Crash Analysis Studio – Session 3 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. Thanks for joining us for this Crash Analysis Studio with Strong Towns. We'll give a minute for everyone to join the webinar today. But as we get started here, I'll introduce myself - I'm Rachel Quednau, Program Director with Strong Towns, and we're pleased to have you joining us for this conversation.

So in a moment, I will introduce you to the rest of our panel. But let's begin by talking about why we are here today for this Crash Analysis Studio. Last year, over 40,000 people died in automobile 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 and all 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 often to send out law enforcement and insurance agencies merely to assign blame. Who made a mistake that caused this crash? Who are we going to put the blame on?

The reality is that crashes are caused by multiple factors, not only driver error. When a traumatic crash occurs, we need to identify all of the contributing factors and learn what we can from the experience 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 Richmond, Virginia, where a driver had been killed, a pedestrian.

This crash was submitted to us by a Strong Towns member and Local Conversation leader who lives in Richmond. Today, we'll start by introducing you to our panel. Then we will review the

facts of the crash and assess with input from our panel the design factors that contributed to this crash.

And again, our goal is not to assign blame. It's to learn as much as possible about what happened and to identify the many factors that contributed to this unfortunate collision. Before we get into the particulars of this crash and hear from our panel of experts, we need to begin with the fact that this tragedy resulted in the death of a 22 year-old Virginia Commonwealth University student, Mahrokh Khan.

Please take a moment of silence with me to honor and acknowledge the loss of her life. Thank you.

I'm going to hand it over to Edward in a minute. But first, let me introduce our panel for today and everyone can feel free to come on the screen so we can see your faces. Joining us is Jennifer Griffin, an urban designer, architect and founding principal of J. Griffin Design. She's worked throughout the U.S., Europe and Central America on a variety of projects that range from small scale renovations, to mixed use infill projects, to regional scale master plans. Jennifer's work is rooted in a deep understanding of the relationship between the built environment and human flourishing. Jennifer has served on faculty at multiple universities.

Also joining us is Brantley Tyndall, who is the director of Bike Walk RVA, a bike and pedestrian program of Sports Backers that grows and leads the grassroots advocacy movement for Safer Streets in the Richmond, Virginia region. Bike Walk RVA focuses on dedicated active transportation infrastructure policy changes and developing extensive advocacy based through training and empowerment.

Also with us today is Jordyn Taylor, the Coordinator for Policy and Administration at the Partnership for Smarter Growth in Richmond. She has studied Urban and Regional Planning at Virginia Commonwealth University, and she became involved in this session due to her familiarity with the intersection and her interests in changing how it's designed.

Also joining us is Tara FitzPatrick, the Safe Routes to Schools Coordinator at Greater Richmond Fit4Kids. She advocates for infrastructure necessary to make journeys by foot, by walk, and bike safer within the community. She has lived in Richmond for over a decade and considers the VCU campus to be an integral part of the city.

And finally, we have Edward Erfurt, who's the Director of Community Action at Strong Towns. He is a trained architect and passionate urban designer with over 20 years of public and private sector experience. Edward has a keen eye when it comes to evaluating the safety issues posed by roads and intersections. I will hand it over to Edward now, who's going to go over the details of this crash in Richmond, and then we'll go on to hearing input from our panelists.

Edward Erfurt: Great. Thank you, Rachel. So let me go through some of the facts and some of the information [and] observations we have about this intersection and this crash. This crash

occurred - was with a Virginia Commonwealth University student, Mahrokh Khan, who's 22 years-old. She died at VCU Medical Center after being struck at the intersection of Laurel and West Main Street.

Khan was in the right travel lane west of Main. Currently, there's no crash report available from the Richmond Police Department, and this is due to it being an active investigation. This occurred approximately at 9 a.m. on January 27th of this year. Weather report indicates that it was dry and partially cloudy that day and the road surfaces were not likely slick due to weather.

The posted speed limit documented by our nominator is 25 miles per hour. The speed limit was not listed in the media coverage that we reviewed. West Main Street is a one-way road, and that's the direction [west] the motorist was traveling. Khan was crossing the street on ei- on either east or west side of Laurel. The collision occurred in the right lane of West Main Street.

Media indicates the driver stayed on the scene after the crash and no charges to date have been filed. This is under an active investigation - means the facts are still being determined and presented to the Commonwealth's attorney. And I want to just pause here for a minute, because this is the first of the Crash Analysis Studios that we've done in advance of having a police report.

And the thought here with this particular studio to keep in mind is that it should not take a year, or it should not take months, in order to host one of these Crash Analysis Studios. It's important to explore these areas and these incidences immediately so that they will not be repeated. Here's the actual site of the intersection. So, across the screen, from left to right is West Main Street, and up and down is North Laurel Street.

This is the intersection that is the focus of this crash. We've identified here in orange where we believe that Khan was walking and it was either this side or the other side of the street. We believe - we understand - that the car was driving west on West Main Street in this direction.

So some relevant circumstances and facts. Multiple locals have reported speeding as common throughout this area. Crashes occur frequently on the VCU campus, including one that occurred a week after this one. No driver statement or witness statements are currently available because this is an active investigation. And media coverage did not mention if an impairment test were administered at the scene.

The overall site conditions - this street is posted at 25 miles per hour. Main Street before Laurel is three lanes. There's a dedicated right turn lane, a middle lane for thru traffic, and a shared left lane for left turns and thru traffic. The south side of the street has parallel parking. Main Street after Laurel: both lanes are thru traffic and there's parallel parking on both sides of the street.

