know certainly maybe there's some if folks in the city have some awareness of this maybe there is some opportunity to. And I'm going to push them. If only for some of those things like you know the traffic lights or what not one thing that I would mention this is maybe more under the sort of and how how successful, this would be I'm not sure but maybe under the sort of. And so that's a practical beautification, slowing down you know traffic in some way just by giving some visual.

You know in here is the whatever the city is I recently read that so as we pointed out there's these giant medians as it turns out the city. And so we're going to have some of the millions of gallons of water a year to water those medians. And so as part of some other work that's happening at the state level they've gotten some grant funding and are supposed to be starting I think beginning in next year – turning these medians into a kind of Colorado prairie. And so basically you know wildflowers things like that so perhaps you know I think there's again focus there's really water reduction but perhaps there's some opportunities to kind of leverage or partner that work effort with again you know some sort of. Maybe even just I don't know what that would look like even something as basic as a sign that I have in my yard – “twenty is plenty”. And so I think that's a very low doubt you know again there's like some very low effort things there that costs little to no money.

Adam Spiker: Yeah I think it's worth emphasizing how massive this parcel of land is from, I guess we'll call it 40th & Smith road, Quebec widens out into median separated one way streets roads as four or five lane with I mean there it thins back out at 29th and between that 29th and 40th and that's almost an entire mile where we have this massive median with that serves as nothing but really maybe a clear zone for speeding vehicles that they happen to crash on the left side of the road. And so it's could be. Anything currently if maybe a liability to the city is. That's brass that they have to water but it can be an asset to the city whether it's. Apart for local residents whether it's housing whether it is a mix of those two items mixed use development small business. There's there's so much potential here for the city and. I'm glad that they are looking at the finished section intersection and this segment of roadway and realizing that it is. It's overbuilt there's the Stapleton airport is not here anymore and this is. The traffic that. The city and CDOT expected here is no longer because of the redevelopment. And the big promises in the Stapleton redevelopment plan of multi-use trails multi-modal access and transit connections has not come to fruition. But the potential is still there here in here in in 2023 for improvements we made connect these two neighborhoods make this more of a place. And so for people instead of. The state highway that was thrown in in the 70s that is no longer serving that state highway purpose.

Chuck Marohn: Yeah, Tony when I think of like things that we should be doing out here. I would list them in terms of like ease and priority I would say the traffic timing one the signal timing one is when we can take care of very quickly. And really no cost but sometimes I'm right some staff time. I also think that the lighting of that intersection well I don't think it solves the problem I think it may be alleviates it a little bit and comes at a very low cost and that should be something that should also be prioritized. There's a big sign and I'm going to share my screen again and show this to you I didn't mention it earlier but it's part of the overall design subtlety. There's a highway sign right here on the just off the left lane. I recognize why given this five lane design they want that in there they don't want people. Moving over lanes trying to get reposition themselves. I think we ought to deal with the five lanes too but that's sign to me needs to go. And even if you're not going to do something to narrow the lanes which I think

they need to do that sign should should be relocated way back further. Because what it does in this place is it kind of adds to the mentality of we're now in a highway. And you can see how people looking at those things together. The signs way up ahead that are very clearly highway type signs that big highway scaled here now you know i70 i 270. It just says highway highway highway and I think if we want people thinking about what lane they want to be in. We don't want them doing that as they're accelerating that should be either eliminated completely or moved way, way, way back. Because we don't want that aggression here at this intersection. At street trees on both sides to me is an obvious one like let's create a little bit of edge friction there. We can do that really really cheaply today get them started and get them growing. And if we're out there watering grass anyway which is this dumbest thing I've ever heard. We can actually you know water some trees and get those going.

I do think we have to talk about the lanes and I would like to see us do a short term a midterm and a long term kind of course correction. The short term for me would be to go back to where it the funnel reverses where you go from to larger and keep it at two. And I would do that with cones and I would do that with temporary construction bollards I would pull out my manual for temporary traffic control and I would just do that for the whole stretch up to this intersection here. And after you get through this intersection then go ahead and go back out to five but up to here you've got two lanes the entire way. And that's what I would do tomorrow in the midterm I would take that and make it a little bit more permanent I would go get the concrete. The concrete sections that are often put in in construction zones to protect workers and I would make the outer lanes either a bus transit way, if there's a need for that or if it can be put to use to that or I would make it dedicated bike walk area along the side of that corridor. But I would only do either of those once you had concrete barriers in place so that there was no chance of people going across and what have you. They work in Colorado in the winter we can still snow plow in that area we can have a little bit of gaps to push things off we can snow plow both sides it will actually continue to work year round in a place like Colorado.