Laurel, north of Main, at the intersection, there are three lanes. There is a dedicated right turn lane, two-way traffic, and the east side of the street is available for parallel parking. But there

are no parking signs. Laurel, south of Main, is one-way with two unmarked lanes, and the east side of the street has parallel parking. There's a four way crosswalk with clear push buttons at each corner.

There are two traffic signals, one for West Main and one for North Laurel crossing to South Laurel. And the construction on the dormitory and park in recent years resulted in no changes to the intersection itself.

So, looking here in the plan, we can see the intersection that we've discussed with the travel lanes. This is the view of a motorist driving west on Laurel - oh I'm sorry, West on Main towards Laurel. Again, coming towards Laurel. On the left side, the screen is the on-street parking and then looking to the right across the screen is the thru lane with a - with the shared left. There's a center thrulane and on the right is a dedicated right turn lane. And as we approach the intersection, you can begin to see this and the two intersections or two curb ramps on the right, either in the foreground where the parking sign is or in the distance is where Khan would have been crossing.

Looking around at the intersections from the perspective, you can see that we're looking now on Laurel, looking south with the dormitories and the parking garage. The street - we've measured the lanes out so you can see the sidewalk widths, the turn lane widths, and the travel lane widths.

The overall site conditions, this is an urban development pattern with a mix of residential, retail, educational uses - that has proximity to dormitories, apartment complexes and VCU campus buildings. There's a high volume of pedestrians and cyclists – assuming, VCU students. This is a traditional grid of streets forming blocks. It's surrounded by several major boulevards, expressways, and highways. There are multiple civic and cultural destinations in the vicinity - they include VCU, the Black History Museum, the Convention Center, Altria Theater, and it's adjacent to multiple parking lots and a large parking deck. We can see the dormitory again at the intersection. We can see the parking garage at the other corner of the intersection. And we can see the park and the civic uses on the full intersection.

The preliminary speed study indicates a significant number of automobiles traveling at fatal speeds in this area. Through the speed study, there were a couple startling facts that came out of the speed study. Nearly seven out of ten drivers exceeded the speed limit. And you can see through the study where those are shown in red, only 3% of the drivers, 3% of the drivers went ten miles per hour or more over the speed limit. The 85th percentile for speed in this particular study was shown at 32 miles per hour.

What we have found in a lot of research is that most college campuses have speed limits that are 10 to 15 miles per hour. I also want to note that the speed study was completed one month after the VCU safety campaign that occurred on the campus as a result of this crash. So, again, here's the intersection, and I'm going to hand it back to Rachel and we can begin our discussion.

Rachel Quednau: Thank you. So now I'd like to go through and hear from our panelists about what you observed in this crash and the intersection where it took place and what factors you think might have contributed to the crash, in the design of the street. Feel free to pull up street view on Google if you'd like to screenshare and illustrate your point, or Edward can go back to the slides too.

So, Jennifer, can we start with you? What do you notice in the intersection and what factors might have contributed to this crash, in your opinion?

Jennifer Griffin: Yeah. Thanks, Rachel. I mean, when I first looked at the data and I talked with Ed just about the conditions, it was just it was kind of crazy to imagine that this happened at 9 a.m. on a Friday morning when you expect there is - there's just a ton of pedestrian activity of students crossing and other people crossing that intersection.

So - it wasn't late at night, it wasn't bad weather conditions, that sort of thing… I think it's indicative of the real challenges with the current design, you know, of this intersection. I'll go ahead and screenshare - I think it's easier if we look at this together… let's see... Do you all see the uh…

Rachel Quednau: Yes.

Jennifer Griffin: Satellite View. I think - in looking at this intersection and actually zooming out to when you look at just kind of a street network, it's it's obvious. I think there's no one condition that would cause this. Right? I think public space is like a whole ecosystem. And how people perceive and use public spaces is based on a ton of different factors that go into the design.

But as you continue to look at this particular space, those factors that go against pedestrian safety just continue to increase, I think, as you look at it. The first thing just being is that you can tell, that this is a one way street system going from east to west here on West Main and that it's four lanes - this is really auto-oriented and especially - which is counter to the fact that it's this urban highly - high pedestrian area.

And the other thing that's just really interesting about it is that - and it's a really interesting case study just in itself - the intersection has, quite a potpourri of corner conditions. I don't know if you guys noticed, but you know, you have one here, in this corner that has a really tight radius, really small radius, curb radius and kind of in a more urban condition.

Then on this side, you have one that has much larger turning radius, but then also has bump outs - often used to help pedestrians cross or shorten that length for crossing. And then you have this corner where - it's, I mean, it almost looks like a corner and an arterial given the large size of the curb radius here.

And you know I was talking to, to Ed before and, and looking at you know this intersection on this - and so and look I know that she might have been Mahrokh might have been crossing from this intersection or sorry, this corner or this corner - of both, I think are problematic. And depending on which you could kind of critique maybe what had happened in the factors that caused that.

I think just first off and maybe kind of focus on this corner, assuming that she would be crossing from this one, you know, to cross the street from here, you actually have to begin your pedestrian wait almost like in the street, you know, because the sidewalk bends away before you get to the crosswalk here - versus if you were here, you could stand protected in the crosswalk and then begin crossing.

And so, you know, you're already kind of in a dangerous area for people turning and with that just great turning radius. It's not conducive for people that would be turning right to slow down. You know that sort of design is visually telling people that you don't have to slow down to make a sharp turn. You can go much faster through the intersection, making a right-hand turn.

The other thing that's really interesting has shown up in the diagrams is that this lane right here is 12.4 feet wide, which is really wide. And again, in terms of not having any sort of potential items of friction, that would cause you to think, “I need to slow down because I'm coming into a tighter space.” So I, you know, just imagining people coming off between the curb radius and the width of that lane, people are probably just thinking there's nothing restricting me from going all the way through the intersection even on and I'm not sure if there's a “No Turn On Red” on this intersection, but just, you know, just visually of the design, it

seems like it's a quic, no slowdown, sort of right-hand turn. You know, the other thing that I noticed is that if you look at the intersection, there's there's - not only is it a potpourri of like corner conditions, which is kind of confusing as for a pedestrian, right, But also each road leading into the intersection is different - treated differently in terms of how the vehicular traffic uses it.

So, you know, from this side you've got a one way so going this way and you have two drive lanes, a park lane, and a turning lane. On this side, you know, it's still one way. So you don't have anybody coming in this direction. But, you know, here's a bump out on this corner. So it's different than this.

This up here is a two-way street. So, you have two-way traffic that a pedestrian has to understand is coming from both, you know, both directions to down here on South Laurel is a one-way street again. You know, the challenge with this is that, you know, it's there's just no real visual cues indicating the different vehicular conditions that a pedestrian is going to be coming into and what they have to look out for.

So, what ends up happening is both pedestrians and drivers that are using this intersection because there's no visual cues that there's going to be a different condition on the other side of the street or the other, the other road coming into it, is that I think drivers will tend to make assumptions about the conditions that they're coming into that may be - not be true.

You know, you can imagine someone assuming that maybe this is a two- way street when they're crossing here because this is a two-way street and knowing what to expect with drivers' behavior. And the same thing for drivers as well. So, I think that kind of causes to just when you have that confusion, people make mistakes because they make assumptions about how other users are going to use the space.

And then one other thing I wanted to mention when I was looking at this and I'll pull up - do you guys see my street view now?

Rachel Quednau: Yeah.

Jennifer Griffin: And I didn't notice this at first, but if you actually look at - this light pole's right here, and if she was in fact crossing in this intersection, what you can notice because people kind of, I would imagine, start to kind of wait here and actually there's a - I'll go back, but there is a picture of just a straight view from another time period, and Google, it shows pedestrians standing there like in the street, but on that corner because the curb doesn't extend out.

But this light pole would actually block a driver's view if you're in this right hand lane to anybody standing there. So, there could be someone coming in that's going at 30 miles an hour, even though they shouldn't be. that is turning right. And because this - look how wide this radius is, you know, before the pedestrian could even begin to cross the street, they could hit them because they're you know, because the radius is allowing the car to turn that quickly and that close to the curb.

So, I think that's really challenging. I think the situation maybe changes if and there's other things that we can talk about if she was crossing, if Mahrokh was crossing on the other side of street on this corner here coming across, you know, there's other challenges to that.

This is obviously an older satellite view. They now have a bump out there here. But yeah, just in terms of this intersection, it's that, that one corner in particular just seems incredibly dangerous for folks using, from pedestrians using that intersection.

Rachel Quednau: Thanks very much, Jennifer. Appreciate the wealth of feedback here. Let's go now to hear from Jordyn. What do you notice about this intersection - particularly as someone who has spent time there? What might have contributed to this crash?

Jordyn Taylor: Oh my, sorry. My freshman year I lived at Gladding Resident Center, which is the dormitory near the corner of Altria and which is close in proximity to the accident. And there I've witnessed many drivers speed through that intersection to beat the light or just to get

there before pedestrians do, as mentioned before, that light there, you do not have to stop at a red light to make a right turn.

With that being said, I think that that's problematic. Also, as mentioned, the accident occurred at 9:00 in the morning. That's a time where most students are going to 8AM courses or 9AM courses and are traveling or traveling heavily there. And also I think that being with West Main Street being a one-way street, I think that it goes into the mentality of the driver of speeding just because it's a one-way street there and also the surrounding streets as well.

And also I've walked on Main Street and Laurel Street – walked and drived there – and I've noticed that there aren't clear, very clear signage of the posted speed limit. I'm aware that it's 25, but I'm not sure that others are. As mentioned before, that light pole that is there, it blocks the pedestrian there. And also, there's a sign there, but you can't see it.

Rachel Quednau: And yeah, anything else you wanted to add, Jordyn, or is that good for now?

Jordyn Taylor: And also I just wanted to add that I think – as I mentioned before – the one-way streets there and also I think if you are not aware of the area and also there's two dormitories that are actually near Altria Theater where the accident happened, if you're not aware of the fact that they are one-way roads, many cars turn into that lane thinking it's a two-way uh… two-way road.

And I think that also plays into the role of just safety for pedestrians and safety for drivers.

Rachel Quednau: Yeah, I think the fact that there's like one way is turning into two ways and vice versa. Both of you have brought that up. It also seems to me like the - just that confusion means a driver is focusing on, "Wait, where am I? Which lane am I supposed to be in, Am I turning? Is this a one-way? And they're not looking out for people crossing the street.

Jordyn Taylor: Yes.

Rachel Quednau: Okay. Thank you, Jordan. Appreciate that on the ground perspective, especially. Brantley, can we hear from you? What do you observe that might have contributed to this crash in the design of the street?

Brantley Tyndall: Sure. I certainly agree with everything said so far, and it's been very thorough - so in terms of… I love to avoid any of the hyper specific things right at the intersection, and instead zoom out a little bit to think about the corridor or the network, what this part of town is like.