Long term I think that there's two strategies that need to happen first the road needs to be reconstructed to be narrowed. I mean we can add bike and walk elements into that we can add transit elements into that but as soon as the city is going to have a bill to reconstruct this I mean as soon as they're going to get a bill to go out and even do crack ceiling or chip ceiling or mill and overlay. There can be wasting ridiculous amounts of money on stuff that they don't that as no utility for them in terms of surfacing and so ultimately this place needs to be. Reconstructed to be much narrower, or shedding less water having less asphalt having less overall cost to me the way you accelerate that and the way you cash flow that today is to develop that median area. It's been kind of been alluded to here maybe we go to a prairie maybe we take and make it you know. One side have all the traffic and the other side is open I think you can leave the configuration as it is one way one way and one way the other because you've got the highway there and I think there's some traffic flow issues but that entire middle area I mean. And it never has a housing affordability problem. You look and I mean you don't have I'm just going to again share my map here in terms of scale you don't have a height issue. You don't have like a NIMBY issue of oh my gosh you're changing the dynamics of my neighborhood you you know any of that you got a wide open thing with a stroke on both sides you make that stroke a little bit nicer. So some intense housing in the middle now the sudden the commercial buildings make a lot more sense you have a lot more housing options and you can cash flow as the city. And I think there's a way you know oftentimes when we talk about these things will say here's what we'll do tomorrow and here's what we do over the next few years and then here's what we do someday in the future when we get to it. And I'm going to be very happy to celebrate that someday in the future a lot by having a corresponding development strategy for that median and I would if I were the city of Denver get someone in. I know they've done the whole Stapleton redevelopment and that was a big undertaking and it was many decades in the works and and in many ways painful as the other panelists have alluded to some you know. To me that this median development should be way easier because you have no there's no expectation today there's no really like NIMBY's going to be active like don't take away my grass crappy median you know like this is not it would just make everything nicer for everybody. You had buildings that people couldn't walk through nice street trees a

nice streetscape connect these neighborhoods connect these places to me this is obvious and easy to and if you do it. If you do it with some modicum of intelligence you can make a lot of the city can actually cash flow positive out of this while fixing this nasty set od streets and make them safe and made for people. So that would be my like long-term vision. Thanks Tony.

Tony Harris: Yeah, thank you Chuck appreciate that any responses or or thoughts on recommendations. Further from anyone.

Adam Spiker: Just to reiterate with Chuck said making that median some level of human scale development would just would be a dream it's nothing but a. It's just a wide median that is that really looks like an interstate median. Like I-70 or I-76 out in Western Colorado.

Chuck Marohn: My guess is that engineers want to hold on to it. And engineers always like to have extra room for water for a lift station for like whatever. I think that the city should look at this as prime real estate that immense value and if you use it for in a sense bottom feeding type of things like lift stations and drainage ponds and all that. And you're blowing tons of money that should be put to other use I mean it's a really poor use of a public asset is what it is.

Chris Harlan: Yeah, I would say. Go ahead.

Tony Harris: No, go for it.

Chris Harlan: I think your recommendations make a lot of sense and for some reason, I need to update my Zoom, I can't screenshare today. You know the neighborhood around it you can see this median this apartment buildings just a few blocks away that are less wide than this median you could easily copy and paste what's been done, and even go a little bit higher, because there's these hotels that used to be airport hotels, they're 8 stories tall or so – so it seems like a great context for higher density.

Chuck Marohn: Yeah I look at those apartment buildings and I'm not in love with them, but point well taken, a good designer can fit, I mean, that's plenty of room to fit some great stuff in there. Make it really nice and make it very livable and create hundreds, maybe more than hundreds of units of housing in here, along with some other mixed-use stuff that would really be an asset to the neighborhood. Point well taken.

Tony Harris: Right, especially if money's already being spent to water this giant median and there's nothing existing in that way.

Chuck Marohn:I mean, you've got to be joking me, really. I mean, I know that you all have water, I'm very familiar with the water rights debates and how just like tense the water situation is out there. The idea that somehow, like the best use of public resources is purchasing scarce water to water this median. Come on, I mean, we got to be, we can do better than that, right?

Tony Harris: Agreed. Agreed. Okay, any further thoughts on recommendations? Otherwise I'll move us into our close out. Okay, I'm just gonna share my screen again one more time.

So, I would like to offer a few acknowledgments and thanks to people. Thank you of course to our panelists today. So Adam, Chris, Nam, Chuck, we really appreciate you all taking the time to to be here with us and to walk us through this analysis. A big special thank you to Ed Callahan for nominating this crash in the first place, alongside Chris and alongside some other people in the Denver local conversations group. I suppose it was more of like a group nomination effort, but I feel like Ed sort of led the charge over several months there. And thank you to Montana, Lawrence, Sam and some of our other Denver community members, people associated with the local conversation group and potentially outside of that group as well. We'd also like to offer our appreciation to our sponsor for this event, who is an anonymous donor. And thank you to Strong Towns staff that have been helping prepare over the past several weeks. You can find a recording of this session and all of our Crash Analysis Studio sessions by going to

strongtowns.org/crash-studio. There you'll also soon find resources for establishing a crash analysis studio in your own community. Our next studio session will take place on December 15th and you can find more information about that on our website as well. So on behalf of my colleagues and the assembled panel, thank you for watching this session of the Crash Analysis Studio and keep doing what you can to build a strong town. Take care.