When I went to Virginia Commonwealth University, I used to live in the neighborhood just south of here and use this intersection three or four times a day. So, I'm very familiar with it. The park there is to the northeast - is a very central park to the area, gets a ton of use, student activities, student gathering. I mean, it wouldn't be irregular to see 500 or 1,000 kids - students

- in the, in the park. And it's - this is an especially important gateway to the university. We're more or less on the south east corner of the main part of campus, which is most years among the largest universities in in Virginia. We used to aim for that goal, and I think they stopped doing that a few years ago.

Brantley Tyndall: But, you know, close to 30,000 students go to Virginia Commonwealth University and that doesn't include the 10,000 faculty and staff. So, it's very populous. And Main Street being a one-way corridor is one way for miles and miles to the west, to the east. And it is it is used as such to be a main cut through and thoroughfare across town and people… just two blocks east of the intersection is Belvidere Street, which is a main arterial.

It's a connection to the interstate. It's a connection south of the river to one of the main bridges to get across the James River. And it's six lanes, it's high speed when it's not too congested. It itself is a major barrier to get across. And that light for drivers heading west on Main Street is sort of a power up, you might say. People speed up to get through it and they maintain their speed through this intersection. And the intersection between Belvidere and Laurel is Pine Street. It's a bit of a non-intersection. It doesn't get a ton of use because the grid south of there is not super connected and it's a one-way that more or less kind of dead ends at the park here.

So you get some pedestrian activity. But as a driver you rarely have to - you get, you get very few cues that you need to slow down approaching Main Street and you rarely are really forced to stop in this. And at South Pine Street, in my experience, there's not a lot of pedestrian crossing there either because it's a bit of a no man's land.

So, drivers speed whether they know it or not, heading into this intersection. And as Jennifer mentioned, it's awfully wide as a pedestrian trying to cross it, it is four lanes. One of them is a parking lane, but it is - it feels wide. And the other thing I think is really important about the discussion of students crossing – it's nine in the morning, they're going to classes. I think we can dig down a little bit into that, more.

Classes typically get the morning classes are from 8 to 8:45 or 8:50 and then from 9 to 9:45 or 9:50. So students tend to pulse. It's either there's 45 minutes of very little student activity or student crossing or it's very intermittent. But for about ten or 15 minutes out of every hour, there are hundreds of thousands of people crossing.

And so, the actual specific minute that Mahrokh was hit, could be very different in terms of the scenario that we're trying to anticipate. And if it was one of the moments where there aren't a lot of people crossing, the driver maybe looks a block away to say, "Oh, I don't see anyone coming." So. they're kind of gunning it through this intersection.

Mahrokh Khan is not hiding - I don't want to say it that way - Is obscured by the pole or other street furniture or maybe even a stopped car or in that turn lane. And the driver looks down at a phone thinking, okay, I've got a block of clearance and I'll make it through this intersection. And Mahrokh makes it into a place where she's supposed to be able to cross.

And the driver was not able to anticipate it based on either personal decisions or just kind of riding the speed wave through the corridor.

Rachel Quednau: Yeah. Thank you. Thanks for bringing up those details about the flow of pedestrian traffic around the university. That is definitely relevant. Let's go now to hear from Tara. Can you tell us what you observed about this intersection and what might have contributed to the crash?

Tara FitzPatrick: Yeah, something actually, I'm not sure if anybody brought this up earlier, but something I just noticed that I actually wasn't going to speak to is that there is a bus stop right there on that corner. So Brantley saying the street furniture there could have been a bus stopped. And so the vehicle, the driver of the vehicle may have had the view obstructed by that at that point. So that was just something I noticed, but it wasn't something I was actually planning to speak to.

So, one thing to kind of build on both Jordyn and Brantley's points about the one - the fact that these are this is a one-way street. This is something that I tend to explore a lot through some of the work that I'm doing with Richmond public schools is kind of looking at some of the unique challenges that we have here in the city of Richmond around our one-way streets.

And that's like you see that a lot in the state of Virginia. I feel like it's a little bit different here. I know that there are some contributing factors that kind of set things up for this. So, in the state of Virginia, our locality system is unique to anywhere else in the country and our counties are separate from our cities.

So, we have independent towns and cities and we have counties and they're separate. The governments are separate. Often times for like things like transportation and education, the funding formulas are created to kind of treat the localities differently. And often times there's a lot of disparity in sort of how the cities and the counties are treated. So that's one thing to kind of take into consideration.

And a lot of times sometimes like independent cities and independent towns will have less of a say in what happens there. We also have to then consider the fact that, you know, the city is going to serve as a place of commerce. It's going to serve as a source of employment. In general, we see this across cities across the state. I've lived in a few cities across the state and have noticed that as well.

The city of Richmond is even more unique in the fact that it is the capital, state capital. So we do host, you know, a lot of state and federal agencies and organizations, so a lot of government agencies are here. So those are just kind of some things to think about.

And of course, the property for that is also not exactly taxed. So because those local organizations like even VCU for the property that they have, they aren't paying real estate tax.

So that is not revenue that the city has access to to improve conditions on the ground, whether it be a road or, you know, schools or other things like that.

So, it's a very complicated system of funding that we look at when we when we think about our… how the state interacts with the cities. So that's a very unique thing to kind of consider. I also want to take into consideration - to kind of build again on what Brantley and Jordyn were saying - to look at when we're looking at the road we see a 147 on there, and that 147 indicates that this is a state highway.

The state highway, in this case, I believe, was designated in the thirties - in the 1930s. And this particular highway runs through the city and then out through Midlothian, which is in Chesterfield, Virginia. And like Brantley said, this is a route often used for people to cut through the city. They want to get through quickly. So, if you have employment in the city or you want to access recreation or entertainment or the other amenities that the cities can provide, oftentimes if you live out in the county, you know, this road is a pretty major one for people to consider as one that they can get in and out pretty quickly.

So that's something to kind of consider there. Now, looking at the history of state Route 147, we see that it did run, the roads were a two-way. It was initially down Cary Street, which is the road parallel. And that also runs kind of directly out to the county. Main Street is parallel and does not kind of continue over the river in the same manner.

It ends up having to kind of merge over. But from the area within sort of - between the highway - like before you get out to what we consider sort of the near West end in the city, so like from Cary Town all the way down through the other highway system there, you'll see that it was split in 1969 to be a single road on Cary Street that carried two lanes of traffic in either direction.

It was essentially split into two and created two separate roads for eastbound and westbound traffic on that state route. And if you think about the timing of that, of course, that is 1969. What's happening in 1969? We really have to sit and think about what our country was going through and what was happening specifically in the state of Virginia. And it's hard to not think about racism.

So, we can look at this system of roads as a contributor to systemic and institutional racism and being able to enforce that and implement that. So around this time, what we did see in the city of Richmond and in many places across the country, we saw a lot of white flight.

And so having these roads be kind of moved from, you know, a single lane two-way, which we know calms traffic and creates safer conditions for the community, we've turned it into what feels physically like an actual highway. And so this allowed for folks who needed to come in and out of the city, who maybe moved out, moved their families out to the counties, out to the suburbs for probably pretty questionable reasons, so that they could then continue to access their livelihood, perhaps downtown if they had a that was with the government, the state or

federal government or in other business industries, because the city has always kind of served as the commercial corridor.

So, I think that that's something that we can't overlook - that a lot of our infrastructure has roots in racism. We often talk about the interstate highway system and how 95 being built, the Richmond Petersburg Turnpike, as it was called when it was first built, that it destroyed an entire neighborhood, actually two neighborhoods, and fairly intentionally, they were black neighborhoods.

That highway could have run right along the railroad corridor, and it wouldn't have displaced and disrupted communities. But the choice was made somewhat intentionally to do this. So when we think about those larger highways, we also have to think about the roads that connect people to the major interstates and the major highways that did a lot of displacement.

These roads are all a part of that system, and we still see a lot of one-way roads that speed through the area and were initially again switched from two-lane roads - two-way roads – to two one-way roads to facilitate the ability for somebody who is trying to commute in and out of the city to be able to get through faster rather than to protect and serve the community that actually lives there.

So, I think that's just kind of a point that we need to kind of consider. And again, looking at Cary and West Main Street, those are two of the roads that are one-way. We can look at Franklin Street, which is just a couple of blocks over on the other side of West Broad Street. Marshall and Clay Street are still set at one-way roads and people do they speed through and a lot of students live here, a lot of families live here, and oftentimes there are a lot of concerns about safety in these areas. And I think these these are very, you know, kind of simple things to think about here.

It struck me yesterday. I was in the area and going to a class nearby a little bit further down West Main Street. And I was reminded of the fact that Corey Frazier, a VCU student who was 21 years old in 2018 riding his bicycle, was trying to cross West Main Street a few blocks down on Roland Street, and he was killed because we have we prioritized parking in the city and there is very little, if any, enforcement and somebody parked too close to the corner and it blocked visibility and this student was also killed in the area. So it is certainly something that we can see happening time and time again until we start actually doing something. And so I really appreciate the fact that we are pulling this back and having these conversations.

Rachel Quednau: Thanks very much. Yeah, I appreciate that extra context, too. Edward, let's go to you and hear anything to add about the factors that might have contributed to this crash in the design of the street.

Edward Erfurt: Yeah. So to focus in at the intersection, a couple of things that I observed looking at this particular crash site is that I actually see this as the most productive location in the Commonwealth, right? This is the most productive area. This is where the Commonwealth's

investing into the future and generations with the college. And, when I look at the intersection, one of the things that strikes me as odd is that you can see the crosswalk here - it's not actually perpendicular and none of the lines line up to connect. So, there's some dysfunction with that. You can also see we know that there have been improvements that were done and as Jennifer shared, that the different hodgepodge of intersections - you can see here that the curb face of where a pedestrian would be, there's almost another lane to accommodate kind of this width of the street, which seems really unnecessary.

The sidewalk really should have come out to tighten up these lanes. And when I looked at the street view here from the street side, I don't think that this intersection meets Pro AG, which is the American for Disabilities Act. So, making it safe for all users of all abilities to get across the intersection. I went and looked because I was always find history interesting at these intersections and there really wasn't much change from 2016 to today.

As we go through there, there's not a lot that has changed at this intersection physically. Maybe, you know, some minor curve work and things started to happen in 17 where intensity of a development occurred and work occurred at the park. So, both the curb lines were impacted there and pedestrians are such a priority. It's actually really good.

The city and state accommodated students by removing a travel lane out from here, so that turn lane got removed to accommodate pedestrians. And I take note to this because this is something that is simple that was done. If we go down there, it's cones and some snow fence and all of a sudden that lane was removed, and priority was given to the pedestrian at this location.

Also through construction, you know, you have to park construction trucks. with that just by default, the cones actually narrowed up the lanes. So, by a reduction in lane and the number of lanes, I found that to be really interesting at this intersection and one would kind of hope that something would have changed there. And it actually - it didn't - the curb line was put back where it was.

So - when we see these this is these really wide radiuses that come around. So, you have a wide travel lane, a wide turn, and then a wide lane to receive that well-intentioned by moving the on street parking up with no parking. But it really widens all of this up. It facilitates a higher speed. And with something like the university here, there's a lot of destination folks that would be coming here.

You know, folks would be traveling through this community that are unfamiliar with Richmond. It's a capital, but there's also new professors and parents coming from out of the city traveling through that aren't aware. And Jordyn kind of mentioned that people get confused about which street to go out. And what we see time and time again on roads is that if it's designed optically wide and it's confusing it, that design itself is what is distracting the drivers, not necessarily the movement.

And even at the intersection. And one of the things that as we look at this again - in the park, there are bollards that were installed and they're protecting the park from cars. But fail the opportunity to protect the students from the cars and by, you know, simply moving those out in that area. But I definitely agree with everyone else that have talked about this particular intersection of being wide. It's clearly facilitating by design higher speeds. There's a lot of confusion, I think, for both the pedestrian and the people driving. You can see in the street views and we could hear from the campus reports of students kind of stepping off the curb, waiting to cross that condition of not being seen. And the signage blocking are all things that are contributing to the built environment here.

And to look at some quick solutions to that, I think the campus has already done some and we need to go back and look again, take a second look back to 2018 when the when there were some innovative things done for the purposes of accommodating the pedestrian that probably could be re-looked at today at this particular intersection.

Rachel Quednau: Thanks, Edward. That was a helpful summary to a lot of the points that have been brought up so far. Let's now turn to some recommendations that we might consider to make this intersection safer for everyone using it, especially people walking. Jennifer, what recommendations would you offer that could change the design of the street to make it safer?

Jennifer Griffin: Yeah, let me say let me just pull up - I'm going to miss something in the recommendation, just as I think some of the stuff that Jordan, Brantley and Tara all mentioned was really interesting, particularly Tara and Brantley as they were talking and Jordyn actually mentioned this as well, just as you kind of zoom out and thinking about, you know, obviously one-way system, given the width of the street, the width of the lanes one-way system period is not it's not going to be as conducive to pedestrian safety as a two-way system.

So in looking at that, let me share my screen again real quick. In looking at that again, when you zoom out, it was really interesting because as they were talking, I was looking at this. And so that one-way system, that pair one-way streets that kind of allows people to travel quickly through Richmond downtown, you know, you got West Main going in this direction and then it's paired by West Carey going in the other direction.

So these two pairs of streets go connect all the way here to here and this one all the way here, down to here. But the interesting thing about it is if someone's wanting to like go is - has no interest in actually going and utilizing downtown and they're just trying to go through quickly, they obviously have one and five here.

So I think the mentality of like needing to keep these one-way as, as high volume traffic streets where people are coming through downtown, I think - I don't think that's necessary given the infrastructure you have already in place in terms of 195. The other thing is it's interesting because yeah, though you maybe go through on this side, if you look, actually if you keep going down. So this is… the site and you go West Main, gonna zoom back out a little bit and you keep going all the way, all the way through it actually just T's.

So it's not even, I think, well-designed to be a thru street, not that it should be, I mean, given the environment, the physical environment. So I think there's a real big case one could make not having done traffic studies on this, but just in terms of physical what's going on that these these could be reverted to two-way streets both of them and since they aren't you know since there is a break and there isn't like a full through on either end. The other thing I noticed too is Carey actually does the same thing as you come down here and keep going. It also just kind of like runs into the train tracks, you know, it goes through, but it just peters out. So it's… it's not like they're connecting, you know, on either end, a very specific destination.

And so I'm thinking about changing them to creating this as a two-way system, both Carey and West Main, I think is… would be one of the recommendations. That's obviously and especially as Tara mentioned, it seems like there's some funding source complexity with how streets get redesigned or renovated or modified and that sort of thing. And I – if we had longer, I'd love to dive deeper to understand a little bit further just how you know, you know, who funds what streets, what percentage and everything like that.

But, you know, that's one-way to two-way street conversion obviously is a big infrastructure undertaking for cities. So you know I guess kind of going down scales like the next thing that I would say was if you're going to keep it one-way, then this really needs to be a parking lane and does not need to be a turn lane, you know. And so that that would get - that would narrow the finish.

And obviously when that becomes a parking lane, whether or not you have a bus stop here or if the bus stop, you know, gets pulled back to maybe this crossing somewhere where it's not as dangerous, you know, given that there isn't, you know, cars stopping or trying to cross here as well. But I would suggest actually putting a bump out here, too, that, you know, as they started or attempted here as well, so that pedestrians have much shorter distances to cross. Or, you know, you put the bump out there, but then you put the the bus stop further back and then…

You know, stepping down further, in short of doing any of that, just changing this curve radius so that people would slow down when they're turning right and that pedestrians have at least can stand on the sidewalk while waiting to cross the street, as opposed to essentially standing on the street. And then obviously moving the light pole. And I'm sure there's other visual clutter that could be further analyzed in terms of doing that.

But I think all of that is just to say that kind of right sizing the design to the speed that you want the vehicles to travel, you know, so it's people shouldn't be using this as like the main thoroughfare to get across town as quickly as possible, because the fact of the matter is, you know, you have a ton of user [errors] for safety.

But, you know, in terms of Richmond, you want people to come down and use their downtown. So, you know, trying to get people through downtown as much as possible is kind of counter to

that. So that's those are kind of my big three recommendations, I would say just in - in terms of order of scale, I think any one of those would help the safety of this intersection.

Rachel Quednau: Thanks very much, Jennifer. So, yeah, converting to two-way, narrowing the lanes with potentially adding parking, bump outs - and then down to a very simple thing of like removing that light pole and that signage that's blocking view of a person waiting to cross. Thank you. Let's go to Brantley. What recommendations would you offer or add to what Jennifer started.

Brantley Tyndall: A couple of years ago, we allowed - or the General Assembly allowed localities to lower speed limits below 25 miles per hour in residential and business districts. I think if you're going to talk about pedestrianizing an area, you should lower the speed limit so that you can then design the speed to that appropriate limit. And where we certainly face this problem, where we can attempt to put in pedestrian improvements, but then the engineers design to a certain speed. And so they look at these big curve radii and look at these wide boulevards, design it to a lower speed and we can we can change the speed limit today if we want.

And by “we”, I mean local leaders. And I think starting with an easy approach and then building appropriately is nice and stepwise and is actionable instead of waiting kind of for the, you know, some future action that could maybe never materialize.

I'm also a big fan of grade separation, and so speed tables and raised intersections I think are extremely effective for highlighting that there are people crossing the street. And what this - as you proceed west on Main Street here, it becomes very clear that you're on campus there. It gets narrower. You get tons of pedestrian activity, the look and feel of the street looks different.

There's actually a catwalk between two buildings over this road just a few blocks to the west, and it feels more constrained and visually, you get the message that you should drive slower. I would imagine that the average speed is much slower two blocks west of here. But this is a transition zone that in particular is pretty, pretty tricky.

And I think it doesn't confuse drivers. It lulls them into a sense of confidence that they can drive quickly. And that's why the problem is so fatal.

Rachel Quednau: Thank you. So especially on lower speed limits so that the design can then meet those limits and also suggesting doing a raised intersection here. That makes a lot of sense. Jordyn, what would you suggest that might make this intersection safer from a design perspective?

Jordyn Taylor: I would say making the distance shorter for pedestrians to walk. Just in that crosswalk, I'm not sure if you’ve ever walked there, it's actually really long to walk from each

side. And then also, I would say a similar pattern to what we have on Fort Avenue. And I can share my screen, where basically VCU created on Fort Avenue where you can actually - they have a security guard and a crossing guard there because it's at peak hours.

And I think that we already – I know Altria when there's events there, they have crossing guards, security guards to ensure pedestrians crossing safely. I think it would be important to have structures like that during the day, especially because we have peak hours of classes of students walking, walking faculty, and just visitors. And also possibly chaining that right lane. I'm not sure if you're aware, but the bus does stop there, but also the James Pulse stops there, the James Shuttle stops there, there are the gym shuttle stops there, RAM safe stops there, which are shuttles VCU created for students. But we don't have clear marked stops. And I think that just changing that right lane dedicated for those pedestrians and stops like that, I think that would help tremendously.

Rachel Quednau: Thank you. So shortening the crossing distance, thinking about even having a crossing or security guard during peak hours and then maybe making that right lane into a dedicated bus lane and yeah, thanks for adding that there's other shuttle busses there too in addition to the city bus. So, a lot of bus activity there as well. Tara, can we hear any recommendations that you would add to this list?

Tara FitzPatrick: Yeah, I mean, I think all of these sort of engineering ideas that have been shared are really helpful and would be really effective at the very least even kind of nudging things along and so I guess I'll get a little bit back to what I spoke about before in talking about some of the institutional things that might be barriers to that.

I can't speak specifically to State Route 147, but I can speak to the times that I've had issues in trying to advocate for improved infrastructure in other parts of the city for some of the schools I have. My children's own school is a part of the Safe Roads to School program. And one day I took them to school and on my way back I noticed that some kids were running late from our neighborhood and the crossing guard had already left for the day.

I also helped manage the crossing guard program so I feel a little sense of obligation to help get these kids across and I went to try and stop traffic. And somebody screamed at me, “What are you doing, trying to cross the street? This is a highway.” And I was furious. I was like, “This is not a highway. This is our neighborhood. These are our kids. This is how they have to get to school.”

But she wasn’t wrong. It's a highway. It was designated as a highway. It performs like a highway. It is engineered to be a highway. And it really shouldn't be. Our cities should be safe spaces. So if there are homes, there are residences, which there is - there is a residence, the huge building right there across the street - then we shouldn't really have highways.

It shouldn't be designated as a highway. And I, I think that has, to me, become a barrier. So I don't know entirely. I'm not as well versed in all of the funding formulas. There's a lot I need to

dig into on that. And I'm really not as well versed in what we're actually allowed to do or just like what I've been told we can't do with regard to the status of the state and federal highways that run through our city streets and through our residential neighborhoods or mixed use neighborhoods.

But I think that peeling those back and removing the status within the city limits on many - if not all - of those state highways would do a lot of good for the entire community. So, I can appreciate that the city supports a lot of the surrounding counties and that people want to come in and enjoy themselves. But there also has to be a sense of respect to those of us who live in the city.

And we need to be able to be prioritizing our students. Our students at VCU need to be prioritized here. Our lives need to be prioritized so that we can access what we need to in our city using whatever mode of transportation it is we choose. So whether it is in a car, we should still be safe because this intersection, this area is not safe by car, if I'm being honest with you. It's not safe on foot, and it's not safe by bike. So all across the city we see these roads like this. And it would be really great to kind of peel that back and make sure that our road system, our road network within the city serves the city and keeps us safe.

Rachel Quednau: Yeah. Thank you. Converting this to not be a state highway would be really helpful. Definitely. Edward, any final thoughts as we come to the end of this session?

Edward Erfurt: Yeah, I just want to reiterate a lot of what everybody else has said, but looking from the Strong Towns approach - and I know the university and I've heard from watching the news stories, we've heard the voices of many students and parents and faculty and even the police chief that are looking for answers here. At this intersection, there's clearly an engineering issue and wide lanes, wide curb radii, not meeting ADA requirements for these pieces.

And what we find from the Strong Towns approach is that in many of those places, those all lead in to exhaustive studies, and then engineering contracts, and a long time to get things to change. And then if they get installed, maybe they're not perfect and then it takes even longer to undo that. So from the Strong Towns approach here, the advice I would give immediately is to go out and do the next smallest thing.

And when I look at this intersection, I think there are a couple of next smallest things that could be done within the next 24 hours. When I'm looking at West Main, well-intentioned, pulling the parking back, it's important - there's a bus lane here, but this is really wide and the drivers can't actually see, you know, there's too much going on and a Strong Towns approach - we would recommend going out and narrowing this road tomorrow with cones or delineator sticks.

We saw the orange barrels that were used before that could be put to remove the extra lanes that aren't necessary and narrow up the pedestrian passage across the travel lanes. Same thing at the intersection - wrapping around the intersection, providing additional areas. These are things that could be done immediately to help that. Removing the signage and this pole could

be done immediately at this location and provide the driver awareness coming into the campus that they're coming into an urban area and the safety for the pedestrians by actually narrowing up the lanes that they go.

Once that's in place, then the next smallest thing would be the physical rework. Now, the reason we always promote cones or delineators is that you can install them and you can continue to move them until you get the design speed that is desired for this location and you can get a lot of data on the ground of how students are going to use this and how drivers are going to use this location with very little risk.

So, if the lanes are too narrow and the busses are getting stuck, then you can move the cone and you can right size it. If the pedestrians aren't being seen clearly, again, you can change the type of cone or bollard that's there to make it so they're more visible. But I think with all of these, what I'd really advocate for is something to occur tomorrow on this site and looking for the next smallest thing by using things that are at our disposal.

I'm sure the university, I'm sure the city, I'm sure the Department of Highways have traffic cones that are available. I'm sure they have paint that is not the thermoplastic, that's almost like house paint that could be put down or chalk paint to test these ideas that could be implemented over the weekend. So by Monday morning when students arrive, changes occurred.

Rachel Quednau: Thank you for that call to action. Ye, Tara.

Tara FitzPatrick: Just one last thing to kind of talk - you know I'm looking at like the bigger institutional, so I really appreciate what you're saying about this, but one of the ways in which we could have those fast things happen, those fast solutions happen is that the city of Richmond does not have a Department of Transportation. And while that is a big ask that we have been trying to make of the city for a few years, if we did have a Department of Transportation, we might be able to be a little more nimble and do those things.

So that is something that we're kind of higher level working on so that we can get those quick and responsive actions in place.

Edward Erfurt: Yeah, I would encourage that, but, you know, part of this studio is to empower that and when - what I was really impressed with the VCU police chief and the action, the immediate actions that he and his department took after this crash. And one of the things that was clear through that is enforcement, you know, the amount of time and energy that went into that for that time to educate drivers, educate faculty, educate pedestrians, educate the police force, write tickets and all of the different fun things that happened to do that.

Education - that didn't change the built environment. What I would say on this is there's nothing to stop the VCU police from putting up cones and barriers on this. And we've seen in other communities that at the grassroots level, you could even do a festival permit in some

locations to go out and these are not permanent conditions that can be put up immediately with the things we have to test it.

And I would not. Yes. Should the city move to something where like the city of Cincinnati has where there's a task force set up to take immediate action? I think that's great. But I think you already have the tools that you could actually begin something immediately and if it makes it safer, then make it permanent. And I think that's the approach that I would really advocate for here, that could really be done. I'm sure the students do activities all the time on campus to do beautification. Here's an opportunity to carry that to this intersection to not only do something beautiful for the intersection, but something that will save lives at the intersection.

Rachel Quednau: Well, we're at the end of our time today, so I want to offer some thanks. First, thank you to Sharon, who nominated this crash for a discussion and help to provide many of the materials that we used. And thank you to the volunteers on the ground that helped conduct the speed study. Thanks also to my colleague Tony for doing a lot of the planning behind the scenes.

And thank you to our various Richmond community members that helped us piece together what took place with this crash and help us understand the intersection better. I want to mention that there is a memorial GoFundMe set up for Mahrokh Khan. If you wish to contribute, Tony just put the link in the chat and we'll have it in the notes accompanying this publication as well.

Thank you to our sponsor for this event, which is an anonymous donor. And thank you so much to each of our panelists who took time to study this intersection and to spend time today sharing their insights. Really appreciate all of you being present today. You can find a recording of this session and all of our cash analysis studio sessions by going to www.strongtowns.org/crash-studio.

And we'll also have resources soon for establishing a studio like this in your own community. That's our hope that this model will spread and be used to hopefully save lives and make safer streets all over the country. On behalf of my colleagues and our 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 everyone.